

Surfex Royal 1817

ANIMAL BIOGRAPHY,

OR

POPULAR ZOOLOGY;

COMPRISING

AUTHENTIC ANECDOTES

OF

THE ECONOMY,

HABITS OF LIFE, INSTINCTS, AND SAGACITY,

OF THE

ANIMAL CREATION.

ARRANGED ACCORDING TO THE SYSTEM OF LINNÆUS.

BY THE REV. W. BINGLEY, A. M.

FELLOW OF THE LINNEAN SOCIETY,
AND LATE OF PETERHOUSE, CAMBRIDGE.

IN THREE VOLUMES.

FOURTH EDITION,

With an Addition of more than One Hundred and Forty Species.

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TO
MRS. SHERBROOKE,
AND
MISS ELIZABETH COAPE SHERBROOKE,
UNITED
IN VIRTUES, IN PURSUITS, AND AFFECTION,
THESE VOLUMES ARE
INSCRIBED,
A TOKEN OF SINCERE ESTEEM AND RESPECT,
BY THEIR MOST FAITHFUL AND
MUCH OBLIGED SERVANT,
WILLIAM BINGLEY.

ADVERTISEMENT


TO THE

FOURTH EDITION.



The present Edition has been most carefully and attentively corrected throughout, and at least one third of the whole has been re-written. For the purpose, solely, of making room for about A HUNDRED AND FORTY ADDITIONAL SPECIES, I have been induced to omit all the notes of reference which were inserted in the preceding editions; and, in order to interrupt as little as possible, the anecdotes of the animals, all the descriptive and technical parts are now inserted in notes.

CHRISTCHURCH, HANTS,
March 1, 1813.



PREFACE.



IN giving the following work to the public, I wish to be understood, as laying no claim whatever to attention, except on the score of utility. If, however, it shall appear, that, avoiding the track of all former writers, I have brought forward anecdotes and observations which tend to promote the study of this delightful science, I shall consider my labour as having by no means been unprofitably bestowed. For this purpose, besides my own immediate observations, I have ranged through a most expensive collection of books, amounting in number to more than a *thousand volumes*; and I have included the accounts of nearly all the authentic travellers and historians, from the earliest periods to the present time.

The principal intention of this work has been to excite, in those persons who have not hitherto attended to the subject, a taste for the study of Natural History. And, by confining my remarks almost exclusively to the habits of life and instincts of the animals, I have endeavoured to lead such of my readers, as may think the subject worth attention, into a train towards making observations for themselves in the grand volume of Nature, which lies always open for their perusal.

In composing these volumes, I have, throughout, attended to every thing which I considered might be of use in

juvenile instruction. Youth are caught by anecdote; and, from this peep into nature, many may be induced to look further than they at first intended, and to enter, with spirit, into the study of such more abstruse books upon the subject, as would, at first sight, have alarmed them.

To the *female reader* I must remark, that every indelicate subject is scrupulously excluded. The dangerous tendency, in this respect, of the writings of the Comte de Buffon, and a few others, his followers, is too generally known to render any further apology for such a liberty necessary.

The system to which I have adhered in my arrangement, is that of Linnæus, as corrected by Gmelin, Shaw, and a few other later writers. This, though not perhaps in every respect so natural as some others, is, I conceive, the best calculated of any extant to simplify and assist the study.

A
L I S T
OF THE
PRINCIPAL WORKS

WHICH HAVE BEEN CONSULTED IN THE PREPARATION
OF THESE VOLUMES *.

-
- Acerbi.* **T**RAVELS through Sweden, Finland, and Lapland, to the North Cape, in the Years 1798 and 1799. 2 vols. 4to. London, 1802.
- Adanson.* Voyage to Senegal, the Isle of Goree, and the River Gambia, by M. Adanson. 8vo. London, 1759.
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- Recreations in Agriculture, Natural History, Arts, and Miscellaneous Literature. vol. i—iv. 8vo. London, 1799.
- Ann. Reg.* Annual Register. 36 vol. 8vo. London, 1758.
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- Barbut.* Genera Insectorum of Linnæus, exemplified by various Species of English Insects drawn from Nature. 4to. London, 1781.
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- Barrington.* Miscellanies. 4to. London, 1781.

* It may be proper to remark, that translations of foreign works, as more easy of access, have been in general preferred to the originals.

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- Barton.* Fragments of the Natural History of Pennsylvania, part the first. folio. Philadelphia, 1799.
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- Battel.* In Purchas's Pilgrimes, vol. ii.
- Baumgarten.* Travels through Egypt, &c. in Churchill's Collection of Voyages, vol. i. London, 1704.
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- Borlase.* Natural History of Cornwall. folio. Oxford, 1738.
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- Boyle.* Philosophical Works, edited by Dr. Shaw. 3 vols. 4to. London, 1738.
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- Cartwright.* Journal of Transactions and Events during a Residence of nearly sixteen Years on the Coast of Labrador. 3 vols. 4to. London, 1792.

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Reaumur. Mémoires pour servir à l'Histoire des Insectes. Par M. de Reaumur, de l'Académie Royale des Sciences. 6 tom.

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- Travels in Upper and Lower Egypt, between the Years 1777 and 1780, undertaken by Order of the Old Government of France: translated by Henry Hunter, D. D. 3 vols. 8vo. London, 1799.
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ON THE STUDY OF NATURE.

“ONCE upon a time the Seven Wise Men of Greece were met together at Athens, and it was proposed that each of them should mention what he thought the greatest wonder in the Creation. One of them, of higher attainments than the rest, explained the opinions of some of the astronomers respecting the fixed stars, that they were so many suns, each having planets rolling round them, which were stocked with plants and animals like this earth. Fired with the idea, they agreed to supplicate Jupiter that he would at least permit them to take a journey to the Moon, and remain there three days, in order to see the wonders of that place, and give an account of them to the world at their return.—Jupiter consented, and ordered them to assemble on a high mountain, where a cloud should be in readiness to convey them thither. They chose some men of talents as their companions, to assist them in describing and painting the objects they should meet with. At length they arrived at the Moon, and found a palace there well fitted up for their reception. The day following, being much fatigued with their journey, they remained in the house till noon; and, continuing still faint, partook of a most delicious entertainment by way of refreshment, which they relished so much that it overcame their curiosity. This day they only saw, through the windows, that delightful country, adorned with the most beautiful flowers, to which the beams of the Sun gave an uncommon lustre; and heard the singing of the most melodious birds, till evening came on.—The second day they rose very early in order to begin their observations; but some elegant females of the country calling upon them, advised that they should first recruit their strength before they exposed themselves

to the laborious task they were about to undertake. The sumptuous banquet, the rich wines, and the beauty of these females, prevailed over the resolution of the strangers. Music is introduced, the young ones begin to dance, and all is turned to jollity; so that the whole of this day seemed dedicated to gallantry, till some of the neighbours, envious of their mirth, rushed into the room with swords. With some difficulty they were secured; and it was promised, as a recompense to the younger part of the company, that on the following morning they should be brought to justice.—On the third day the trial was heard; and what with accusations, pleadings, exceptions, and the judgment itself, the whole day was occupied, and the term which Jupiter had allowed to the Wise Men expired. On their return to Greece, the whole country flocked around them to hear the wonders of the Moon described; but all they could say, for it was all they knew, was, that the ground was covered with green, intermixed with flowers; and that the birds sung delightfully among the trees; but what was the nature of the flowers they saw, or of the birds they had heard, they were entirely ignorant.—On which they were every where treated with the utmost contempt*.”

This fable was applied, by our renowned master Linnaeus, to mankind in general. In youth we are, in every respect, too feeble to examine the great objects around us: all that season, therefore, is lost amidst indolence, luxury, and amusement. We are little better in manhood: settling ourselves in life; marrying; bustling through the world: overwhelmed, at length, with business, cares, and perplexities, we suffer those years also to glide away. Old age succeeds; still some employments intervene, till at last we have passed through the world, without scarcely a single recurrence to the admirable works of our Creator; and, in too many instances, even without having duly considered the end for which we were brought into it.—This,

* In the Lectures of Linnaeus on the subject of Natural History, he frequently made use of some apt similitude by way of exciting the attention of his audience. The present fable was one that he adopted in his Lecture on Insects.

with a few exceptions, is the progress of man through life. It is true that no one is able to avoid being led by his own feelings, occasionally to take note of the wonderful productions with which he is surrounded. All can remark the beautiful verdure of the fields and woods; the elegance of the flowers; the melodious and delightful singing of the birds: yet few indeed ever give themselves the trouble of proceeding a single step further, or exhibit any desire of examining into the nature of these great combinations of Divine Power.

It is one material use of the study of Nature, to illustrate this most important of all truths:—"That there must be a God: that he must be almighty, omniscient, and infinite in goodness; and that, although he dwells in a light inaccessible to any mortal eye, yet our faculties see and distinguish him clearly in his works."

In these we are compelled to observe a degree of greatness far beyond our capacities to understand:—we see an exact adaption of parts composing one stupendous whole; an uniform perfection and goodness that are not only entitled to our admiration, but that command from us the tribute of reverence, gratitude, and love, to the Parent of the Universe. Every step we take in our observations on Nature, affords us indubitable proofs of his superintendence. From these we learn the vanity of all our boasted wisdom, and are taught that useful lesson, humility. We are compelled to acknowledge our dependence on the protecting arm of God, and that, deprived of this support, we must that moment dissolve into nothing.

Every object in the Creation is stamped with the characters of the infinite perfection and overflowing benevolence of its author. If we examine with the most accurate discrimination the construction of bodies, and remark even their most minute parts, we see clearly a necessary dependence that each has upon the other; and if we attend to the vast concurrence of causes that join in producing the several operations of Nature, we shall be induced to believe further, that the whole world is one connected train of causes and effects, in which all the parts,

either nearly or remotely, have a necessary dependence on each other. We shall find nothing insulated, nothing dependent only on itself. Each part lends a certain support to the others, and takes in return its share of aid from them.

Previously to entering further into the subject, we will examine for a moment that part of every animal body called the Eye, which, though one of the most conspicuous, is not still the most surprising part of the body. Here we have exhibited to us nicety of formation, connexions, and uses, that astonish us. We see it placed in a bony orbit, lined with fat, as an easy socket in which it rests, and in which all its motions readily take place. We find it furnished, among many others, with those wonderful contrivances the iris, pupil, and different humours; and that incomprehensible mechanism the optic nerve, which affords to the brain, in a manner greatly beyond our conceptions, the images of external objects.—How admirable is the construction of the Skeleton! every particular bone adapted peculiarly to the mode of life and habits of the animal possessing it. The muscular system is still more entitled to our wonder; and, if we enter into examination of the viscera, the skin, and the other parts of the body, we can fix no bounds to our astonishment.

But all the common operations of Nature, surprising as they are, become in general so familiar to us, that in a great measure they cease to attract our notice. Thus also all the usual powers of animal life, which, were they but adverted to, could not fail to affect the mind with the most awful impressions, are suffered to operate unheeded, as if unseen.—We all know, for example, that, whenever inclination prompts to it, we can, by a very slight exertion of our vital faculties, raise our hand to our head. Nothing seems more simple, or more easy, than this action; yet when we attempt to form an idea of the way in which that incorporeal existence which we call *mind*, can operate upon matter, and thus put it in motion, we are perfectly lost in the incomprehensible immensity that surrounds us. When we try to investigate the properties of matter, we perceive that by patience and attention we can make a progress in attainments to which, according to our limited ideas, bounds can scarcely be assigned.

The motions of the planets can be ascertained, their distances measured, and their periods assigned. The Mathematician can demonstrate, with the most decisive certainty, that no Fly can alight upon this globe which we inhabit without communicating motion to it; and he can ascertain, if he chooses to do it, with the most accurate precision, what must be the exact amount of the motion thus produced. In this train of investigation the mind of a Newton can display its superior powers, and soar to a height that exalts it far above the reach of others; and yet, in trying to explain the cause of animal motion, the meanest reptile that crawls upon the ground is, humiliating as the thought may be, on a footing of perfect equality with a Newton: they can alike exert the powers conferred on them by the Almighty Creator, without being able to form the smallest idea of the way in which they are enabled to produce these effects. Man, however, can contemplate these effects if he will; and Man, perhaps alone, of all the animals that exist on this globe, is permitted, by contemplating the wonders which these unfold, to form, if he pleases, some idea of his own nothingness, with a view to moderate his pride, and thus to exalt himself above the unconscious agents that surround him.

When the Anatomist considers how many muscles must be put in motion before any animal exertion can be effected; when he views them one by one, and tries to ascertain the precise degree to which each individual muscle must be constricted or relaxed, before the particular motion indicated can be effected, he finds himself lost in the labyrinth of calculations in which this involves him. When he further reflects that it is not his own body only that is endowed with the faculty of calling forth these incomprehensible energies, but that the most insignificant insect is vested with similar powers, he is still more confounded. A skilful naturalist has been able to perceive that in the body of the lowest Caterpillar, which, in the common opinion, is one of the most degraded existencies on this globe, there are upwards of *two thousand* muscles, all of which can be brought into action with as much facility, at the will of that insect, and perform their several offices with as much accuracy, promptitude, and precision, as the most perfect animal; and all this is done by that

insect, with equal consciousness of the manner how, as the similar voluntary actions of Man himself are effected*! It would be no easy matter to make some men believe that the most minute insect, whose whole life may be calculated for only the duration of a few hours, is, in all its parts, for the functions it has to perform, as complete as the majestic Elephant that treads the forests of India for a century. Little do they suppose that even in its appearance, under the greatest magnifying powers, it is as elegant in every respect, and as beautifully finished, as any of the larger animals! Unlike the paltry productions of Man, all the minute parts of these works of God appear in greater perfection, and afford to us a greater degree of admiration, the more minutely and more accurately they are examined. M. de Lisle saw, with a microscope, a very small insect, that in one second of time advanced three inches, taking *five hundred and forty* steps; and many of the discoveries of Leuwenhoek were even still more wonderful than this. Thus we evidently discern that all the operations of God are full of beauty and perfection, and that he is as much to be adored in the Insect Creation as in that of the Elephant or Lion.

If, from the contemplation of microscopic objects, we turn our attention to the stupendous system of the Universe, and view the Heavens, what an astonishing field of admiration is again afforded us! This huge world that we tread is but a speck in the solar system; and that system, immense as it is, is lost in the immensity of the space around, our Sun becoming a star to Planets revolving round other Suns, as their Suns become Stars to us. Of these no fewer than *seventy-five millions* may be discovered in the expanse exposed to our investigation. But what are even all these when compared with the multitudes distributed through the boundless space of air! The Universe must contain such numbers as exceed the utmost stretch of human imagination.—To obtain some faint conception of the wonderful extent of space, we may remark that stars of the first magnitude, or such as seem to us the largest, are

* Anderson's Recreations in Agriculture.

nearly 19,000,000,000,000 miles from our Sun; and that some of the smaller ones are at many times that distance! "Great is our God, and great is his power! O God, who is like unto thee!"

But to return to the animal Creation, we find there innumerable proofs of our hypothesis; we see all the smaller creatures that serve us for food particularly fruitful, and increasing in a much greater proportion than others; and in the bird kind it is extremely remarkable, that, lest they should fall short of a certain number of eggs, they are endowed with the power of laying others in the place of those that are taken away; but when their number is complete they invariably stop. Here is an operation, like many others that we shall have to observe, much beyond the reach of our faculties to comprehend. How the mere privation of part should cause a fresh production, is not indeed easy to understand. The organization of an offspring should, in this case, almost seem a voluntary act of the female; but in what manner it is done, we are not only ignorant at present, but most probably shall ever remain so. Noxious animals multiply in general so slowly as never to become above the power of Man. But whenever we find a great increase of these, we generally discover something given by Providence to destroy and counter-balance them. Many species devour each other; and multitudes, that might otherwise, by their numbers, soon become of serious injury to mankind, afford food to other creatures. The insect tribes increase most rapidly. Some produce so many as two thousand young each: these would soon fill the air, were they not destroyed by innumerable enemies.

The number of young produced by every animal invariably bears a certain proportion to the duration of its life. The Elephant is said to live to the age of a hundred years or upwards: the female produces therefore but one young one, and this does not arrive at maturity till it is sixteen or eighteen years old. Nearly the same thing may be remarked of the Rhinoceros, and all the larger animals: but in most of the smaller ones, whose life is short, or whose increase is not so injurious to Man as the increase of these would be, we always find the number of

offspring much greater: many of the Rat, and other tribes, produce several times in the year, and have, from three or four, to ten and upwards at a litter.—One species has never been found to increase so much as to exclude the others; and this singular harmony and just proportion has now been supported for several thousand years. “One generation passeth away, and another succeedeth,” but all so equally as to balance the stock in all ages and in all countries.

We will for a moment recur, as it certainly is not inappropriate to our subject, and is a material illustration of the above remarks, to the first peopling of the world. In the beginning we find that the life of Man was lengthened to ten or twelve times its present term. After the Flood it appears to have been the same. We have an account of one person who lived upwards of nine hundred years. Several of those born in the first century reached four hundred years; none of the second, that we can discover, reached two hundred and forty; and only one of the third, arrived at the age of two hundred years. The number of children had also been in full proportion to the age; and at this period cities, nations, and societies began to be formed. In the time of Moses, when the Earth was fully peopled, and from thence to the present, we find that seventy or eighty years was the extent of Man's life. “The days of our age,” says David, “are threescore years and ten; and though Men be so strong that they come to fourscore years, yet is their strength then but labour and sorrow, so soon passeth it away, and we are gone.” These exact adaption to circumstances and situations can be accounted for in no other manner than by an immediate recurrence to God, their first cause.

In the Vegetable Creation we observe the same regularity as in Animals. There is scarcely a vegetable of any kind that is not rejected as food by some animals, and ardently desired by others. Numerous also are the plants which, at the same time that they afford only the natural nourishment to some, are, by others, cautiously shunned, because to them they would be poisonous and destructive. Thus does every creature enjoy its allotted portion; and all this was contrived for the best and

wisest of purposes. Had the Author of Nature formed all the plants equally grateful to all kinds of animals, it must necessarily have happened that some species would have had an enormous increase, whilst others must have perished for want of food. But as every species must of necessity leave certain plants to certain animals, we find that all are able to obtain their due share of nourishment.

All animals are calculated, in every respect, and in the best possible manner, for the climates in which they reside, and for their separate and peculiar modes of life. In the dreary northern regions, the dark animals become white, to evade, by their resemblance to the prevailing colour of the country, the quick sight of their enemies. Their clothing, also, becomes, during winter, nearly double what it is in the summer. In torrid climates the Sheep, as it is stated, loses his fleece, and is covered with hair. The Camel, that traverses the burning sands of the deserts, is formed with soft spongy feet, which the heat cannot crack: it has a reservoir of water, which enables it to resist for many days the attacks of thirst, in a country where water is not to be had; and it is contented with browsing on such miserable food as is to be met with in its progress.—We might proceed with other, innumerable, instances; but these are reserved, with greater propriety, for the body of the work.

In vegetables again, we observe similar marks of superintendence. Some are alpine, and can exist only on the summits of mountains; some grow in marshes; others on the sandy plains, &c. and each of these is exactly adapted to its peculiar situation. The plants of the desert are nearly all succulent, and able to bear the privation of moisture for an astonishing length of time. Those that are found on the sea-shore could not, in many instances, be retained in their situation, did not their roots become so matted among the sand, or strike so deeply down, as to render them perfectly immoveable by all the shocks they sustain either from the wind or water. It is also a remarkable circumstance, that Evergreens grow principally in the hottest climates, where they are chiefly found in the barren woods; thus affording

a natural shelter to the various animals from the excessive heats to which they would otherwise be exposed.

If we attend to the contrivances of Providence in the preservation of those animals that would otherwise, in the colder climates, be deprived of food during the winter, we have an additional source of admiration. Most of the insect-eating tribes either migrate to other countries, or become torpid during this rigorous season. Insects themselves, unable to bear the extreme cold, generally lie hidden within their cases, from which, at the approach of Spring, they burst, and fly forth. Some animals, as the Beaver, Squirrels, &c. that feed on such vegetables as can be preserved through the winter, do not sleep, but live in their retreats on those provisions which their Creator has kindly taught them to store up in the summer.

The preservation of the young of all animals is not less wonderful than this. However savage may be the natural disposition of the parents, they are almost invariably affectionate towards their offspring, and provide every thing necessary for them with the utmost tenderness. However powerful their enemies may be, the dam will stand forward in their defence, and frequently die rather than yield them up. In no more than about three species, of all that our books have mentioned, are we able to trace any want of affection in the female parents, to whose care the young generally devolve: and even these *may* have arisen from the misapprehensions of the writers; for Nature seems so uniform in this necessary and pleasing operation, that we cannot allow, without superabundant proof, even of exceptions. Quadrupeds, when they bring forth their young, have, secreted in receptacles provided for the purpose, a fluid which we call milk. With this the young are nourished, till their stomachs are able to bear, and their teeth to chew, more solid food. As Birds are destitute of this, their offspring are able, as soon as hatched, to take into their stomachs such food as the parents collect for them. The insect tribes are generally brought to life in a nidus that itself affords them nourishment. Thus does an uniformly beautiful contrivance, in the rearing and nourishing

of their offspring, whilst unable to provide food for themselves, pervade every species of the animal creation.

It is also a circumstance deserving peculiar remark, that birds of the same species always form the same kind of nest, of the same materials, laid in the same order, and made exactly of the same figure; so that, whenever a nest is seen, the bird that constructed it is immediately known. This circumstance is invariable in all birds and in all countries; with those taken, when just hatched, from the nest, and brought up in a cage, as well as with those that have all their lives been in a wild state.

From the animal we will once again turn to the vegetable kingdom, and examine into the contrivances of Nature there. If we look around us, we shall find it a very difficult matter to discover an entirely barren spot. If by any devastation such is made, it does not long remain unoccupied. Seeds are soon scattered over it; the downy ones of the thistles, wafted by the winds, are the first to take root, and after these come various other plants, till at length the whole space is filled. If a rock is left entirely bare by the receding of water, the minute crustaceous Lichens in a few years entirely cover it. These, dying, turn to earth, and the imbricated Lichens now have a bed to strike their roots into. These also die, and various species of Mosses succeed; and when, after some time, a sufficiency of mould has been formed, the larger plants, and even shrubs, take root and live.

The quickness of vegetation in hot and cold climates is so astonishing, as to be perfectly unaccountable, were we not able to refer it to a most exalted wisdom.

The following is the Calendar of a Siberian or Lapland Year.

June 23. Snow melts.

July 1. Snow gone.

9. Fields quite green.

17. Plants at full growth.

July 25,

July 25. Plants in flower.

August 2. Fruits ripe.

10. Plants shed their seed.

18. Snow.

From August 18, to June 23, Snow and Ice.

Thus it appears that, from their first emerging from the ground to the ripening of their seeds, the plants take but a month; and Spring, Summer, and Autumn, are crowded into the short space of forty-six days*.

Again, in the torrid climates, where a scorching heat, destructive to general vegetation, prevails through the greater part of the year, we have a similar wonderful contrivance. In India, when the wet season commences, the rain falls in such abundance, that, in the course of a few hours, ponds of considerable depth are formed in every hollow place, in many of which there had not been, for several months past, the smallest appearance even of vegetation or of moisture. No sooner, however, does the rain begin to fall, than vegetation commences; and in less than twenty-four hours the appearance of verdure can be distinctly perceived whichever way the eye is directed. But the most surprising circumstance is, that very shortly after this verdure begins to appear, these newly formed ponds are found swarming with fish of such a size as to admit of being taken with nets, and to afford food for man. This circumstance is related by Dr. Anderson, on the authority of a very respectable person of Bombay, and was not stated until the fullest inquiries had been made, and the most satisfactory evidence had appeared respecting it†.

Thus does the uniform voice of Nature exclaim aloud, that "the merciful and gracious Lord hath so done his mar-

* *Amoenitates Academicæ*, vol. iv.—Stillingfleet.

† *And. Rec.* in *Ag.* i. 270.

vellous works, that they ought to be had in remembrance." The whole material system throughout heaven and earth, presents a varied scene rich in use and beauty, in which nothing is lost, and in which, according to our former observations, the meanest and minutest creatures have their full designation and importance.—"Thus saith the Lord, thy Redeemer, and he that formed thee from the womb, I am the Lord, who maketh all things, who stretcheth forth the heavens along, and spreadeth abroad the earth by myself."

Nothing of all these various existencies was formed in vain; and that which is, however it may appear to our confined and imperfect comprehensions, is formed with supreme wisdom. It does not become us to pry too boldly into the designs of God. We are unable to judge of the councils of that Providence, whose economy regards, not the objects merely of our senses, but the whole system of nature. He did not plan the order of nature according to our confined principles of economy. The stupendous performance of the Almighty is one throughout the universe; and if Providence does not always calculate exactly according to our mode of reckoning, it would but become our inferior stations and judgment, instead of industriously seeking out imperfections, to discover that these lie alone in our own erroneous powers of discrimination.

From the preceding observations, it appears that Natural History affords us a much more extensive moral than has generally been supposed. And the blind curiosity, which formerly was the principal motive in making collections and studying the science, is now giving way to more noble and more estimable ideas; and there are yet, "in the instructive book of Nature, many leaves which hitherto no mortal has perused." It is evident that the general tendency of the study is to lead us from the admiration of the works, to the contemplation of their Author; to teach us to look, through Nature, up to Nature's God. It is a study which

terminates in the conviction, the knowledge, and the adoration of that gracious and merciful Being, to whose goodness alone it is we are indebted for every happiness that we enjoy.

OF ANIMALS IN GENERAL

These are thy glorious works, Parent of Good,
Almighty! Thine this universal frame,
Thus wondrous fair; thyself how wondrous then!
Unspeakable, who sitt'st above these heav'ns,
To us invisible, or dimly seen
In these thy lowest works; yet these declare
Thy goodness beyond thought and power divine!

ON THE
STRUCTURE AND FUNCTIONS
OF ANIMALS IN GENERAL.

MAMMIFEROUS ANIMALS.

(*Quadrupeds and Whales.*)

The class of animals denominated by Linnæus *MAMMALIA*, comprehends all those which nourish their offspring by means of lactiferous glands or teats, and which have, flowing in their veins, a warm and red blood. It includes the *whales*, an order that, from external shape and habits of life, has usually been arranged among the fishes. It is true that these animals inhabit exclusively the water, an element in which none of the quadrupeds can long subsist, and are furnished, like the fish, with fins: still, however, in every essential characteristic, they exhibit an alliance to the quadrupeds. They have warm blood, produce their young alive, and nourish them with milk furnished from teats. In their internal structure they are, likewise, in a great measure allied to the quadrupeds, having similar lungs, and two auricles and two ventricles to the heart.

The bodies of nearly all the mammiferous animals are covered with *hair*, a soft and warm clothing, liable to little injury, and bestowed in quantity proportioned to the necessities of the animals, and the climates which they inhabit. In most of the aquatic quadrupeds this covering, from its too free absorption of moisture, is wanting.

The *head*, in all the higher orders of animals, is the seat of the principal organs of sense, the mouth, the nose, the eyes, and the ears. It is through the mouth that they receive their nourishment. This contains the *teeth*, which, in most of the *Mammalia*, are used not only for the mastication of food, but as

weapons of offence. They are inserted into two moveable bones called the upper and under jaw. The front teeth, whose office it is to cut, are wedge shaped, and so placed that, in action, their sharp edges are brought into contact, and thus divide the aliment. Next to these, on each side, are situated the canine teeth or tusks. They are longer than the other teeth, conical and pointed; but the points do not directly meet on closing the mouth. Their use is to tear the food.—The teeth in the back of the jaw, between which the food is masticated, are called grinders. In animals that live on vegetables, these are flattened at the top; but, in carnivorous animals, their upper surfaces are furnished with sharp conically pointed protuberances. From the numbers, form, and disposition of the teeth, the various genera of quadrupeds have been arranged.

The *nose* is a cartilaginous body pierced with two holes called nostrils. In some animals this is prominent, in others flat, compressed, turned upwards, or bent downwards. In beasts of prey it is often either longer than the lips, or of equal length with them. In a few animals it is elongated into a moveable trunk or proboscis, and in one tribe, the Rhinoceros, is armed with a horn.

The *eyes* of quadrupeds are for the most part defended by moveable eye-lids, whose outer margins are furnished with hairs, called eye-lashes. The opening of the pupil is in general circular; but in some animals, as Cats and Hares, it is contracted into a perpendicular line; and in Oxen, Horses, and a few others, it forms a transverse bar. The opening contracts during the day, in order that the very sensible retina may not be irritated by the rays of light; and, on the contrary, is expanded in the dark, to allow as many rays to pass as possible.

The *ears* are openings generally accompanied by a cartilage which defends and covers them, called the external ears. In aquatic animals the latter are wanting, the sounds in them being transmitted merely through orifices in the head, which have the name of *auditory holes*. The most defenceless animals are very delicate in their sense of hearing, as are likewise most of the beasts of prey. In wild animals the ears are erect and somewhat

funnel-shaped, capable of having their opening turned towards the quarter from whence the sounds proceed ; but in those that are tame or domestic, the ears are, for the most part, long and pendulous.

The head is joined to the body by the neck ; and all those animals that often extend their arms or anterior feet forward, either to seize upon objects, as the Monkeys, or to fly, as the Bats, have, annexed to the upper part of the thorax, *clavicles* or collar-bones. The clavicle of the Mole is particularly remarkable, on account of its thickness, which exceeds its length. The collar-bones are wanting in those animals that use their anterior extremities for progressive motion only ; and there are rudiments of them in such as hold a middle station betwixt these two orders.

Most of the Mammiferous Animals walk on four feet, which are usually divided at the extremities into toes or fingers. The extremities, however, of some, as the Horse, end in a single corneous substance, called a hoof. The toes of a few of the quadrupeds end in broad flat nails, and of most of the others in pointed claws. Sometimes the toes are connected together by a membrane : this is the case in animals that reside much in the water. Sometimes, as in the Bats, the digitations of the anterior feet are greatly elongated, having their intervening space filled by a membrane which extends round the hinder legs and the tail, and by means of which they are enabled to rise into the air.

Man, and a certain number of animals, are capable of seizing objects, by surrounding and grasping them with their fingers. For this purpose the fingers are separate, free, flexible, and of a certain length. Man has such fingers on his hands only ; but Apes and Lemurs have them both on their hands and feet.

With respect to the internal structure of Quadrupeds—that warm and red fluid called blood flows, through the body, from the heart, its common reservoir, by a series of vessels called arteries, and returns by another series denominated veins. During the circulation, various fluids are separated from the blood, and carried through little vessels to be lodged in proper reser-

veirs. These fluids, which are termed *secretions*, have generally a powerful odour, and are adapted to various purposes in the system.

The *lungs* of Mammiferous Animals consist of two lobes, and are placed within the thorax or chest. Into these the atmospheric air is inspired from the mouth; and in them the vital air and the matter of heat are separated; the former, containing the only principle proper for the maintenance of life, and the latter being necessary towards keeping up the fluidity of the blood. The mephitic air, which remains after the separation, is immediately expired. This act of drawing in the atmospheric air, separating the vital air and matter of heat, and ejecting the mephitic air, is termed respiration.

In *digestion* it is that the juices calculated to nourish and support the body become separated from the other less useful parts of the food. Reduced to a pulp by means of the teeth and saliva, this is thrown into a canal which, below the thorax, terminates in a large bag or reservoir, called the stomach. Here the aliment, penetrated and further dissolved by new juices, undergoes a trituration from the action of the stomach; and the nutritive juices, which, on their union, are denominated *chyle*, are now expressed. These are taken up by little vessels called *lacteals*, and become converted into new blood and flesh. The alimentary canal again contracts on leaving the stomach, and twisting into a great variety of folds, acquires the name of intestines. The residue of what is not converted into *chyle* traverses these numerous sinuosities, and at last is expelled the body.

The bodies of all Mammiferous Animals are supported by a frame of bones, called a *skeleton*. To these bones are attached the *muscles* or flesh, assemblages of fibres held together by membranes, and terminating in a kind of cords, which are denominated tendons. These muscles, when excited, produce motion in the different parts of the body; and it is their action which gives to all animals the power of changing their place, and performing the various movements that are necessary to their wants.

The sensation of animals arises from an irritation taking place on the ends of certain cords called *nerves*. These are either

prolonged from the spinal marrow, or they are united in pairs in the brain.

In the general economy of Nature it is one great business of this class of animals to keep up a constant equilibrium in the number of animated beings of the world. To man they are immediately useful in various ways; they afford him their bodies for food, and their fleece to shelter him from cold. Some of them partake with him the dangers of combat with his enemies; and others pursue and obtain for him the animals necessary to his subsistence. Many indeed are injurious to him; but most of them, in some shape or other, prove their services and importance.

Of Cetaceous Animals, as distinct from the Quadrupeds.

The Cetaceous Animals constitute Linnæus's seventh Order of Mammalia. They inhabit chiefly the seas of the polar regions, and many of the species are of huge size. From their external shape, and habits, as already observed, they seem nearly allied to the fish; they reside in the same element, and are, like them, endowed with progressive powers of motion in that element; but in their internal structure they agree, in every essential respect, with the quadrupeds.

Like them they breathe air by means of true lungs: this compels them frequently to rise to the surface of the water to respire; and on this account it is that they always sleep on the surface. Their nostrils are open, and are situated on the summit of the head, which enables them to draw in the air without raising the mouth out of water. These nostrils also serve them as canals for expelling the superfluous water which they take in at the mouth every time they attempt to swallow their prey. They have also warm, red blood; and they produce and suckle their young in the same manner as the quadrupeds. They likewise resemble them in having moveable eye-lids, and true bones;

and in their power of uttering loud and bellowing sounds, a faculty altogether denied to the scaly tribes.

The Cetaceous animals have a smooth skin, not covered with hair. Their feet are very short; those on the fore part of the body being formed like fins, and the hinder ones being united into an horizontal tail. The substance of the latter is so firm and compact, that the vessels will retain their dilated state even when cut across.

The fat of this order of animals is what we generally term blubber. It does not coagulate in our atmosphere, and is probably the most fluid of all animal fats. It is found principally on the outside of the muscles, immediately under the skin, and is in considerable quantity. The blubber appears principally to be of use in poising their bodies: it also keeps off the immediate contact of the water with the flesh, the continued cold of which might chill the blood; and in this respect it serves a purpose similar to that of clothing to the human race.

It is probable that the Cete swallow all their food whole, since they are not furnished with instruments capable either of dividing or masticating it. The mouth, in most of the species, is well adapted for catching their prey, from the jaws spreading out on each side as they are drawn back. In the place of teeth, the mouth in some of the whales is supplied with laminae of horn called *whalebone*.

This, which is situated on the inside of the mouth, and is attached to the upper-jaw, is extremely elastic, and consists of thin plates of very considerable length and breadth, placed in several rows, encompassing the outer skirts of the upper-jaw, like the teeth in other animals. The laminae are parallel to each other, having one edge towards the circumference of the mouth, and the other towards the centre or cavity. The outer row is composed of the longest plates, some being fourteen or fifteen feet in length, and twelve or fifteen inches broad: but towards the anterior and posterior parts of the mouth they gradually become very short.—The whalebone is continually wearing down, and renewing in the same proportion. It is supposed to be principally of use in the retention of food till swallowed: for, as the

fish, and other marine animals, which the Cete catch, are very minute when compared with the size of their mouth, a quantity sufficient for their nutriment, without some such guard, could scarcely be retained.

From these animals being resident entirely in the water, and generally far removed from the haunts of man, we cannot be supposed to have acquired any very correct knowledge of their manners or habits of life: their species even are but imperfectly known.

The Mammiferous Animals have been divided by Linnæus into seven orders.

1. *Primates*, which have four front-teeth in each jaw; and one canine-tooth on each side in both jaws. The principal animals of this order are the Apes, Lemurs, and Bats. They subsist chiefly on vegetable food.

2. *Bruta*. These are entirely destitute of front teeth. Their food is for the most part vegetable. The tribes consist of the Sloths, Ant-Eaters, Rhinoceros, Elephant, and Manati.

3. *Fera*, which have generally six front-teeth in each jaw; and one canine-tooth on each side, in both jaws. This is a predacious order, the animals being all more or less carnivorous; these are Seals, Dogs, Cats, Weesels, Otters, Bears, Kangaroos, Moles, Shrews, and Urchins.

4. *Glires*, which have two long front-teeth in each jaw; and no canine-teeth. They chiefly feed on vegetables. The different genera comprise the Porcupines, Cavies, Beavers, Rats, Marmots, Squirrels, Dormice, Jerboas, Hares, and Hyraxes.

5. *Pecora*, which are without front-teeth in the upper jaw, and on their feet have cloven hoofs. The animals live entirely on vegetables; and all the species ruminates or chew their cud. The tribes are the Camel, Musk, Deer, Giraffe, Antelope, Goat, Sheep, and Ox.

6. *Bellua*, which have obtuse front-teeth in each jaw, and undivided hoofs on their feet. The animals, namely, the Horses, Hippopotamus, Tapir, and Hogs, subsist on vegetable food.

7. *Cets* or *Whales*. Instead of feet these animals, which comprise the Narwal, Whale, Cachalot, and Dolphin tribes, have fins. On the front part of the skull there are spiracles or breathing holes. The teeth differ in the different species; and the tail is flattened horizontally. They are inhabitants only of the sea.

BIRDS.

There is no division of the animal world in which we are more led to admire the wisdom of the Supreme Being, than in the different feathered tribes. Their structure and habits of life are wonderfully fitted for the various functions they have to perform. Their bodies are clad with feathers, which form an envelope much lighter than hair. These lie over each other, close to the body, like the tiles of a house; and are arranged from the fore-part backwards, by which means the animals are enabled the more conveniently to cut their way through the air. For this end also the head is small and the bill somewhat wedge-shaped: the neck long, and easily moveable in all directions; and the body slender, sharp on the under side, and flat or round on the back. The bones likewise are hollow, and very light comparatively with those of terrestrial animals. For the purpose of giving warmth to the body, a short and soft down fills up all the vacant spaces between the shafts of the feathers.

Birds are enabled to rise into and move from place to place in the air, by means of the members that are denominated *wings*. The muscles by which the wings are moved are exceedingly large; and have been estimated, in some instances, to constitute not less than the sixth part of the weight of the whole body. When a bird is on the ground, and intends to fly, he takes a leap, stretches his wings from the body, and strikes them downward with great force. By this stroke they are put into an oblique direction, partly upwards and partly horizontally forward. That part of the force tending upwards is destroyed by the weight of the bird; and the horizontal force serves to carry him forward. The stroke being completed, he moves up his wings;

which being contracted, and having their edges turned upward, meet with very little resistance from the air. When they are sufficiently elevated, he makes a second stroke downwards, and the impulse of the air again moves him forward. These successive strokes act as so many leaps taken in air. When the bird wants to turn to the right or left, he strikes strongly with the opposite wing, and this impels him to the proper side. The tail acts like the rudder of a ship; except that it moves him upward or downward, instead of sideways. If the bird wants to rise, he raises his tail; and if to fall, he depresses it: whilst he is in an horizontal position, it keeps him steady.

A bird, by spreading his wings, can continue to move horizontally in the air for some time, without striking; because he has acquired a sufficient velocity, and his wings, being parallel to the horizon, meet with but small resistance; and when he begins to fall, he can easily steer himself upwards by his tail, till the motion he had acquired is nearly spent, when he must renew it by two or three more strokes of his wings. On alighting, he expands his wings and tail full against the air, that they may meet with all the resistance possible.

The centre of gravity in birds is somewhat behind the wings; and, to counterbalance it, most of them may be observed to thrust out their head and neck in flying. This is very apparent in the flight of Ducks, Geese, and several other kinds of waterfowl, whose centre of gravity is farther backwards than in the land birds. In the Heron, on the contrary, whose long head and neck, although folded up in flight, overbalance the rest of the body, the long legs are extended, in order to give the proper counterpoise, and to supply what is wanting from the shortness of the tail.

The *feathers* of birds would perpetually imbibe the moisture of the atmosphere; and, during rain, absorb so much wet, as would almost, if not wholly, impede their flight, had not the wise economy of nature obviated this by a most effectual expedient.—They are each furnished on the rump with two glands, in which a quantity of unctuous matter is constantly secreting. This is occasionally pressed out by means of the bill, and used

for the lubrication of the feathers. The birds that share, as it were, the habitations of man, and live principally under cover, do not require so great a supply of this fluid; and therefore are not provided with so large a stock as those that rove abroad, and reside in the open element. It is on this account that poultry, when wet, make the ruffled and uncomfortable appearance that we observe.

As these animals are continually passing among hedges and thickets, they are provided, for the defence of their eyes, from external injuries, as well as from too much light when flying in opposition to the rays of the sun, with a nictitating or winking membrane, which can at pleasure be drawn over the whole eye like a curtain. This covering is neither opaque nor wholly pellucid, but is somewhat transparent. In Birds we find that the sight is much more piercing, extensive, and exact, than in the other orders of animals. The eye is greatly larger in proportion to the bulk of the head, than in any of these. This is a superiority conferred upon them not without a corresponding utility; it seems even indispensable to their safety and subsistence. Were this organ dull, or, in the least degree, opaque, they would, from the rapidity of their motion, be in danger of striking against various objects in their flight. In this case their celerity, instead of being an advantage, would become an evil, and their flight must be restrained by the danger resulting from it. Indeed, we may consider the velocity with which an animal moves, as a sure indication of the perfection of its vision.

Birds *respire* by means of air-vessels, that are extended through the whole body, and adhere to the under-surface of the bones. These, by their motion, force the air through the true lungs, which are very small, somewhat of the shape of the human lungs, and are seated in the uppermost part of the chest, and closely braced down to the back and ribs. The lungs, which are never expanded by air, are destined for the sole purpose of oxidating the blood. The use of this general diffusion of air through the bodies of birds, is to prevent their respiration from being stopped or interrupted by the rapidity of their motion through a resisting medium. The resistance of the air

increases in proportion to the celerity of the motion; and were it possible for a man to move with swiftness equal to that of a Swallow, the resistance of the air, as he is not provided with reservoirs similar to those of birds, would soon suffocate him.

The abode of these tribes is very various. Some species are confined to particular countries; others are widely dispersed; and several change their abode at certain seasons of the year, and *migrate* to climates better suited to their temperament or mode of life, for a certain period, than those which they leave. Many of the birds of our own island, directed by a peculiar and unerring instinct, retire, before the commencement of the cold season, to the southern parts of Africa, and again return in the spring. The causes usually assigned for migration are, either a defect of food, or the want of a secure and proper asylum for incubation and the nutrition of their young. They generally perform their migrations in large companies; and, in the day time, follow a leader, who is occasionally changed. Many of the tribes make a continual cry during the night, in order to keep themselves together. Thus they

Rang'd in figure, wedge their way, and urge
Their airy caravan; high over seas
Flying, and over lands, with mutual wing
Easing their flight.

The following is a table of the migration of several of the British Birds, taken on the average of about twenty-six years; from the observations of Mr. Markwick, inserted in the first and fourth volume of the Linnean Transactions.

		First seen.	Last seen.
Swallow	<i>Hirundo rustica</i>	April 18	Oct. 31
Martin	<i>Hirundo urbica</i>	March 4	Oct. 16
Sand Martin	<i>Hirundo riparia</i>	March 26	Sept. 12
Swift	<i>Hirundo apus</i>	May 9	Sept. 3
			Goatsucker

		First seen.	Last seen.
Goatsucker	<i>Caprimulgus europæus</i>		Sept. 27
Turtle Dove	<i>Columba turtur</i>	June 5	Aug. 10
Wry-neck	<i>Yunx torquilla</i>	March 26	Sept.
Cuckoo	<i>Cuculus canorus</i>	May 1	Aug. 10
Nightingale	<i>Motacilla lusciniæ</i>	April 25	Sept. 20
Blackcap	<i>Motacilla atricapilla</i>	May 10	Sept. 18
White-throat	<i>Motacilla sylvia</i>	April 22	Sept. 16
Wheat-ear	<i>Motacilla œnanthe</i>	May 4	Sept. 26
Whinchat	<i>Motacilla rubetra</i>	June 1	Sept. 21
Redstart	<i>Motacilla phœnicurus</i>	April 24	Sept. 1
Willow-wren	<i>Motacilla trochilus</i>	April 23	Sept. 24
Fly-catcher	<i>Muscicapa grisola</i>	May 8	Sept. 30
Red-backed Shrike	<i>Lanius collurio</i>	June 1	Aug. 16
Land-rail	<i>Rallus crex</i>		Oct. 20
Quail	<i>Tetrao coturnix</i>	Aug. 20	
Fieldfare	<i>Turdus pilaris</i>	Nov. 21	April 10
Red-wing	<i>Turdus iliacus</i>	Nov. 10	Mar. 18
Woodcock	<i>Scolopax rusticola</i>	Oct. 20	April 1
Snipe	<i>Scolopax galinago</i>	Nov. 20	Mar. 20
Jack Snipe	<i>Scolopax gallinula</i>	Dec. 26	Mar. 16
Sea Lark	<i>Charadrius hiaticula</i>	April 1	
Greater Tern	<i>Sterna hirundo</i>	April 1	Oct. 8
Lesser Tern	<i>Sterna minuta</i>	May 20	Oct. 16
Royston Crow	<i>Corvus cornix</i>	May 22	Mar. 26

It appears from very accurate observations, founded on numerous experiments, that the peculiar notes, or *song*, of the different species of Birds, are altogether acquired, and are no more innate than language is in man. The attempt of a nestling bird to sing, may be compared with the imperfect endeavour of a child to talk. The first essay seems not to possess the slightest rudiments of the future song; but, as the bird grows older, and stronger, it is not difficult to perceive what it is aiming at. Whilst the scholar is thus endeavouring to form his song, when he is once sure of a passage, he commonly raises his tone, which he drops again when he is not equal to what he is attempting. What the nestling is thus not thoroughly master of, he hurries over; lowering his tone, as if he did not wish to be heard, and could not yet satisfy

himself.—A common Sparrow, taken from the nest when very young, and placed near a Linnet and Goldfinch, (though in a wild state it would only have chirped,) adopted a song that was a mixture of the notes of these two. Three nestling Linnets were educated, one under a Sky-lark, another under a Wood-lark, and the third under a Tit-lark; and, instead of the song peculiar to their own species, they adhered entirely to that of their respective instructors. A Linnet, taken from the nest when but two or three days old, and brought up in the house of Mr. Mathews, an apothecary, at Kensington, from want of other sounds to imitate, almost articulated the words "pretty boy;" as well as some other short sentences. Its owner said, that it had neither the note nor the call of any bird whatever. It died in the year 1772.

These, and other well-authenticated facts, prove that Birds have no innate notes, but that, like mankind, the language of those to whose care they are committed at birth will be the language they adopt in after life. It may, however, seem unaccountable, from these observations, why, in a wild state, they adhere so steadily to the song of their own species only, when so many others are to be heard around them. This evidently arises from the attention paid by the nestling bird to the instructions of its own parent only, generally disregarding the notes of all the rest. Persons, however, who have an accurate ear, and have studied the notes of different Birds, can very often distinguish some that have a song mixed with those of another species.

It may not be considered altogether uninteresting to be furnished with a table of the comparative merits of the singing-birds of our own island. In this, the number 20 is adopted as the point of perfection.

	<i>Mellow- ness of Tone.</i>	<i>Spright- liness.</i>	<i>Plain- tiveness.</i>	<i>Compass</i>	<i>Execution.</i>
Nightingale	19	14	19	19	19
Sky-lark	4	19	4	18	18
Wood-lark	18	4	17	12	8
Tit-lark	12	12	12	12	12
Linnæ	12	16	12	16	18
Goldfinch	4	19	4	12	12
Chaffinch	4	12	4	8	8
Greenfinch	4	4	4	4	6
Hedge-sparrow	6	0	6	4	4
Aberdavine, or Siskin ..	2	4	0	4	4
Red-poll	0	4	0	4	4
Thrush	4	4	4	4	4
Blackbird	4	4	0	2	2
Robin	6	16	12	12	12
Wren	0	12	0	4	4
Red-sparrow	0	4	0	2	2
Black-cap	14	12	12	14	14

The food of Birds is of course very different in the different kinds. Some are altogether carnivorous; others, as many of the web-footed tribes, live on fish; some on insects and worms, and many on fruits or grain.—The extraordinary powers of the gizzard in the granivorous tribes, in comminuting their hard food, so as to prepare it for digestion, would, were they not supported by incontrovertible facts founded on experiment, appear to exceed all credibility. In order to ascertain the strength of these stomachs, the Abbè Spallanzani made many cruel, though at the same time curious and not uninteresting experiments. Tin tubes full of grain were forced into the stomachs of Turkeys; and, after remaining twenty hours, were found to be broken, compressed, and distorted in the most irregular manner. The stomach of a Cock, in the space of twenty-four hours, broke off the angles of a piece of rough-jagged glass; and upon examining the gizzard no wound or laceration appeared. Twelve strong tin needles were firmly fixed in a ball of lead, with their points projecting about a quarter of an inch from the surface; thus armed, it was covered with a case of paper, and forced down the throat of a Turkey: the Bird retained it a day and a half, without exhibiting the least symptom of uneasiness: the points of all the needles were broken off

close to the surface of the ball, except two or three, of which the stumps projected a little. Twelve small lancets, very sharp both at the points and edges, were fixed in a similar ball of lead, which was given in the same manner to a Turkey-cock, and left eight hours in the stomach; at the expiration of which time that organ was opened, but nothing appeared except the naked ball; the twelve lancets having been broken to pieces—the stomach at the same time remaining perfectly sound and entire. From these facts it was concluded, that the stones so often found in the stomachs of many of the feathered tribes, are highly useful in assisting the gastric juices to grind down the grain and other hard substances which constitute their food. The stones themselves also, being ground down and separated by the powerful action of the gizzard, are mixed with the food, and no doubt contribute to the health as well as to the nutriment of the animals.

All Birds are oviparous, or produce eggs, from which, after the process of incubation, the young are extruded. These eggs differ in the different species, in number, figure, and colour. They contain the rudiments of the future young; for the maturation and bringing to perfection of which, in the incubation, there is a bubble of air at the large end, betwixt the shell and the inside skin. It is supposed that, from the warmth communicated by the sitting Bird to this confined air, its spring is increased beyond its natural tenor, and at the same time its parts are put into motion by the gentle rarefaction. Hence pressure and motion are communicated to the parts of the egg, which in some unknown manner gradually promote the formation and growth of the young till the appointed time of its exclusion. The use of that part of the egg called the treadle, is not only to retain the different liquids in their proper places, but also to keep the same part of the yolk uppermost; which it will effectually do, though the egg be turned nearly every way. The mechanism seems to be this: the treadle is specifically lighter than the white in which it swims; and, being connected with the membranes of the yolk at a point somewhat out of the direction of its axis, this causes one side to become heavier than the

other : thus the yolk, being made buoyant in the midst of the white, is, by its own heavy side, kept with the same part always uppermost.

The *nests* of Birds are, in general, constructed with astonishing art ; and with a degree of architectural skill and propriety, that would foil all the boasted talents of man to imitate.

Mark it well : within, without,
No tool had he that wrought ; no knife to cut,
No nail to fix, no bodkin to insert,
No glue to join ; his little beak was all.
And yet, how neatly finished ! What nice hand,
With ev'ry implement and means of art,
And twenty years' apprenticeship to boot,
Could make me such another ? Fondly then
We boast of excellence, whose noblest skill
Instinctive genius foils.

In most of the species both the male and female assist in this interesting operation. They each bring materials to the place : first sticks, moss, or straws, for the foundation and exterior ; then hair, wool, or the down of animals or plants, to form a soft and commodious bed for the eggs, and for the bodies of their tender young when hatched. The outsides of the nests bear in general so great a resemblance in colour to the surrounding foliage or branches, as not easily to be discovered even by persons who are in search of them.

The act of nidification is one of those wonderful contrivances of nature that would compel us, however we might otherwise be inclined to doubt it, to believe that we, and every other part of the creation, are constantly under the protection of a superintending Being, whose goodness knows no bounds. Without this, what can we suppose it is that instigates a creature that may never before have had young, to form a hollow nest to contain eggs (things that as yet it knows nothing of;) and to concentrate a proper proportion of heat for the incubation ? Without this, what can we suppose it is that dictates the necessity of forming the outside with coarse materials, as a foundation, and

of lining it within with more delicate substances? How do these animals learn that they are to have eggs, and that these eggs will require a nest of a certain size and capacity? Who is it that teaches them to calculate the time with such exactness, that they never lay their eggs before the receptacle for them is finished? No person can surely be so blind as to observe all this, and not be able to perceive the superintendence of a beneficent wisdom influencing every operation. If such be the case, he must have the powers of his understanding totally obliterated, and his mind enveloped in impenetrable darkness.

The *divisions* of this class of animals are principally founded in their habits of life; and in the particular resemblance of their external parts, particularly of their bills. The grand division is into LAND BIRDS and WATER BIRDS.

Land Birds.

1. *Rapacious Birds (accipitres)*, have their bill hooked, and on each side of the upper mandible there is an angular projection. The animals are all carnivorous, and consist of Vultures, Eagles or Hawks, and Owls. They associate in pairs, and the female is generally larger and stronger than the male.

2. *Pies (picæ)*. These have their bill sharp at the edge, compressed at the sides, and convex on the upper surface. The principal genera are the Shrikes, Crows, Rollers, Orioles, Grackles, Humming-birds, Parrots, Toucans, Cuckoos, Woodpeckers, Hornbills, and Kingfishers. Some of them associate in pairs, and others congregate. They live on various kinds of food; and usually build their nests in trees, the male feeding the female during the process of incubation.

3. *Passerine Birds (passeres)*, have a conical, sharp-pointed bill. To this order belong the Finches, Grosbeaks, Buntings, Thrushes, Fly-catchers, Swallows, Larks, Wagtails, Titmice, and Pigeons. While breeding they live mostly in pairs; and the nests of several of the species are of curious and singular construction. The greater part of them sing. Some live on seeds, and others on insects.

4. *Gallinaceous Birds* (*gallinæ*). The bills of these birds have the upper mandible considerably arched: they comprise the Pheasants, Turkeys, Peacocks, Bustards, Pintadoes, and Grouse. Nearly all these live principally on the ground; scratching the earth with their feet for the purpose of finding grain and seeds. They usually associate in families, consisting of one male and several females. Their nests are formed, with very little art, on the ground; and the females produce a numerous offspring.

Water Birds.

5. *Waders* (*grallæ*). These have a roundish bill, a fleshy tongue; and the legs of most of the species are long. The principal genera are the Herons, Plovers, Snipes, and Sandpipers, which live for the most part among marshes and fens; feeding on worms and other animal productions which they meet with there. They form nests on the ground.

6. *Swimmers* (*anseræ*). The bills of these are broad at the top, and covered with a membranaceous skin. The tribes best known are the Ducks, Auks, Penguins, Petrels, Pelicans, Guillemots, Gulls, and Terns. They live chiefly in the water, feeding on fish, worms, and aquatic plants. Most of the species are polygamous, and construct their nests among reeds or in moist places. The females lay many eggs.

AMPHIBIOUS ANIMALS.

Under this title, from the circumstance of their living occasionally both on land and in water, Linnæus has arranged the oviparous quadrupeds, usually denominated *Reptiles*, and the *Serpents*. It is true that it may be considered exceptionable on account of some individuals being confined to only one of those elements: these, however, are so few, as not, with any propriety, to affect their general denomination.

Towards these animals mankind have ever entertained a great degree of abhorrence, originating in a dread of their supposed

and in some instances their undoubted poisonous qualities, in the unpleasant sensation of touching perfectly cold animals, and in their often ugly and squalid forms. This abhorrence is so general, in all countries, and amongst all people, that, even where the species are in themselves innoxious and beautiful, it is not without much difficulty to be conquered. To the philosopher, however, the various tribes afford an inexhaustible fund of instruction and delight. The form, the destination, and importance of these animals in the grand scheme of nature, are truly admirable, and have been found amply to repay the care, the danger, and trouble of their investigation.

By far the greater part of the species live in retired, watery, and shady places, where they seem stationed to prevent the excessive multiplication of water animals and insects; and themselves, in many instances, to serve as food for fishes and birds. When they are able to obtain it, they generally devour a great quantity of food at a time, but this is digested slowly, and they are endowed with the power of sustaining abstinence that would infallibly prove fatal to any of the higher orders of animals. Several of the species have been known to exist, in apparent health and vivacity, for many months, without any food whatever. They are nearly all furnished with *teeth*, but these seem of little other use than in the retaining of their prey; for whatever they seize is swallowed whole, the throat and stomach being capable of great distention, sometimes even receiving animals of greater thickness than their own bodies in a natural state.

Their *respiration* is not, as in the higher animals, carried on at certain short and regular intervals. The Amphibia, from the peculiar structure of their organs of respiration, are able to suspend it almost at pleasure. It is in consequence of this that they are enabled to support their change of element without injury.

It has been generally said that the *hearts* of the amphibious tribes are furnished with only one ventricle. More accurate physiologists are, however, of opinion that we ought rather to say that they have two ventricles; with an immediate communi-

cation between them. The *blood* is red, but cold and in small quantity.

The bodies of some of these animals are protected by a hard horny shield or covering; and of others by a coriaceous integument. Some of them have scales; and others soft pustular warts or protuberances.—Their *bones* are more cartilaginous than those either of quadrupeds or birds.—Several of the species, as the Frogs and some of the Lizards, are altogether destitute of ribs.

The *eyes* of the amphibia are in general large and bright. The *ears* have neither external valve nor canal; the tympanum being level with the head, and in many of the animals covered with the skin or scales.

All the Amphibia are extremely tenacious of life, and some of them will continue to move and exert animal functions even destitute of their head or heart. Many of the species possess a high degree of reproductive power; and when their feet or tail are by accident destroyed, others will grow in their place.—Most of them exhale loathsome odours, owing probably to the foulness of their abode, or the substances on which they feed, or perhaps to the length of time occupied in digesting their food.

The young of all the tribes are produced from eggs, which, after the parent animals have deposited in a proper place, are hatched by the heat of the sun. Some of the species have their eggs covered with a hard, calcareous shell; whilst those of others have a soft, tough skin or covering, not much unlike wet parchment: the eggs of several are perfectly gelatinous. In those few that produce their offspring alive, the eggs are regularly formed, but are hatched within the bodies of the females: this is the case with the Vipers and some others of the Serpents.

In cold and temperate climates, nearly all the Amphibia pass the winter in a torpid state. During this season they are often found perfectly stiff, in holes under ice, or in water. They continue thus till revived by the returning warmth of spring. They then become reanimated, change their skin, and appear abroad in a new coat. Many of them cast their skins frequently in the

year; those Reptiles, however, that have an osseous covering, as the Tortoises, never change it.

The Amphibia, though they are sometimes found in great numbers together, cannot be said to congregate, since they do nothing in common, and in fact do not live in a state of society.—The flesh and eggs of some of the species constitute a palatable and nutritious food.

Of the Serpents. There is much geometrical elegance in the sinuous motions of the Serpent tribe. Their back-bone consists of moveable articulations, and runs through the whole length of their body. The breast and abdomen are surrounded with ribs. Some of the species can make their bodies stiff, and by this means are enabled to spring with great force and velocity on their prey.

The bodies of most of the Serpents are covered with scales; and Linnæus has endeavoured to mark the species by the number of scaly plates on the abdomen and beneath the tail. Experience, however, has proved, that these are too variable and uncertain to be depended on.

The head is connected to the trunk without the intervention of a neck. The jaws are so formed that the animals are able to swallow bodies as thick and frequently even thicker than themselves. The tongue is slender and cleft.

The *poisonous* Serpents, which are not more than one sixth of the whole number of species, differ from the others in having long tubular fangs on each side of the head, calculated to convey the venom from the bag or receptacle at the base into the wound made by their bite. The principal distinguishing rule in these tribes is, that the venomous Serpents have only two rows of true or proper teeth, (that is, such as are not fangs,) in the upper jaw, whilst all others have four. A head entirely covered with small scales is also in some degree a character, but by no means an universal one, of poisonous species; as are also scales on the head and body furnished with a ridge or prominent middle line.

The *Amphibia* are divided by Linnæus into two orders; *viz.* Reptiles and Serpents.

The *Reptiles* are furnished with legs. They have flat, naked ears, without auricles. The principal tribes are, the Tortoises, Lizards, and Frogs.

Serpents are destitute of feet. Their jaws are dilatable and not articulated; and they have neither fins nor ears.

FISHES.

Were we acquainted with no other animals than those which inhabit the land, and breathe the air of our atmosphere, it would appear absurd to be told that any race of beings could exist only in the waters; we should naturally conclude, from the effect produced on our own bodies when plunged into that element, that the powers of life could not there be sustained. But we find from experience that the very depths of the ocean are crowded with inhabitants, which, in their construction, modes of life, and general design, are as truly wonderful as those of the land. Their history, however, must always remain very imperfect, since the element in which they live is beyond human access, and of such vast dimensions as to throw by far the greater part of them altogether out of the reach of man.

That they are in every respect, both of exterior and interior conformation, well adapted to their element and modes of life, we are not permitted to doubt. The body is in general slender, flattened on the sides, and always somewhat pointed at the head. This enables them with great ease to cut through the resisting medium which they inhabit. Some of them are endowed with such extraordinary powers of progressive motion, that they are able not only to overtake the fastest sailing vessels, but, during their swiftest course, to play round them without any apparently extraordinary efforts.

Their bodies are in general covered with a kind of horny scales, to keep them from being injured by the pressure of the water. Several are enveloped with a fat and oily substance, to

preserve them from putrefaction, and to guard them from extreme cold.

They *breathe* by means of those organs placed on each side of the neck, called gills. In doing this they fill their mouth with water, then throw it backwards with so much force as to lift open the great flap, and force it out behind. And in the passage of this, among the feather-like processes of the gills, all, or at least the greatest part, of the air, contained in it, is left behind, and carried into the body to perform its part in the animal economy. In proof of this fact, it has been ascertained that, if the air is by any means extracted from the water into which fish are put, they immediately come to the surface and gasp for air.—Distilled water is to fish what the vacuum formed by an air-pump is to most other animals.—This is the reason why in winter, when a fish-pond is entirely frozen over, it is necessary to break holes in the ice, not that the fish may come to feed, but that they may come to breathe. Without this precaution, if the pond is small, and they are numerous, they will die from the corruption of the water.

Fishes are nearly of the same specific gravity with water, and *swim* by means of their fins and tail. The muscular force of the latter is very great. Their direct motion is obtained by moving the tail from one side to the other, with a vibrating motion; and by strongly bending the tail sideways, it acts like the rudder of a ship, and enables them to move in an opposite direction. The fins of a fish keep it upright, especially the belly fins, which act like feet; without these they would swim with the belly upwards, as the centre of gravity lies near the back.

In addition to the fins and tail, the *air-bladder* is of material assistance to the fish in swimming, as it is by means of this that they increase or diminish the specific gravity of their bodies. When, by their abdominal muscles, they press the air contained in it, the bulk of their body is diminished, their weight, compared with that of the water, is increased, and they consequently sink. If they want to rise, they relax the pressure of the muscles, the air-bladder again acquires its natural size, the body is rendered more bulky, and they ascend towards the surface.

This bladder lies in the abdomen, along the course of the back-bone: in some fish it is single, and in others double. The air appears to be conveyed into it from the blood, by means of vessels appropriated to the purpose, and it can be discharged thence either into the stomach or the mouth.—Those fish that are without air-bladders have much less facility in elevating themselves in the water. The greater part of them remain at the bottom, unless the form of their body enables them to strike the water downwards with great force. This the *Rays* do with their large pectoral fins, which are sometimes, and not improperly, called wings, since the means which these fishes use in elevating themselves are precisely the same as those employed by birds in flying. When the bladder of a fish is burst, it is never afterwards able to rise.

The *teeth* of fishes are usually situated in their jaws: sometimes, however, they are found on the tongue or palate, and even in the throat. They are generally sharp-pointed and immoveable; but in the *Carp* they are obtuse, and in the *Pike* so moveable as to appear fixed only to the skin.—The *tongue* is in general motionless, obtuse, and fleshy; and in the *Herring*, and some other species, is set with teeth, to enable them the better to retain their food.—Being furnished with *nostrils* and olfactory nerves, there can be little doubt but that fishes possess the sense of smelling.

The *bones* of these animals are formed of a kind of intermediate substance, between true bones and cartilages. The back-bone extends through the whole length of the body, and consists of *vertebræ*, strong and thick towards the head, but weaker and more slender as they approach the tail. The ribs are attached to the processes of the *vertebræ*, and enclose the breast and abdomen. Several fish, as the *Rays*, have no ribs; and others, as the *Eel* and *Sturgeon*, have very short ones. Between the pointed processes of the *vertebræ* lie the bones that support the anal and dorsal fins, which are connected with the processes by a ligament. At the breast lie the sternum, the clavicles, and the scapulæ, on which the pectoral fins are placed; the bones that support the ventral fins are called the *ossa pelvis*. Besides these

there are, in some species, other, small bones, between the muscles to assist their motion.

The *sight* of fishes is perhaps the most perfect of all their senses. The eye, in the greater part of them, is covered with the same transparent skin that covers the rest of the head; the use of which is, probably, to defend this organ in the water, since there are no eyelids. The globe of the eye is somewhat depressed in front, and it is furnished behind with a muscle, which serves to lengthen or flatten it, according to the animal's necessities. The crystalline humour, which in quadrupeds is flattened, is in fishes nearly globular. The eyes are usually thought to be immoveable, but this does not appear to be the case, because the eyes of at least some species are known to turn in the sockets.

In fishes the *organ of hearing* is placed on the sides of the skull, or the cavity that contains the brain; but, differing in this respect from that in quadrupeds and birds, it is entirely distinct and detached from the skull. In some fishes, as those of the Ray kind, the organ of hearing is wholly surrounded by the parts containing the cavity of the skull: in others, as the Salmon and Cod, it is in part within the skull. In structure it is by no means so complicated as in the quadrupeds and other animals that live in the air. Some genera, as the Rays, have the external orifice very small, and placed on the upper surface of the head; but in others there is no external opening whatever.

The *food* of these animals is extremely various. Insects, worms, or the spawn of other fish, sustain the smaller tribes; which, in their turn, are pursued by larger foes. Some feed on mud and aquatic plants, but by far the greater part subsist on animal food alone; and they are so ravenous as often not to spare even those of their own kind. Innumerable shoals of some species pursue those of another through vast tracts of the ocean; from the vicinity of the pole sometimes even to the equator. In these conflicts, and in this scene of universal rapine, many species must have become extinct, had not the Creator accurately proportioned their means of escape, their

production, and their numbers, to the extent and variety of the dangers to which they are exposed. The smaller species are consequently not only more numerous and prolific than the larger, but their instinct impels them to seek food and protection near the shore, where, from the shallowness of the water, many of their foes are unable to pursue them.

Fishes are in general oviparous: some few, however, as the Eel, and one of the species of Blenny, produce their young alive. The males have the *milt*, and the females the *roe*, but some individuals of the Cod and Sturgeon tribes are said to contain both. The spawn of the greater number is deposited in the sand or gravel: many of the fish, however, which reside in the ocean, attach their ova to sea-weeds. The fecundity of these tribes far surpasses that of any other race of animals. In the spawn of a single Cod upwards of nine millions of eggs have been ascertained, and nearly a million and a half have been taken from the belly of a Flounder.

The *longevity* of fish is far superior to that of other creatures; and there is reason to suppose that they are, in a great measure, exempted from diseases. Instead of suffering from the rigidity of age, which is the cause of natural decay in land animals, their bodies continue increasing with fresh supplies; and, as the body grows, the conduits of life furnish their stores in greater abundance. How long they continue to live has not yet been ascertained. The age of man seems not equal to the life of the most minute species. In the royal ponds at Marli, in France, there are some fishes that have been preserved tame since the time, it is said, of Francis the First, and which have been individually known to the persons who have succeeded to the charge of them ever since that period.

The Rev. Mr. White, of Selborne, observed the mode in which fishes die. As soon as a fish sickens, the head sinks lower and lower, and the animal stands, as it were, upon it; till, becoming weaker, and losing all poise, the tail turns over, and at last it swims on the surface of the water with its belly upwards.

Fish, like the land animals, are either solitary or gregarious.

Some, as Trout, Salmon, &c. migrate to considerable distances in order to deposit their spawn. Of the sea-fish, the Cod, the Herring, and many others, assemble in immense shoals, and migrate in these shoals through vast tracts of the ocean.

In the Gmelinian edition of the *Systema Naturæ*, the Fishes are divided into six orders :

1. *Apodal* ; with bony gills, and no ventral fins.
2. *Jugular* ; with bony gills, and ventral fins before the pectoral ones.
3. *Thoracic* ; with bony gills, and ventral fins placed directly under the thorax.
4. *Abdominal* ; with bony gills, and ventral fins placed behind the thorax.
5. *Branchiostegous* ; with gills destitute of bony rays.
6. *Chondropterygious* ; with cartilaginous gills.

INSECTS.

The Insect division of the animal world received its name from the individuals of which it is composed having a separation in the middle of their bodies, by which they are cut, as it were, into two parts. These parts are in general connected by a slender ligament or hollow thread.

Insects *breathe* through pores arranged along their sides* ; and have a head or bony skin, and many feet. The greater part of them are furnished with wings. They are destitute of brain, nostrils, and eyelids. Not only the place of the liver, but of all the secretory glands, is, in them, supplied by long vessels that float in the abdomen. The mouth is in general situated under the head ; and is furnished with transverse jaws, with lips, a kind of teeth, a tongue, and palate : it has also, in most instances, four or six palpi, or feelers. Insects have also moveable

* The Crab and Lobster tribes form an exception to this rule, for they respire by means of gills.

antennæ, proceeding generally from the front part of the head, which are endowed with a very nice sense of feeling.

In a minute examination that has been lately made in this class by Cuvier, one of the most accurate observers of nature now living, neither a heart nor arteries have been detected; and this gentleman says that the whole organization of insects is such as one would expect to find, if they had been actually known not to be provided with such organs. Their nutrition, therefore, would seem to be carried on by immediate absorption, as is evidently the case with the polypes, and other zoophytes*.

Nearly all insects (except Spiders, and a few others of the apterous tribe, which proceed nearly in a perfect state from the egg) undergo a METAMORPHOSIS, or change, at three different periods of their existence.

The lives of these minute creatures, in their perfect state, are in general so short that the parents have seldom an opportunity of seeing their living offspring. Consequently, they are neither provided with milk, like viviparous animals, nor are they, like birds, impelled to sit upon their eggs in order to bring their young to perfection. In place of these, the all-directing Power has endowed each species with the astonishing faculty of being able to discover what substance is fitted to afford the food proper for its young; though such food is, for the most part, so totally different from that which the parent itself could eat, that, in many cases, it would prove a deadly poison to it. Some of them attach their eggs to the bark, or insert them into the leaves of trees and other vegetable substances; others form nests, which they store with insects or caterpillars that will attain the exact state in which they are proper food for their young, when they shall awaken into life; others bury their eggs in the bodies of other insects; and others, again, adopt very surprising methods of conveying them into the body, and even into the internal viscera of larger animals. Some drop their eggs into the water, an

* He excepts the Crabs and Lobsters, which he arranges in a class by themselves, and denominates Crustaceous animals.

element in which they would themselves soon be destroyed. In short, the variety of contrivances that are adopted by insects to insure the subsistence of their young, are beyond enumeration.

From the eggs of all insects proceed what are called *larvæ*, grubs, or caterpillars. These consist of a long body, covered with a soft, tender skin, divided into segments or rings. The motions of many of the *larvæ* are performed on these rings only, either in the manner of serpents, or by resting alternately each segment of the body on the plane which supports it. Such is the motion of the *larvæ* of the Flies, emphatically so called, and of the Wasps and Bees. Sometimes the surfaces of the rings are covered with spines, stiff bristles, or hooks: this is the case in Gad-flies, Crane-flies, and some others. The bodies of the *larvæ*, in some orders of insects, have, towards the head, six feet, each formed of three small joints; the last of which is scaly, and terminates in a hook: this is usual in those of Beetles and Dragon-flies. The *larvæ* of Butterflies and Moths, besides six scaly articulated feet, have a variable number of other false feet, which are not jointed, but terminate in hooks disposed in circles and semicircles. These hooks, which are attached to the skin by a kind of retractile tubercles, serve as cramps to assist their motion on other bodies. The *larvæ* of such insects as undergo only a semi-metamorphosis, as the Crickets, Cock-roaches, and others of the order Hemiptera, and those of the insects that have no transformation, as in the Aptera, (the Flea excepted,) differ in nothing, with respect to their feet, from the perfect insects.—In this larva state many insects remain for months, others for a year, and some even for two or three years. They are, in general, extremely voracious, oftentimes devouring more than their own weight in the course of twenty-four hours.

As soon as all their parts become perfected, and they are prepared to appear under a new form, in a pupa or *chrysalis**, they fix upon some convenient place, where they are least

* The *chrysalis* is occasionally called *Aurelia*, *Bean*, *Cod*, *Cope de Nymphe*.

exposed to danger, for the performance of the arduous operation. This is essentially necessary, since, in their transformation, they have neither strength to resist, nor swiftness to avoid, the attack of an enemy. That power, which instructed the parents to deposit their eggs in a proper receptacle, at this critical period directs the offspring in the most secure and appropriate situation for their future defenceless state. Some of them spin webs or cones, in which they enclose themselves; others undergo their change in decayed wood; and others conceal themselves under the surface of the earth.—Preparatory to the transformation, the larvæ cease to take any food, and, for some days, continue in a state of inactivity. During this time the internal organs are gradually unfolding themselves. When the completion is at hand, many of them may be observed alternately to extend and contract their bodies, in order to disengage themselves from the caterpillar skin. The hinder parts are those first liberated: when this is done, the animals contract, and draw the skin up towards their head; and, by strong efforts, soon afterwards push it entirely off. In their chrysalid state they remain for some time, to all appearance, perfectly inanimate; but this is only in appearance, for, on being taken into the hand, they will always be found to exhibit signs of life. It is singular that, in the changes of insects, the intestinal canal is frequently very different in the same individuals, as they pass through the three states.

As soon as the parts of the animal, within the shell of the chrysalis, have acquired strength sufficient to break the bonds that surround it, the little creature exerts its powers, and appears to the world in its *perfect* state. For a little while it continues humid and weak; but, as the humidity evaporates, its wings and shell become hardened, and it soon afterwards commits itself in safety to its new element.

Some writers have conjectured that the *antennæ* or horns of insects were their organs of hearing; for it is evident, from various experiments, that insects are possessed of this sense in a degree as exquisite as most other animals, although, from their

minuteness, we perhaps may never discover by what means. The antennæ, however, seem little likely to answer the purpose of ears. These instruments, of apparently exquisite sensibility, appear adapted to very different purposes, but to purposes with which we may remain long unacquainted.

The *eyes* are formed of a transparent crustaceous set of lenses, so hard as to require no coverings to protect them. These, like multiplying glasses, have innumerable surfaces, on every one of which the objects are distinctly formed; so that, if a candle is held opposite to them, it appears multiplied almost to infinity on their surfaces. Other creatures are obliged to turn their eyes; but insects have always some or other of these lenses directed towards objects, from what quarter soever they present themselves. All these minute hemispheres are real eyes, through which every thing appears topsyturvy.

Mr. Leeuwenhoek looked through the eye of a Dragon-fly (with the help of a microscope) as a telescope, and viewed the steeple of a church, which was 299 feet high, and 750 from the place; he could plainly see the steeple, though not apparently larger than the point of a fine needle. He also viewed a house; and could discern the front, distinguish the doors and windows, and perceive whether the windows were open or shut. Mr. Hook computed that there were 14,000 of these lenses in the two eyes of a Drone; and Mr. Leeuwenhoek reckons 12,544 lenses in each eye of the Dragon-fly. The pictures of objects, therefore, that are delineated on these, must be millions of times less than those formed on the human eye. Many insects still smaller have eyes, no doubt contrived so as to discern objects some thousands of times less than themselves; for such the minute particles on which they feed must certainly be.

With respect to the *wings* of insects, those of the two first orders of Linnæus have theirs defended by a pair of crustaceous cases called elytra. The three subsequent orders have four membranaceous wings, without elytra. All the insects of the sixth order have but two wings, and under each of these, at its base, there is a poise or balancer like a little knob. These poises are commonly little balls, placed on the top of a slender

stalk, and moveable every way at pleasure. In some they stand alone, but in others, as in the whole *Flesh-fly* tribe, they have little covers or hollow membranaceous scales, each of which somewhat resembles a spoon without a handle: every time the insect strikes the air with its wings, a very quick motion may be perceived in the balancer; and in the *Flesh-flies*, when this moves, it strikes against the little scale, and thus assists in producing the well-known buzzing sound that is made by flies when on the wing. The use of the balancer to an insect seems to be precisely the same as that of a long pole, loaded at each end with lead, is to a rope-dancer: they render the body steady, and obviate all its vacillations in flight.

The structure of the *feet* of these diminutive creatures is truly admirable. Those insects that live altogether in water have their feet long, flat, and somewhat hairy at the edges, well adapted to aid their motions in that element. Such as have occasion to burrow into the earth have their legs broad, sharp-edged, and serrated. Those that use their feet only in walking have them long, and cylindrical; some of the feet are furnished with sharp, hooked claws, and skinny palms, by which, from the pressure of the atmosphere upon them, the insects are enabled to walk on glass and other smooth surfaces, even with their backs downwards, as in various species of flies: others have somewhat like sponges that answer the same end: and the spider has each foot armed with a kind of comb, probably for the purpose of separating the six threads that issue from so many orifices of its body, and preventing them from tangling. In the hind legs of insects which have occasionally to pass over spaces by leaping, the thigh is peculiarly large and thick.

The *tongue* of insects is a taper and compact instrument, by which they suck their food. Some of the animals can contract or expand it; and others, as the *Butterflies*, roll it up under their head, somewhat like the spring of a watch. In many it is enclosed within a sheath; and in several, as the *Flies*, it is fleshy and tubular.

The *mouth* is generally placed somewhat underneath the

front part of the head; but in a few of the tribes is situated below the breast. Some insects have it furnished with a kind of forceps, for the purpose of seizing and cutting their prey; and in others it is pointed, to pierce animal or vegetable substances, and suck their juices. In several it is strongly ridged with jaws and teeth, to gnaw and scrape their food, carry burthens, perforate the earth, nay, the hardest wood, and even stones, for habitations and nests for their young. In a few the tongue is so short as to appear to us incapable of answering the purpose for which it is formed; and the Gad-flies appear to have no mouth.

Near the mouth are situated the *palpi*, or *feelers*: these are generally four, but sometimes six in number. They are a kind of thread-shaped articulated antennæ. Their situation, under and at the sides of the mouth, renders them, however, sufficiently distinct from the proper antennæ. They are in continual motion, in consequence of the little animals thrusting them into every thing likely to afford them food. Some writers have considered them as serving the place of a hand, in holding food to the mouth, whilst the insects are eating.

Linnaeus has divided the animals of this class into seven orders*, viz

1. *Coleopterous insects* (derived from the Greek words *κολαρος* a sheath, and *πτερον* a wing, are the *Beetles*, or such as have crustaceous elytra or shells, which shut together, and form a longitudinal suture down the back. Of this order are the *Chafer* tribe, and several others.

2. *Hemipterous insects* (from *ἡμισυ* half, and *πτερον* a wing, have their upper wings half crustaceous, and half membranaceous, not divided by a longitudinal suture, but incumbent on or crossed over each other; as the *Cock-roach*, *Locust*, &c.

3. *Lepidopterous insects* (from *λεπιδ* a scale, and *πτερον* a

* Coleoptera, Hemiptera, Lepidoptera, Neuroptera, Hymenoptera, Diptera, and Aptera.

wing), are those having four wings covered with fine scales apparently like powder or meal; as the Butterflies and Moths.

4. *Neuropterous insects* (from *νευρον* a nerve, and *πτερον* a wing,) have four membranaceous, transparent, naked wings, in which the membranes cross each other so as to appear like network. The tail has no sting, but is frequently furnished with appendices like pincers, by which the males are distinguished. The common Dragon-fly is the best example that can be brought to illustrate this order; and the genus *Phryganea* forms an exception with respect to the net-work appearance of the wings.

5. *Hymenopterous insects* (from *εμην* a membrane, and *πτερον* a wing.) The insects belonging to this order have generally four membranaceous naked wings: the neuters, however, in some of the genera, and in others the males or females, want wings. The wings do not so much resemble net-work as those of the last order. The tail, except in the male, is armed with a sting. The Bee, the Wasp, and the Ant, are of this tribe.

6. *Dipterous insects* (from *διπλος* double, and *πτερον* a wing,) are those having only two wings, each furnished at its base with a poise or balancer. The common House-flies and the Gnat are familiar examples of this order.

7. *Apterous insects* (from *α* without, and *πτερον* a wing.) This order contains all such insects as want wings in both sexes; as the Spider, Flea, and Louse.

WORMS.

Nearly all the species of this, the lowest class of animal being, have slow locomotive powers. Their bodies are soft, fleshy, and destitute of articulated members: some of them have hard internal parts, and others have crustaceous coverings. Many of them have arterial and venous vessels, in which the blood undergoes a real circulation; but these are by no means common to the whole class. In some of them eyes and ears are very perceptible, while others seem to enjoy only the senses of taste and touch, which

are never wanting. Many have no distinct head, and most of them are without feet. The whole of these creatures are very tenacious of life. In most of them, parts that have been destroyed will afterward be reproduced.

They are divided into five orders :

1. *Intestinal Worms**: These are simple, naked animals, without limbs, that live some of them within other animals, some in water, and a few in earth. The *Ascarides*, *Tape-worms*, *Leeches*, and *Common Worms*, are illustrations of this order.

2. *Molluscous Worms*. These are simple animals without shells, and furnished with tentacula or arms: most of them are inhabitants of the sea, and many possess a phosphorescent quality. The *Sea Anemones*, *Cuttle-fish*, *Medusæ*, *Star-fish*, and *Sea-urchins*, belong to the *Molluscæ*.

3. *Testaceous Worms*: are *Molluscæ* covered with calcareous shells, which they carry about with them; as the *Muscles*, *Cockles*, *Oysters*, *Snails*, &c.

4. *Zoophytes*: appear to hold a rank between animals and vegetables, most of them taking root and growing up into stems and branches. Some of them are soft and naked, and others are covered with a large shell.

5. *Animalcules*: are extremely minute, destitute of tentacula or feelers, and generally invisible to the naked eye. They are chiefly found in infusions of animal and vegetable substances of various kinds.

Each moss,
Each shell, each crawling insect, holds a rank
Important in the plan of Him who fram'd
This scale of beings; holds a rank, which lost
Would break the chain, and leave a gap
That Nature's self would rue!

* *Intestina*, *Mollusca*, *Testacea*, *Zoophyta*, and *Infusoria*, of *Linnaeus*.

1981-1982

MAMMIFEROUS ANIMALS.

Primates*.

OF APES IN GENERAL.

INDEPENDENTLY of the general form of these animals, and of their external and internal organization, which in many respects present a striking and humiliating resemblance to those of men, their playfulness, their gesticulations and grimace, have in all ages attracted the notice of mankind. Some naturalists have asserted, that they are capable of reasoning and reflection, and that they are guided by instincts much superior to those of the brute creation in general. This, however, is certainly not the case; for they are known to be inferior in sagacity to numerous other quadrupeds.

Their limbs are peculiarly strong; and in all their operations and manœuvres the agility of these animals is most astonishing. They have great delight in breaking, tearing in pieces, or stealing whatever lies in their way. If any thing irritates or offends them, they indicate their rage by

* This is the first of the Linnæan orders of quadrupeds. The animals have four parallel front or cutting teeth in each jaw; except in some species of Bats, which have either two only or none. They have one canine-tooth on each side in both jaws. The females have two pectoral mammæ or breasts. The two fore-feet resemble hands, having fingers, for the most part, furnished with flattened oval nails.

chattering violently with their teeth. Many of the species, when beaten, will sigh, groan, and weep, like children; but most of them, on these occasions, utter dreadful shrieks of distress. They, however, frequently make such ridiculous grimaces, place themselves in such strange and whimsical attitudes, and in other respects conduct themselves so singularly, that even the most serious persons must sometimes be amused with them.

This extensive tribe is usually divided into three sections, Apes, Baboons, and Monkies.

Apes are destitute of tails; they walk upright, their posteriors are fleshy, their legs are furnished with calves; and their hands and feet nearly resemble those of men. In their manners they are, for the most part, mild and gentle, and they imitate human actions more readily, and are susceptible of greater attainments, than any of the others. *Baboons* have short tails; they generally walk on all fours, seldom going upright, except when constrained so to do in a state of servitude. Some of them are as tall as men, have long faces, sunken eyes, and are otherwise extremely disgusting. In their dispositions they are usually so sullen and ferocious as to be incapable of any education whatever. *Monkies* have tails in general longer than their bodies. They are by far the most lively and active of the whole race. They are greatly addicted to thieving, and scarcely ever imitate human actions without a mischievous intention. One division of the Monkies, which are denominated by the French writers *Sapajous*, have their long tails so formed that they can coil them round any object, so as to answer nearly all the purposes of an additional hand. By means of these they are able even to swing themselves backward and forward amongst the branches of trees. The animals of this division are inhabitants almost exclusively of the New Continent.

With respect to their enemies, the Monkies have not, like

most other animals which inhabit the torrid climates, to dread the Lion, the Tiger, or any of the feline race. Their dominion in the forests is not disputed by any of the beasts of prey, from whose attack they easily escape, by their agility in climbing the trees. It is the Serpent tribe alone which they fear. These creatures, which reside with them in the trees, are endowed with the art of surprising them during their repose; and perpetual war is sustained betwixt the two races. Conscious, however, of their own activity and safety when awake, Labat says, he has seen in Africa, Monkies playing their gambols, on the very branches where Snakes were reposing; and jumping over them backward and forward, although these Serpents are naturally vindictive, and always ready to bite any creature that disturbs them.

Monkies usually live in much more extensive troops than Apes. Some naturalists have been credulous enough to believe that they form a sort of republic, in which a great degree of subordination is kept up; that they always travel in good order, conducted by chiefs, the strongest and most experienced animals of their troop; and that, on these occasions, some of the largest Monkies are likewise placed in the rear, the sound of whose voice immediately silences that of any of the others which happen to be too noisy. The orderly and expert retreat of these creatures from danger, is an amusing sight to Europeans, unaccustomed to the native manners of such animals. The negroes believe them to be a vagabond race of men, who are too indolent to construct habitations or to cultivate the ground. They sometimes commit dreadful havoc in the fields and gardens of persons who dwell in the countries where they abound.

The dexterity of Monkies is such, that, although burthened by their offspring clinging to their backs, they can leap from one tree to another, if the distance be not very

great, and secure their hold among the branches with the greatest certainty. When they perceive any person taking aim at them, either with a gun or bow, they cry out and grind their teeth, sometimes in the most horrible manner. When any one of their community is shot, and falls to the ground, all the rest set up a dismal and tremendous howl, which makes the adjacent mountains and woods resound. If a Monkey is wounded, and does not fall, it frequently happens that his companions will seize and carry him off far beyond the reach of their enemy: and miserable is the fate of that hunter who is imprudent enough to venture near their haunts during the same day. When the animals re-ascend the trees, they each carry a stone in their hand, and generally another in their mouth; and, in such case, these are thrown at their adversary with a correctness of aim that is truly astonishing.

In many parts of India, Apes and Monkeys are made objects of worship by the natives, and temples of the greatest magnificence are erected in honour of them. Their numbers are almost infinite. They frequently come in troops into the cities, and they enter the houses at all times with perfect freedom. In Calicut, however, the inhabitants keep them in a great measure out of their dwellings; but to effect this they are compelled to have all their windows latticed. In Amadabad, the capital of Guzerat, there are three hospitals for animals, where lame and sick Monkeys, and even those which (without being diseased) choose to dwell there, are fed and cherished. Twice every week the Monkeys of the neighbourhood assemble spontaneously in the streets of the city. They then mount upon the houses, each of which has a small terrace or a flat roof, where they lie during the great heats. On these two days the inhabitants always carefully deposit on the terraces rice, millet, or fruit; for whenever, by any accident, they are prevented from doing it, the disappointed animals become

so furious, that they break the tiles, and commit various other outrages.

1. Apes.

THE ORAN OTAN*, AND CHIMPANZEE†.

In its native state the Oran Otan is an inhabitant of Borneo, of some parts of China, the East Indies, and Africa; and the Chimpanzee, of Angola, Sierra Leona, and a few parts of Asia. Both the species are exceedingly wild, and are found only in the most retired places. They feed on fruit, vegetables, and roots of various kinds; and, according to the account of some travellers, those which inhabit forests adjacent to the sea-shore live occasionally on Crabs and shell-fish. Their resting places are in trees, where they are perfectly secure from the attack of all predacious creatures except Serpents.

* DESCRIPTION. This animal, when full grown, is from five to six feet in height. Its colour is a ferruginous or reddish brown; and the hair of the fore-arm is reversed. The face is naked, and bears some resemblance to that of a man; but the facial angle is considerably more acute, and consequently the forehead is much more oblique than in any human subject. The chin has also no elevation whatever.

SYNONYMS. *Simia Satyrus*. *Linnaeus*.—Great Ape. *Penn.*—Man of the Woods. *Edwards*.—Le Jocko. *Buffon*. *Audebert*.—Jocko, in Congo.—Sinsin, in China.—Oran Otan, in the Indian Islands: this name signifies Wild Man.

† DESCRIPTION. The difference betwixt the Chimpanzee and Oran Otan is chiefly in size and colour. The Chimpanzee seldom measures more than from two feet and a half to three feet in height; and its hair is dark brown or blackish.

SYNONYMS. *Simia Troglodytes*. *Linn.*—Le Pongo. *Buffon*. *Audebert*.—Baris, in Guinea.—Chimpanzee or Quimpezee, by the English who frequent the coast of Angola.

We are assured by Andrew Battel, a Portuguese traveller, who resided in Angola nearly eighteen years, that these animals were very common in the woods of that country, where they sometimes attained a gigantic stature. Their bodies, he informs us, were covered, but not very thickly, with a dun-coloured hair; and their legs were without calves. They always walked upright, and generally, when on the ground, carried their hands clasped on the hinder part of their neck. They slept in the trees, amongst which they built a kind of houses to shelter themselves from the weather. Their food was fruit and nuts, and in no instance were they known to be carnivorous. The inhabitants of the country, when they travel in the woods, make fires around the places where they sleep, to keep at a distance the various species of voracious animals; to these fires the Oran Otans would assemble in the mornings, sitting by them till the last of the embers were expired. He describes them as being so powerful that ten men would not have strength enough to hold one of them; and says that, consequently, the inhabitants are never able to catch the old ones alive. He states, what few persons perhaps will be inclined to believe, that when any of them die, the rest cover up the bodies with great branches of trees; and that these heaps are frequently to be found in the forests*.

Among the woods on the banks of the river Gambia, the Oran Otans collect in herds of three or four thousand, marching in a rank, the larger ones acting as leaders. In these troops they are excessively impudent and mischievous. Jobson, who gives the account, says, that whenever his party, in sailing along the river, passed their stations, they mounted the trees and gazed upon the men; sometimes they would shake the trees with their hands, which they did with

* Battel was in Angola in 1589.

fast force, at the same time chattering and making a loud noise. At night when the party were at anchor, the animals often took their stations on the rocks and heights above. When the men were on shore and met any of them, the great ones generally came forward and seemed to grin in their faces; but they always fled when an attack was made. One of them was killed from the boat with a gun, but before the boat could be got ashore the others had carried it off. Their habitations were found in some of the woods, composed of plants and the branches of trees, so thickly interwoven as to protect them from the heat of the sun. The ground was beaten perfectly smooth, few plants growing in their paths or dwellings.

The Oran Otans are not, like many of their tribe, a lively and frolicsome race; but, in all their actions, are remarkably deliberate and sedate. They are, notwithstanding, so extremely swift of foot that it is oftentimes very difficult to overtake them. M. Le Compte informs us that, in the Island of Borneo, they are hunted by persons of quality, somewhat in the same manner as Stags are in Europe; and, in his time, this species of hunting was a favourite diversion of the king.

These animals are represented to be, in their wild state, extremely savage and ferocious. If a Negro be unfortunate enough to wander in the woods, and be discovered by them, they generally attack and kill him. They are able even to drive off the Elephant; with a piece of wood in their hands, or only with their fists, they will so tease the huge beast, that in the end he is induced to retire. They have been known to throw stones at those who have offended them. Bosman informs us, that behind the English fort at Wimba, on the coast of Guinea, several of these Apes fell upon two of the company's slaves, overpowered them, and were about to poke out their eyes with sticks, when a party of Negroes happened to come up at a fortunate moment to

their rescue. It is stated that they sometimes steal the Negresses, and carry them off into the woods.

During the breeding season the males are said to relinquish their habitations to the females and their offspring. As soon as the young ones have attained a sufficient degree of strength to venture abroad, they hang on the belly of the dam, with their arms fast clasped about her. And it is believed that, whenever the females are killed, these will always suffer themselves to be taken.

Gemelli Carreri relates a circumstance concerning these animals, which, if we could for a moment believe it correct, would induce us to suppose that they were by no means destitute of reason. He tells us, that when the fruits on the mountains are exhausted, they will frequently descend to the sea-coasts, where they feed on various species of shell-fish, but in particular on a large species of oyster, which commonly lies open on the shore. "Fearful (he says) of putting in their paws, lest the oyster should close and crush them, they insert a stone within the shell: this prevents it from closing, and they then drag out their prey and devour it at leisure."

This is all the information that I have been able to collect respecting the Oran Otan and Champanzee in their wild state. The following are accounts of them in a state of captivity and domestication.

Neither of these animals have been often conveyed alive into Europe. A Chimpanzee was exhibited in London in the year 1698, and another in 1738; and, in the course of last century, three or four have, at different times, been brought into France. There was a pair of these animals in the Leverian Museum; but they were so young when they died, as to afford a very imperfect representation of the species.

The manners both of the Oran Otan and Chimpanzee, when in confinement, are gentle, and, for the most part, harmless, perfectly devoid of that disgusting ferocity so conspicuous in some of the larger Baboons and Monkeys. They are mild and docile animals, and may be taught to perform, with dexterity, a variety of entertaining actions.

The Chimpanzee that was brought into England in the year 1698, had been caught in Angola, and far up the country. It was a male, and, at the time it was taken, had a female in company. It was soon rendered tame, and became the most gentle creature imaginable. Those persons that he knew on board the vessel which brought him over, he would embrace with the greatest tenderness. And although there were several Monkeys in the ship, yet he would on no occasion associate with them. In many of his actions this animal displayed a considerable degree of sagacity. A suit of clothes was made for him, in the wearing of which, after a little while, he took great delight. Such part of this dress as the animal could not put on by himself, he would bring in his paws to some one of the ship's company for assistance. He would lie down at night in a bed; place his head on the pillow, and pull up the bed-clothes, in order to keep himself warm, precisely in the same manner as a human being. This animal died a short time after he came to London, and was afterwards purchased for dissection, by Dr. Tyson.

A female Oran Otan was brought alive into Holland from the island of Borneo, in the year 1776, and lodged in the menagerie of the Prince of Orange. She was extremely gentle, and exhibited no symptoms whatever of fierceness or malignity. She had a somewhat melancholy appearance, yet loved to be in company, and particularly with those persons to whose care she was committed. Oftentimes, when they retired, she would throw herself on the

ground, as if in despair, uttering the most doleful cries, and tearing in pieces any article of linen that happened to be within her reach. Her keeper having sometimes sat near her on the ground, she would frequently take the hay of her bed, arrange it by her side, and, with the greatest anxiety and affection, invite him to sit down.

This animal most commonly walked on all fours, like other apes; but she could also walk erect. In an erect posture, however, her feet were not usually extended like those of a man, but the toes were curved beneath, in such manner that she rested chiefly on the exterior sides of the feet.

One morning she contrived to escape from her chain, and was seen to ascend, with wonderful agility, the beams and oblique rafters of the building. With some trouble she was retaken, and a very extraordinary muscular power was on this occasion remarked in the animal. The efforts of four men were found necessary in order to secure her. Two of these seized her by the legs, and a third by the head, whilst the other fastened the collar round her body. During the time she was at liberty she had, amongst other pranks, taken the cork from a bottle of Malaga wine: she drank the wine to the last drop, and then set the bottle again in its place.

She would eat of almost every kind of food that was given to her; but she lived chiefly on bread, roots, and fruit. Carrots and strawberries she was peculiarly fond of, as well as of several kinds of aromatic plants, and of the leaves and root of parsley. She also ate meat, both boiled and roasted, as well as fish; and was fond of eggs, the shells of which she broke with her teeth, and then emptied, by sucking out the contents. When strawberries were given to her on a plate, it was pleasant to see her take them up, one by one, with a fork, and put them into her mouth, holding, at the same time, the plate in the other hand. Her

usual drink was water, but she also would drink, very eagerly, all sorts of wine, and particularly Malaga. After drinking, she wiped her lips; and after eating, if presented with a tooth-pick, would use it in a proper manner. Whilst she was on ship-board she ran freely about the vessel, played with the sailors, and would go, like them, into the kitchen for her mess. When at the approach of night she was about to lie down, she would prepare the bed on which she slept, by shaking well the hay, and putting it in proper order; and, lastly, would cover herself up warm with the quilt. One day, seeing the padlock of her chain opened with a key, and shut again, she seized a little bit of stick, and put it into the key-hole, turning it about in all directions, endeavouring to see whether the padlock would not open.

On the first arrival of this animal in Holland, she was so young as to be only two feet and a half high, and had but little hair on any parts of the body except the back and arms; but, at the approach of winter, she became thickly covered, and the hair on the back was at least six inches in length. The whole animal was then of a chesnut colour, except the skin of the face and paws, which was somewhat of a reddish mouse colour. After having been seven months in Holland she died; and her skin was deposited in the Museum of the Prince of Orange*.

This animal was seen and described by M. de Buffon. He informs us that she always walked upright, even when carrying things of great weight; that her air was melancholy, her gait grave, her movements measured, and, in every respect of disposition, very different from other

* Description de l'espèce de Singe, aussi singulier que très-rare, nommé *Orang-outang*, de l'île de Bornéo. Par *Feuilles de Vosmaër*, Amsterdam, 1778.

apes. She would present her hand to conduct the people who came to visit her, and walk as gravely along with them as if she had formed a part of the company. She would frequently sit with persons at dinner, on which occasions she would unfold her towel, wipe her lips, use a spoon or a fork to carry the provisions to her mouth, pour her liquor into a glass, and make it touch that of a person who drank along with her. If invited to take tea, she would bring a cup and saucer, place them on the table, put in sugar, pour out the tea, and allow it to cool before she drank it. All these actions she performed without any other instigation than the signs or verbal orders of her master, and often even of her own accord.

She exhibited, says Professor Allamand, who likewise described her, no symptoms whatever of ill-nature, and would voluntarily hold out her paw to any person who was inclined to shake hands with her. The food she was chiefly fond of was bread, fruit, carrots, and other roots; and these she would eat without that appearance of voracity which is common to most of the animals of her tribe. She would eat meat that was cooked, but she was not fond of raw flesh. She would take in one hand a vessel containing water, and, carrying it to her mouth, in the same manner as a child or a man, would tranquilly drink the contents.

Her motions were slow and languid, and she indicated at no time any great degree of vivacity; but in general seemed to be somewhat melancholy. She would frequently play with the blanket, which served her for a bed; and sometimes seemed pleased at tearing it. The usual attitude of this animal was a sitting posture, with her knees and thighs elevated: and even when she walked, it was somewhat in the same posture, with her haunches but little raised from the ground. M. Allemand informs us, that she was seldom seen to stand perfectly upright, except when she wanted to seize something that she could not otherwise reach. From

these circumstances, he was induced to believe, that Oran Otans, in a wild state, do not, like men, walk in an upright posture; but that, in the manner of other quadrupeds, they go on all fours. He considers that the hand-like conformation of their fore-feet, is given to them for the purpose of enabling them to climb. This animal would often amuse herself in the room, where she was kept, by climbing upon the bars of the windows, as high as the length of her chain would allow.

Of an Oran Otan which M. le Compte saw in the Straits of Malacca, he says, that all its actions were so imitative of those of mankind, and its passions were so expressive and lively, that a dumb person could scarcely have rendered himself better understood. This animal was very gentle, and exhibited great affection towards all from whom it received any attentions. One thing was very remarkable, that, like a child, it would frequently make a stamping noise with its feet, from joy or anger, when it had received or was refused any kind of food to which it was partial.

Its agility was almost incredible. With the greatest ease and security it would run about amongst the rigging of the vessel, vaulting about from rope to rope, and playing a thousand pranks, as if it were delighted by exhibiting its feats for the diversion of the company. Sometimes, suspended by one arm, it would poise itself, and then suddenly turn round upon a rope, with nearly as much quickness as a wheel or a sling. Sometimes it would slide down one of the ropes, and would again ascend with astonishing agility. There was no posture which this animal could not imitate, nor any motion that it could not perform. It has even sometimes been known to fling itself downwards from one rope to another, though at a distance of more than thirty feet.

We are told by Pyrard, that these animals are found in Sierra Leona, where they are strong and well formed, and

so industrious that, when properly trained and fed, they work like servants! He says that, when ordered, they will pound any substance in a mortar; and that they are frequently sent to fetch water from the rivers in small pitchers, which they carry full on their heads; but when they arrive at the door of the dwelling, if they are not soon taken off, they suffer them to fall, and when they perceive the pitcher overturned and broken, they utter aloud their lamentations! Barbot also informs us, that they are frequently rendered of use in the settlements on the coast of Guinea, by being taught to turn the spit, and watch the roasting of meat, which they perform with considerable dexterity and address.

M. de la Brosse, who purchased from a Negro two Oran Otans, remarks that they would sit at table like men, and eat there every kind of food without distinction. That they would use a knife, fork, or spoon, to cut or lay hold of what was put on their plate; that they drank wine and other liquors. At table, when they wanted any thing, they easily made themselves understood to the cabin-boy; and when the boy refused to answer their demands, they sometimes became enraged, seized him by the arm, bit, and threw him down. The male was seized with sickness, and he made the people attend him as if he had been a human being. He was even bled twice in the right arm, and, whenever afterwards he found himself in the same condition, he held out his arm to be bled, as if he knew that he had formerly received benefit from that operation.

Two Champanzees were sent from the forests of the Carnatic, by a coasting vessel, as a present to the governor of Bombay. They, like the rest of the species, had many human actions, and seemed, by their melancholy, to have a rational sense of their captivity. They were scarcely two feet high, but walked erect, and had very nearly the human form. The female was taken ill during the voyage,

and died; and the male, exhibiting every demonstration of grief, refused to eat, and lived only two days afterwards.

When he was at Java, M. Le Guat saw a tall female Ape, which, no doubt, belonged to the present species. Her face had, he says, a distant resemblance to some of the grotesque female faces which he had seen among the Hottentots at the Cape of Good Hope. She made her bed very neatly every day, lay upon her side, and covered herself with the clothes. She would often bind up her head with a handkerchief, and it was amusing to see her thus hooded in bed. It was intended to bring her into Europe for the purpose of exhibition, but she died on board the ship in the latitude of the Cape.

In the year 1759, M. Pallavicini, who held an official situation at Batavia, had in his house two Oran Otans, a male and a female, which were extremely mild and gentle. They were nearly of human stature, and they imitated very closely the actions of men, particularly with their hands and arms. In some respects they appeared to have a degree of bashfulness and modesty, which is not observable even in savage tribes of the human race; but this, most probably, was a trick that they had been taught. If, for instance, the female was attentively looked at by any person, she would throw herself into the arms of the male, and hide her face in his bosom. Their voice was a kind of cry, resembling that of most other Apes and Monkies.

An individual of the Oran Otan species, or a variety nearly allied to it, was caught when young in the interior of Guinea, and carried from thence to Surinam. Allemand, the Dutch Professor of Natural History, had received many vague and unsatisfactory particulars respecting this animal. These were, however, on the whole, so interesting, that he was induced to write to M. May, a Captain in the Dutch naval service, stationed at Surinam, for the purpose of

obtaining an authentic account of it. M. May informed him, that, when he was on the coast of Guinea, with his vessel, one of the sailors brought on board a small tail-less Ape, about six months old, which had been caught in the kingdom of Benin. He soon afterwards sailed for Surinam; and this animal arrived in perfect health at Paramaribo, where the Oran Otan above-mentioned was then living.

He was greatly surprised to find that the two animals were of the same kind, and that there was no other difference betwixt them than that of size. This, however, was considerable, the Oran Otan being about five feet and a half in height, whilst his animal scarcely exceeded the height of twelve or fourteen inches.

The old Oran Otan could walk equally well on four and on two feet; it was very strong and powerful. M. May says, that he has seen it take its master (a stout man) by the middle of the body, raise him with the greatest ease from the ground, and then throw him to the distance of a pace or two. M. May was assured, that this animal one day seized a soldier, who happened carelessly to pass near the tree to which it was chained, and, if its master had not been present, would have actually carried the man into the tree.

At the time when M. May first saw the animal, it had been in Surinam twenty-one years, and yet it did not appear to have attained its full growth. In confirmation of this, he was informed, that in the preceding year, it had increased considerably in height.

The Captain of an English vessel offered the owner one hundred guineas for it. This sum, great as it was, he refused; and two days afterwards the animal died.

Père Carbasson brought up an Oran Otan, which became so fond of him, that, wherever he went, it always seemed desirous of accompanying him: whenever, therefore, he had to perform the service of his church, he was

under the necessity of shutting it up in a room. Once, however, the animal escaped, and followed the father to the church; where, silently mounting the sounding-board above the pulpit, he lay perfectly still till the sermon commenced. He then crept to the edge, and, overlooking the preacher, imitated all his gestures in so grotesque a manner, that the whole congregation were unavoidably urged to laugh. The father, surprised and confounded at this ill-timed levity, severely rebuked his audience for their inattention. The reproof failed in its effect; the congregation still laughed, and the preacher, in the warmth of his zeal, redoubled his vociferations and his actions: these the Ape imitated so exactly, that the congregation could no longer restrain themselves, but burst out into a loud and continued laughter. A friend of the preacher at length stepped up to him, and pointed out the cause of this improper conduct; and such was the arch demeanour of his animal, that it was with the utmost difficulty he could command the muscles of his countenance, and keep himself apparently serious, while he ordered the servants of the church to take him away.

THE BARBARY APE*.

The forests of various parts of India, Arabia, and Africa, abound in animals of this species; and they are so com-

* DESCRIPTION. The face of this Ape is shaped somewhat like that of a Dog. The cheeks are furnished with pouches. The height, when the animal stands upright, is usually betwixt three and four feet. The colour of the back is a greenish brown, and, of the belly, pale yellow.

SYNONYMS. *Simia inuus*. Linn.—Le Magot. Buffon. Audebert.—Möneret. Johnston.—Yellow Ape. Du Halde.—Barbary Ape. Pennant. Shaw.—Shaw's Gen. Zool. Pl. 7.

mon in Barbary, that the trees are sometimes nearly covered with them. A few are found about the rock of Gibraltar, to which, no doubt, they were originally brought from the opposite shores of Africa.

They subsist on vegetables and fruit; and in their manners are equally fierce and mischievous. We are informed that they assemble at times in the open plains of India, in vast troops, and that if they see any of the women going to market, they immediately attack them, and take away their provisions. Tavernier, apparently alluding to this species, says, that some of the inhabitants of India have an odd mode of amusing themselves at their expence. These people place five or six baskets of rice, forty or fifty yards asunder, in an open ground near their retreat, and by every basket put a number of stout cudgels, each about two feet long: they then retire to some hiding-place, not far distant, to wait the event. When the Apes observe no person near the baskets, they soon descend in great numbers from the trees, and run towards them. They grin at each other for some time before they dare approach; sometimes they advance, then retreat, seeming much disinclined to encounter. At length the females, which are more courageous than the males, especially those that have young ones (which they carry in their arms as women do their children,) venture to approach the baskets, and as they are about to thrust their heads in to eat, the males on the one side advance to hinder them. Immediately the other party comes forward; and the feud being kindled on both sides, the combatants seize the cudgels and commence a most severe fight, which always ends with the weakest being driven into the woods. The victors, he tells us, then fall-to in peace, and devour the reward of their labour.

He also informs us, that as he was himself travelling in the East Indies, in company with the English president, several large Apes were observed upon the trees around

them. The president was so much amused, that he ordered his carriage to stop, and desired Tavernier to shoot one of them. The attendants, who were principally natives, and well acquainted with the manners of these animals, begged him to desist, lest those that escaped might do them some injury in revenge for the death of a companion. Being, however, still requested, he killed a female, which fell among the branches, letting her little ones, that clung to her neck, fall to the ground. In an instant all the remaining Apes, to the number of sixty or upwards, descended in fury, and, as many as could, leaped upon the president's coach, where they would soon have strangled him, had not the blinds been immediately closed, and the number of attendants so great as, though not without difficulty, to drive them off. They however continued to run after the servants for at least three miles from the place where their companion was slain.

This species of Ape agrees well with our climate, and is very common in exhibitions in this country. It walks on four in preference to two legs; and uses the same grimaces to express both anger and appetite. Its movements are brisk, its manners gross; and, when agitated by passion, it exhibits and grinds its teeth. Notwithstanding its ferocious and unaccommodating disposition, it is, by perseverance and force of discipline, generally taught to perform a few tricks, and to show off, in some mode or other, to the spectators. Some of them will learn to dance, make gesticulations in cadence, and allow themselves peaceably to be clothed.

M. de Buffon had a Barbary Ape several years. In summer, he says, it delighted to be in the open air; and even in winter, it was frequently kept in a room without fire. Though long in confinement, it did not become at all civilized. When food was given to it, it always filled its

pouches; and, when about to sleep, loved to perch on an iron or wooden bar.

THE PIGMY APE*.

According to the account given by M. Desfontaines, these Apes live in great troops; and at Sara, in ancient Numidia, are numerous beyond description. Their food consists chiefly of pine-apples, nuts, Indian figs, melons, and various kinds of roots and vegetables. Like many others of their tribe, they oftentimes go in a body to attack gardens or plantations which happen to be in their neighbourhood, and, notwithstanding all the care that is taken to prevent their depredations, they are frequently successful. Previously to the commencement of their plundering, they always send one of the party to the top of some adjacent rock or tree, to give notice to the rest of any appearance of interruption. This animal remains on watch during the whole business; and, if he perceive any person approach, or hear any alarming noise, he gives a loud shriek, on which the whole troop immediately run off, and climb the trees, carrying away with them whatever they may happen

* DESCRIPTION. The Pigmy Ape, when on its hinder legs, is about two feet high. Its face is almost naked of hair, and is somewhat long and wrinkled; which gives to the animal, however young it may be, the appearance of old age. The canine-teeth are short, and, as well as the ears, very much resemble those of men. The eyes are round, reddish, and have great vivacity. The posteriors are naked and callous; and, in place of a tail, there is a small prominent piece of skin, of five or six lines in length. The general colours of the body are olive-brown above, and yellowish on the belly; and, in many individuals, part of the breast and belly have a large dark-coloured mark.

SYNONYMS. *Simia sylvanus*. Linn.—Pitheque. Buffon.—Pigmy Ape. Pennant.—Shaw's Gen. Zool. Pl. 8.

to have seized. If the alarm continue, and the country is pretty well wooded, they pursue their route, leaping from tree to tree, all the way to the mountains. In this procedure the females are often burthened by their young-ones clinging round their necks and backs; and yet, in spite of such an incumbrance, they are able to leap to a vast distance. The injury that these animals do to the fruits and corn is incalculable. They gather them into heaps, tear and throw them on the ground in such quantities, that what they eat or carry off is generally trifling compared with the whole quantity which they destroy.

The females seldom produce more than one young-one at a birth. This, almost as soon as it comes into the world, clings to the back of its dam, and so closely embraces her neck with its arms, as not to be shaken off by any of her usual exertions. The Pigmy Apes have not hitherto been known to breed in a domestic state, even when kept in large enclosed court yards, and in their native country.

The natural disposition of these creatures is in general so mild, that in most cases they are to be tamed without much difficulty. In their general manners they are gay and frolicsome, and always chatter when they are pleased; but when irritated they use threatening gestures, and will generally bite with great fury in self-defence. They are fearful animals, recollect the persons of those who injure them for a great length of time; and, when these appear, they always seek to avoid them. To those, on the contrary, from whom they are accustomed to receive attentions, they will become greatly attached, exhibit strong proofs of fidelity, and will even follow them about from place to place without attempting to escape. When these Apes are, by any accident, alarmed, their fear is always plainly depicted in their countenance, which changes colour somewhat like that of man. They are in general a very dirty and filthy species, and leave an unpleasant

smell wherever they go. With the most mischievous propensity, they are inclined to break and destroy nearly every thing that lies in their way; and they are only to be restrained from this by occasionally severe chastisement. They use both their hands and feet with singular address in laying hold of objects. M. Desfontaines informs us that he has often seen them throw off, with the greatest ease, chains by which they appeared to be strongly secured.

In the supplementary volumes of M. de Buffon, we are informed that this writer kept a male Pigmy Ape for more than a year. He says that its usual mode of walking was on four feet; and that it could seldom be induced to walk upright for more than a few minutes at a time. It was an active animal, and generally in motion. Its greatest delight seemed to be in leaping, climbing, and catching at every thing within its reach. Whenever it was left alone it exhibited symptoms of discontent, by exerting a kind of mournful cry. In its disposition it was so mild, that it was rarely known to bite with severity any one who teased or offended it.

The Pigmy Apes are said for the most part to sleep in caverns in the woods; and the natives of the country which they inhabit sometimes adopt a singular mode of taking them, for the purpose of fattening them as food. They place, near the haunts, vessels containing strong liquors; and the animals, assembling to enjoy the unexpected repast, become intoxicated, fall asleep together, and in this predicament are easily secured.

2. *Baboons.*

THE COMMON OR MOTTLED BABOON *.

The disposition of this Baboon is exceedingly ferocious, and its appearance is at once both grotesque and formidable. When confined in a cage these animals will sometimes lay hold of the bars, and shake them so powerfully as to make all the spectators tremble; and, in their native forests, they are oftentimes dangerous enemies.

In Siam they frequently sally forth in astonishing multitudes to attack the villages, during the time the labourers are occupied in the rice harvest, and plunder the habitations of whatever provisions they can lay their paws on. Fruits, corn, and roots, form their principal food; and in obtaining these they often commit the most violent outrages. Their great strength, and the sharpness of their claws, render them formidable to dogs, who always overcome them with difficulty, except when excess in eating has rendered them, as it sometimes does, heavy and inactive.

In a wild state one of these Baboons can easily overpower two or three men, if they happen to be unprovided with weapons of defence.

* DESCRIPTION. This animal, which is found in the hottest parts of Africa, is frequently three or four feet in height, and in its upper parts excessively strong and muscular. Towards the middle of the body it is, like all the Baboons, very slender. Its general colour is a greyish brown; and the face, which is long, is of a tawny flesh colour. It has pouches in its cheeks. The tail is very short; and round its base, to a considerable distance, the posteriors are perfectly bare, and callous. *Shaw.*

SYNONYMS. *Simia Sphinx.* *Linnaeus.*—Mottled Baboon. *Penant.*—Le Papion. *Buffon.* *Audebert.*—Common Baboon. *Shaw.*—Baboon. *Betwick.*—*Shaw's Gen. Zool. Pl. 16.*—*Bew. Quad. p. 254.*

The females seldom bring forth more than one young-one each, which they carry between their arms; and they have not been known to produce in any other than hot climates.

In confinement, these animals are always savage and ill-natured, frequently grinding their teeth, fretting and chafing with the utmost fury. One that was exhibited at Edinburgh in 1779, presented uniformly to the spectators the most threatening aspect, and attempted to seize every person who came within the reach of his chain: on such occasions he usually made a deep grunting noise, and tossed up his head almost perpetually. So fond are these Baboons of eggs, that one of them has been known to put eight into his cheek-pouches at once; and then taking them out one by one, to break them at the end and deliberately swallow their contents. They may be induced to eat meat, but not unless it is cooked: they are particularly partial to wine and spirits. One that Mr. Pennant saw at Chester was of most tremendous strength, and excessively fierce. Its voice was a kind of roar, not unlike that of a Lion, except that it was low and somewhat inward. It went on all fours, and never stood on its hind legs, unless compelled to do so by the keeper; but would frequently sit on its rump, in a crouching manner, and drop its arms across before its belly. It was an animal of great beauty, and appears to have been the same that Mr. Smellie saw at Edinburgh. Mr. Pennant says it was particularly fond of cheese; and that, whenever ears of wheat were given it, it dexterously picked out the grains, one by one, with its teeth, and ate them.

The capricious disposition of this Baboon often leads it to the most deliberate acts of mischief. Dr. Goldsmith says he has seen one of them break a whole service of china, evidently by design, yet without appearing in the least conscious of having done amiss,

THE MANDRILL*.

It is difficult to figure to the mind an animal more disgusting in its manners, or more hideous in its appearance, than the Mandrill. Under its projecting forehead are two small and vivid eyes, situated so near to each other that their position alone gives to the physiognomy an air of ferocity. An enormous muzzle, indicative of the most brutal passions, terminates in a broad and rounded extremity of a fiery red colour, from which continually oozes a mucous humour. The cheeks, greatly swollen, and deeply furrowed, are naked, and of a violet-blue colour. A narrow, blood-coloured ridge extends down the middle of the face, and terminates in the nose. The canine-teeth are sharp and extremely large. The tail is short; and the posteriors are naked and red, with shades of blackish and blue.

Never did the disposition of an animal answer more correctly to its physiognomy, than that of the Mandrill. None of the various means which have been adopted to

* DESCRIPTION. In height this animal, when standing upright, measures from three feet and a half to four and a half or five feet. The face is naked; and the cheeks are of a violet blue colour, and have several oblique furrows. The whole nose is of a deep red. The skin round the eyes is violet; and the irides are hazel. The hair round the neck is very long. The hair of the sides of the head joins that at the top, and the whole terminates in a somewhat pointed form. The beard is yellowish. Each hair of the body is annulated with black and yellow, which gives to the whole fur a greenish brown appearance. This animal has pouches in its cheeks.

SYNONYMS. *Simia Mormon*. *Simia Maimon*. *Linnaeus*.—*Le Mandril*. *Le Choras*. *Buffon*.—*Le Mandrill*. *Geoffrey*. *Audebert*. *Latreille*.—*Mantegar*. *Phil. Tran*.—*Great Baboon*. *Rib-nosed Baboon*. *Pennant*.—*Variegated Baboon*. *Maimon*. *Shaw*.—*Bew. Quad.* p. 456.

subdue the ferocity of other beasts, have succeeded with this. Endowed, likewise, with a muscular power and strength incomparably beyond those of man, the keepers of wild animals are always in dread of it. Its whole appearance, its gestures, and its cries are horrid; in short, it affords to us a striking emblem of vice in its greatest deformity.

But the Mandrill has not, in every part of its age, this excess of brutality. Until it has attained that period of its growth when the canine-teeth are first developed, which usually takes place about the age of two years, its face is black, and it has then much of the gentleness of other young animals. After this time, but more particularly after its subsequent change of them, the hair becomes long and wiry, the cheeks assume their livid colour, the body gradually takes its muscular form, and the ferocious passions are also developed.

It has been said that the voice of the Mandrill resembles the slight roaring of a Lion. Its cry is *aou, aou*, pronounced from the throat. These animals will live on fruit, carrots, and bread; and they eat to the amount of two or three pounds weight per day. They will likewise eat meat that has been cooked, but they always refuse such as is raw. When nuts are given to them, they crush them between their teeth, and swallow indiscriminately both the shells and kernels. They are fond of fermented liquors, and particularly of wine and spirits.

Mandrills are found, in a wild state, on the whole of the Gold Coast, and in several other parts of Africa. Some of them are said also to be natives of the East Indies, and of the Islands of the Indian Archipelago.

THE DOG-FACED BABOON*.

These animals usually associate in vast companies. When travellers pass near their haunts, they are impudent enough to run into the nearest trees, and shake the boughs with great vehemence, at the same time chattering very loudly. They are so powerful, as, without any difficulty, to overcome a man; and they frequently commit such depredations in cultivated grounds, that the proprietors are compelled to have armed men continually on the watch to prevent them from plundering.

Amongst the mountains in the neighbourhood of the Cape of Good Hope there are immense troops of these Baboons, or of a variety very nearly allied to them†. When any person approaches their haunts, they set up an universal and horrible cry for a minute or two, and then conceal themselves in their fastnesses, and keep a profound silence. They seldom descend to the plains, except for the purpose of plundering the gardens that lie near the foot of the mountains. While they are engaged in this, they are careful to place sentinels to prevent being surprised. They break the fruit in pieces, and cram it into their cheek-

* DESCRIPTION. They are betwixt four and five feet high. Their head and face greatly resemble those of a dog. The hair is of a dusky colour, and peculiarly long and shaggy as far as the waist, but short on the hinder parts. The face is naked; and the ears are pointed and concealed in the fur.

The Dog-faced Baboons are natives of various parts of Africa and Asia.

SYNONYMS. *Simia hamadryas*. *Linnaeus*.—Le Tartarin. *Brisson*.—Le Babouin a museau de Chien. *Buffon*.—Dog-faced Baboon. *Pennant*. *Shaw*.—*Shaw's Gen. Zool. Pl.* 15.—*Bewick's Quad.* p. 460.

† The *Ursine Baboon*. *Penn. Quad.* i. 181.

pouches, in order, afterwards, to eat it at leisure. The sentinel, if he sees a man, gives a loud yell, which lasts for about a minute; and the whole troop retreats with the utmost expedition, and in a most diverting manner, the young-ones jumping on and clinging to the backs of their parents. They feed also on several kinds of bulbous plants, which they dig up and peel with great address. Heaps of the parings of these may frequently be seen left behind them.

When they discover any single person resting and regaling himself in the fields, if great care is not taken, they will cunningly steal up behind, snatch away whatever they can lay hold of, then running to a little distance, will turn round, seat themselves on their posteriors, and, with the most arch grimaces imaginable, devour it before the man's face. They frequently hold it out in their paws, as if to offer it back again, and then use such ridiculous gestures, that, although the poor fellow loses his dinner, he seldom can refrain from laughing.

They are indeed so numerous among the mountains, as, at times, to render it exceedingly dangerous for travellers to pass them. They sit undismayed on the tops of the rocks, and not only roll but even throw from thence stones of immense size. A gun, in these cases, is generally of indispensable use, in driving them to such a distance that the stones they throw may do no material injury. In their flight, even with their cubs on their backs, they often make most astonishing leaps up perpendicular rocks. And their agility is so great as to render them very difficult to be killed, even with fire-arms.

Lade has very accurately described their manners. "We traversed a great mountain in the neighbourhood of the Cape of Good Hope, and amused ourselves with hunting large Apes, which are very numerous in that place. I can neither describe all the arts practised by these animals, nor

the nimbleness and impudence with which they returned, after being pursued by us. Sometimes they allowed us to approach so near, that I was almost certain of seizing them. But when I made the attempt, they sprung, at a single leap, ten paces from me, and mounted trees with equal agility, from whence they looked at us with great indifference, and seemed to derive pleasure from our astonishment. Some of them were so large, that, if our interpreter had not assured us they were neither ferocious nor dangerous, our number would not have appeared to be sufficient to protect us from their attacks. As it could serve no purpose to kill them, we did not use our guns. But the captain levelled his piece at a very large one that rested on the top of a tree, after having fatigued us a long time in pursuing him: this kind of menace, of which the animal, perhaps, recollected his having sometimes seen the consequences, terrified him to such a degree that he fell down motionless at our feet, and we had no difficulty in seizing him. But, when he recovered from his stupor, it required all our dexterity and efforts to keep him. We tied his paws together; but he bit so furiously, that we were under the necessity of binding our handkerchiefs over his head.

In confinement these Baboons may be rendered docile; yet they always retain the disposition to revenge an injury. At the Cape they are often taken young, and brought up with milk; and Kolben tells us, that they will become as watchful over their master's property as the most valuable house-dog in Europe. Many of the Hottentots believe they can speak, but that they avoid it lest they should be enslaved, and compelled to work. Though not naturally carnivorous, they will eat either meat or fish that is cooked. They are generally kept fastened, by means of a chain, to a pole; and their agility in climbing, leaping, and dodging any one that offers to strike them, is almost

incredible. Though one of these animals was thus tied up, it was impossible, at the distance of a few yards, to hit him with a stone. He would either catch it, like a ball, in his paw, or he would avoid its blow with the most astonishing agility.

These Baboons are sometimes hunted with dogs; but it is found necessary to have a considerable number in the chase. A single dog is by no means sufficient; for if the Baboon can but once lay hold of a dog by the hind legs, he will swing him round till he is perfectly giddy. With their immense teeth they also bite very violently, and by means of them are able to defend themselves with the utmost obstinacy. When enraged by any person, in a state of domestication, they generally attempt to lay hold of the ears; and they will sometimes bite one of them off as close as if it had been cut with a razor.

This seems to have been the kind of Ape that M. le Vaillant had long with him in his travels through the southern parts of Africa, to which he gave the name of *Kees*. It was of infinite use to his people, being a more watchful servant than any of his dogs, and frequently warning him of the approach of predacious animals, when the dogs seemed unconscious that such were near. Its numerous whimsical pranks and actions are related in both M. le Vaillant's works at considerable length.

3. *Monkies.*

THE EGRET MONKEY*.

In the forests of South Africa, India, and Java, these Monkies have been frequently seen by travellers gambolling on the trees with great liveliness and activity: amongst the branches of these they keep up an incessant noise during the night. They often assemble in troops for the purpose of plundering the plantations. When they have entered a field of millet, they load themselves with it, by taking in their mouths and in each paw as much as they can carry, and putting a quantity of it under their arms. Thus laden they return to their retreats, leaping all the way on their hind feet. If they are so unfortunate as to be pursued, they do not, in their alarm, let the whole fall, in order to run off: they drop the stalks which they held in their hands, and under their arms, that they may run on their four feet, which they do with more speed than on two; but still carefully retain what they carried in their mouth. They examine with the most scrupulous accuracy every stalk they pull, and those they find not perfectly suited to their purpose they throw on the ground, and tear up others instead. By this delicacy of choice they often-

* DESCRIPTION. This species is about two feet in height. It is somewhat of the colour of a wolf; and the feet are black. The head is large and excessively ugly. The nose is depressed, the cheeks are wrinkled, the eyebrows prominent and bristly, and the lip cleft with a double fissure. On the top of the head there is a pointed tuft of hair.

SYNONYMS. *Simia Aygula*. *Linnaeus*—*L'Aigrette*. *Buffon*. *Audubert*.—*Egret Monkey*. *Pennant*. *Shaw*.

times do infinitely more damage than even by what they take away*.

Few animals are more dirty, ugly, or loathsome than the present. When awake they frequently grind their teeth, and knit their brows; and during these and their various other grimaces, they are scarcely to be viewed without disgust and horror. Yet if taken young, and reared with attention, they will become exceedingly mild and tractable. M. Audebert informs us that he has seen a female of this species kept in a menagerie, which exhibited symptoms of the sincerest affection towards a small Magot (perhaps Pigmy Ape) that was confined in the same cage. The Egret was attentive to its wants, caressed, and frequently held it to her bosom in her folded arms. This sight was rendered more interesting to the spectators, from the proprietor of the menagerie declaring that the Egret was a female Magot, which had produced this young one in her cage.

THE CHINESE MONKEY†.

If we may believe the accounts which various travellers have given of the parts of the East Indies, and the Indian Islands, which are inhabited by these Monkies, the proprietors of corn-fields and of sugar-plantations, are frequently injured to a great extent by their predatory

* This account has been applied by some naturalists only to the present species; but Bosman, who is their principal authority, makes it common to most of the Monkies that are found on the coast of Guinea.

† DESCRIPTION. This Monkey has its name from the singular disposition of the hair on the top of its head, which is parted in the middle, lying smooth over each side, and spreading in a circular direction, so as in some measure to resemble a Chinese cap. It is

incursions. In their depredations in the sugar-grounds, one of the number is always placed as a centinel, on some adjacent tree, whilst the rest load themselves with plunder. If any person approaches he screams loudly, *houp, houp, houp*, to his companions, each of which, seizing as many canes as he can grasp in his right arm, instantly runs off on three legs. If closely pursued they throw away their prize, and endeavour to save themselves by scrambling up the trees.

When corn, fruits, and succulent plants fail, they eat insects; and they sometimes descend to the margins of rivers, and to the sea-coast, in order to catch fish and crabs. They are said to put their tail betwixt the pincers of the crab, and, when these are closed, to carry it quickly off, and eat it at leisure. They also gather cocoa-nuts, and are well acquainted with the method of extracting the juice for drink, and the kernel for food. Indeed the natives of India often catch them by means of a cocoa-nut with a hole in it. This is laid near their haunts, and some one of them takes it up, and with difficulty thrusts his paw into the hole in order to get at the kernel; the people who are on watch immediately run up, and seize the animal before he can disengage himself.

These Monkies, like most others of their tribe, are wonderfully active. They leap, with great agility, from tree to tree; and even the females, although loaded with their young ones, are able to leap nearly as well as the rest. We are informed by Pryard, that in Calicut they were for-

about the size of a Cat, has a long tail, and is of a pale yellowish brown colour.

SYNONYMS. *Simia Sinica*. *Linnaeus*—*Le Bonnet Chinois*. *Buffon*. *Audebert*.—Chinese Monkey. *Pennant*. *Shaw*.—*Shaw's Gen. Zoot.* Pl. 20, from *Buffon*.

merly so numerous, and so impudent, that the inhabitants of the villages and fields were under the necessity of having trellises to their windows, in order to prevent them from entering into and plundering their houses.

THE STRIATED MONKEY *.

In a native state these very beautiful little creatures, like most others of their tribe, live in society, on trees, the females carrying their young ones firmly clinging to their backs. They are found in the woods and forests of South America, where they are believed to subsist chiefly on fruits and vegetables: those, however, which have been kept in a state of captivity have been known to feed on fish, insects, and worms. One that was brought to England in an East India ship would eat nuts, but could not be prevailed with to touch ripe fruits. This creature was peculiarly fond of the smaller kinds of spiders and their eggs; but he uniformly refused the larger ones, as well as the large blue-bottle flies, though he frequently ate those of the common species.

Mrs. Kennon, formerly midwife to the Royal Family, had a Striated Monkey. It ate of many different kinds of

* DESCRIPTION. This animal is, in size, no larger than a Squirrel. The tail is long, very thickly covered with fur, and beautifully marked, through its whole length, with alternate rings of black and white. The body is of a reddish ash-colour, slightly undulated with dusky shades. The face is of a dark flesh-colour, having on each side a very large and thick tuft of milk-white hair, standing out before the ears. The paws, which are covered with hair, have sharp nails. *Shaw.*

SYNONYMS. *Simia iacchus*. *Linnaeus*.—*L'Oustiti*. *Buffon*. *Audubert*.—Striated Monkey. *Pennant*.—Sanglin, or Lesser Cagui. *Edwards*.—Sanglin. *Kerr*.—*Shaw's Gen. Zool. Pl. 25.*—*Bew. Quad. p. 475.*

food, such as biscuits, fruit, vegetables, insects, and snails; and once, when let loose, it snatched a Chinese Goldfish out of a bason of water, which it killed and greedily devoured. After this, by way of trial, some small live eels were given to it, which frightened it much at first, by twisting round its neck; it however soon called forth resolution enough to master and eat them.

These animals may be rendered exceedingly tame and gentle; and they are so hardy as sometimes to produce young ones in the more southern parts of Europe. M. Audebert informs us that this has been the case, even so far north as in Paris. A pair of Striated Monkies, which belonged to a Mr. Cook, a London merchant, who resided in Lisbon, had young at that place. These, at their birth, were excessively ugly, having little or no fur. They would frequently cling very fast to the breasts of the dam; and when they grew a little they used to hang on her back or shoulders. When she was tired, she would rub them off against the wall, or whatever else was near, as the only mode of ridding herself of them. On being forced from the female, the male immediately took them to him, and suffered them to hang round him for a while to ease her of the burthen.

The voice of the Striated Monkey is a kind of shrill hissing note. Most of the individuals have a somewhat musky smell. Linnaeus remarks that they are great enemies to cats.

THE HOWLING MONKEY *.

The howling of these Monkeys in the woods, which to a stranger is truly horrid, has been compared by some travellers to the screaming of immense herds of swine, and by others to the rolling of drums. It usually commences about two hours before day-light in the morning, and again at the close of dark. A person hearing it for the first time would fancy himself about to be attacked by ferocious beasts from some nearly adjacent forest, when in fact the animals, from which it proceeds, may be distant from him a mile or more. Some travellers have asserted that they are very methodical in this kind of vocal concert. We have been informed that one of the Monkeys mounts a high branch, and that the rest seat themselves beneath. He begins his howl, which he continues for a considerable while by himself: then, upon a signal given, the whole assembly join in chorus. When at last they cease, it is stated to be on another signal which is given for that purpose by the leader.

This singular noise is formed by means of a peculiar long bony process in the throat, the concavity of which augments sound in a very surprising manner.

* **DESCRIPTION.** These animals are not of large size. Their usual length is about one foot nine inches, from the extremity of the muzzle to the base of the tail. M. Le Vaillant, however, had the head of one which must have been at least twice this size. The tail is prehensile and about the same length as the body, and naked at the under part of the extremity. The general colour of the fur is a bright chesnut, or ferruginous red. The face is naked and black.

SYNONYMS. *Simia seniculus.* *Linnaeus.*—*L'Alouette.* *Buffon.* *Audubert.*—*Royal Monkey.* *Pennant.* *Shaw.*—*Guariba.* *Marcgrave.*—*Hurleur,* in Cayenne.—*Arabata,* in Oronoko.

These Monkeys usually assemble in troops of from fifteen to thirty. They are not considered to be in any respect dangerous, and always run away with great fear from the hunters, leaping from tree to tree with wonderful agility. But if only a single person approaches their haunts, they have courage enough to tease and threaten him. Dampier, speaking of those in the Bay of Campeachy, says that they danced from tree to tree over his head, chattering and making a terrible noise, and a great many grimaces and antic gestures. Some of them broke down dry sticks and flung at him. One that was bigger than the rest came to a small limb just over his head, and leaping directly at him, made him start back; but the Monkey caught hold of the bough with the tip of his tail, and there remained swinging backward and forward, making mouths at him. At last he passed on, they still keeping him company, with the like menacing gestures, till he came to the huts where his people were collected.

He informs us that they are very sullen when seized, and extremely difficult to be taken when shot; for that they will cling with their tail and feet to a bough, as long as any life remains. "When I have shot at one, and broken its leg or arm, (says he,) I have pitied the poor creature, to see it look at and handle the broken limb, and then turn it from side to side, in a manner so mournful as scarcely to be described."

When M. Oexmelin was in South America, he attended the hunting of these animals, and was surprised at their sagacity, not only in distinguishing particularly those who were active against them, but, when attacked, in defending themselves, and providing for their own safety. He remarked, that they never abandoned each other; that they leapt from tree to tree with incredible agility; and that they flung themselves headlong from branch to branch without ever falling to the ground, always catching hold

either with their hands or tail. He says, that if they are not shot dead at once they can never be taken; for even when mortally wounded they remain fixed to the trees, where they often die, and from whence they do not fall till they are corrupted. More than four days after death he has seen them firmly fixed to the trees; and thirteen or sixteen are frequently shot before three or four can be obtained.

These Monkeys often descend to the sea-shores in order to feed on shell-fish. Dampier informs us that he has seen several of them take up oysters from the beach, lay them on a stone, and beat them with another till they demolished the shells, and then devour their contents. The same circumstance was observed by Wafer in the island of Gorgonia. "Their way (he says) was to lay the oyster on a stone, and with another to beat it till the shell was broken to pieces."

The females produce two young ones at a birth; and these, on all occasions, cling so tenaciously to the back of their dam, that there is no other method of obtaining one of them than by shooting the mother. When brought up in captivity they lose their voice, have always a sad and mournful air, and soon pine away and die. In confinement they are indolent and slow in all their motions; and their chief delight seems to consist in coiling the extremity of their tail round some object placed for the purpose, and thus suspending themselves, with their heads downwards.

Many of the voyagers describe the flesh of these Monkeys as excellent eating, having a great resemblance in taste to mutton. Dampier says, that he never ate any thing more delicious. The heads are frequently served up by the Europeans in soup, and the Negroes devour the animals with great avidity. There seems something extremely disgusting in the idea of eating what appears, when skinned and dressed, so like a child. The skull, the paws, and indeed every part of them remind us, who are unaccustomed

to it, much too strongly of the idea of devouring a fellow creature.

There is another animal of South America, the *Preacher Monkey*, which differs from the present species only in being of a somewhat larger size, and of a blackish brown colour. It has the same kind of voice, and for the most part the same habits.

THE FOUR-FINGERED MONKEY*.

These are bold and active animals, full of gambols and grimace; but in their disposition very mild and docile. From their numbers and activity they enliven the dreary forests of South America, in many parts of which they are found in great abundance. Like others of their tribe, when engaged on expeditions of plunder, they have the sagacity to place centinels on the adjacent trees, in order to give warning of the approach of danger.—It has been said by Ulloa, that, in their native forests, when they want to pass from top to top of lofty trees, too distant for a leap, they will form a chain, by hanging down linked to each other by their tails; and swing in this manner till the lowest catches hold of a bough of the next tree, from whence he draws the rest up. We are also told, that they occasion-

DESCRIPTION. The length of this Monkey is about eighteen inches, exclusive of the tail, which measures nearly two feet. The legs and arms are so long that the animal has hence obtained the name of Spider Monkey. The face is naked and of a copper colour. The body, which is of a peculiarly slender form, is covered in all parts with long black hair. The under side of the extremity of the tail is naked. They have no thumbs on their fore feet.

SYNONYMS. *Simia paniscus*. *Linnaeus*.—*Le Coiata*. *Buffon*. *Audebert*.—Spider Monkey. *Edwards*.—Quato, in Surinam.—Chamek, in Peru.—*Dr. Shaw's Figure, in Pl. 28, is a very bad representation of the animal.*

ally cross rivers, where the banks are very steep, by the same expedient*.

In Guiana these Monkeys are said to be extremely numerous. Each of the females produces at a birth one or two young ones, which she carries on her back. They live chiefly on fruit and roots, though they will occasionally eat insects and worms. They are likewise fond of shell-fish; and M. de Buffon asserts, that sometimes, for want of better food, they will eat fish, which they catch by means of their tails!

When running about in forests, they are sometimes guilty of very mischievous pranks. They are not, like the Howling Monkeys, alarmed at the approach of hunters, unless they have guns, at the report of which they all immediately run away. Sometimes they will break pieces off the branches of trees, and throw with great dexterity at the men as they pass below; and they not unfrequently adopt even more unpleasant modes of repulsion. In these situations, they assume a thousand attitudes, which oftentimes afford great diversion to the spectators.

The agility with which they pass from one tree to another is really wonderful. M. Audebert says, that he has seen a Four-fingered Monkey climb up one of the trees on the Boulevards of Paris; then, coiling its tail round one of the branches, it swung itself a few times backward and forward, and, with the force thus acquired, darted into the next adjacent tree.

*The truth of this assertion of Ulloa is doubted by Stedman, who saw much of the manners of the South American Monkeys, but never observed among them any action like this. It is, however, confirmed by Dampier and Acosta; but whether from their own observation, or only from the report of the natives, it is impossible to say.

The countenance of these animals has at all times a melancholy expression, although they are, in their native country, as lively and active as most other Monkeys. They are easily tamed, but, by confinement, they lose much of their natural playfulness: they seem to shun the sight of mankind, usually sitting with their head bent upon their stomach, as if to conceal themselves from observation. When touched they utter a plaintive kind of cry, as if to intreat that they may not be hurt. They have another sound, nearly similar, which they emit in testification of their delight at receiving any kind of food to which they are particularly partial.

These animals are peculiarly dexterous in the use of their tail. They can pick up with it objects so small as bits of wood or straw. M. Audebert says, that he has seen one of them carry hay with its tail, for the purpose of making its bed, and move and spread it about with as much facility as an Elephant could have done with his trunk. A Monkey of this species has also been known, in its frolic, to lay hold, in this manner, of a Squirrel, which had been put into the same cage with it as a companion.

So delicate are these Monkeys, that it is not without great difficulty that they can support a long voyage. The consequence is, that they are not often brought alive into England; and if even they arrive in tolerably good health, the cold of our northern climate soon destroys them.

It was a Monkey either of this, or of a species nearly allied to it, which Captain Stedman speaks of as having shot whilst in Surinam, for the purpose of making into broth, and the destruction of which was, he says, attended with such circumstances as almost ever afterwards deterred him from going a Monkey-hunting. The narrative is so interesting, that I shall give it in his own words. "Seeing me near the bank of the river in the canoe, the creature

made a halt from skipping after his companions, and, being perched on a branch that hung over the water, examined me with attention, and the strongest marks of curiosity, no doubt taking me for a giant of his own species; while he chattered prodigiously, and kept dancing and shaking the bough on which he rested, with incredible strength and agility. At this time I laid my piece to my shoulder, and brought him down from the tree into the stream;—but may I never again be witness to such a scene! The miserable animal was not dead, but mortally wounded. I seized him by the tail, and, taking him in both my hands, to end his torment swung him round, and hit his head against the side of the canoe: but the poor creature still continuing alive, and looking at me in the most affecting manner that can be conceived, I knew no other means of ending his murder, than to hold him under the water till he was drowned,—while my heart sickened on his account: for his dying little eyes still continued to follow me with seeming reproach, till their light gradually forsook them, and the wretched animal expired. I felt so much on this occasion, that I could neither taste of him nor of another which had been shot at the same time, though I saw that they afforded to my companions a delicious repast.”

Of the same species, Captain Stedman relates a circumstance very remarkable. He says, that one day he saw from his barge, one of these Monkeys come down to the water's edge, rinse its mouth, and appear to clean its teeth with one of its fingers.

THE FEARFUL MONKEY *.

There is no species of Monkey whatever, more agile, dexterous, and amusing, than this. Even the Indians of South America, who are in general very careless respecting this race of animals, are frequently induced to stop their canoes in order to admire the surprising playfulness and grimaces of these Monkeys, in the forests adjacent to the rivers. Their troops usually consist of from twenty to forty individuals; and they are extremely common in nearly all the woody districts of Cayenne and Surinam, but particularly of those in the neighbourhood of the rivers.

Of all the Monkeys of South America, these are the best able to support the rigour of our climate. If attended to with care, they will live comfortably in a room, without fire. Of this M. de Buffon mentions two instances; and he speaks of their affection towards their offspring as peculiarly interesting. In one pair that produced a young one at Bourdeaux, in the year 1764, nothing, he says, could be more beautiful than to see the two parents occupied with their little charge, which they teased incessantly, either by carrying it about, or by caressing it.

* DESCRIPTION. This Monkey is about the size of a small Cat, and its tail is somewhat longer than the body. The tail is prehensile, but is not naked at the under part of the extremity. The individuals vary much in colour, some being red, others brown, and others grey. The hair of the shoulders is always brighter than that of any other part. The legs, thighs, feet, and tail, are black. The face and ears are naked, and of a dark flesh-colour.

SYNONYMS. *Simia trepida*. *Linnaeus*.—Le Sajou. *Buffon*. *Audubert*.—Fearful Monkey. *Pennant*.—Bush-tailed Monkey. *Edwards*.—Sajouassou, in South America.

The male loved it to distraction. The father and mother carried it alternately; but now and then, when it did not hold properly, they gave it a very severe bite.

So gentle and domestic are these Monkies, when treated kindly, that it is not necessary to chain them, like the generality of their race, in order to prevent them from running away; but, when they are permitted to range about at liberty, their restless and curious or inquisitive disposition renders them occasionally very troublesome. They will break, tear, and upset almost every thing that lies in their way. Their food is fruit, bread, or roots; and they will devour large insects of all kinds. They search eagerly after spiders, of which they are peculiarly fond. They are partial both to wine and spirits. It is said, that in Cayenne no other animals of the same tribe are such excellent guards of the houses as these. Some of them have been rendered so tame as to follow their master out of doors like a dog. They are, however, extremely whimsical in their attachments, entertaining for some persons great partiality, and for others the most decided aversion.

Like other South American Monkies they frequently whistle. When enraged they shake their heads violently; and utter, in a ferocious tone, the syllables *Pi, ca, rou*. Their tail is prehensile, but they use it with much less address, in laying hold of objects, than the Four-fingered Monkey.

THE SQUIRREL MONKEY*.

In his account of Surinam, Stedman informs us, respecting these Monkies, that he saw them daily passing

* DESCRIPTION. This animal is about the size of a Rabbet. The colour of its body is reddish, and the tail is black at the extremity.

along the sides of the river, skipping from tree to tree, regularly following each other, like a little army, with their young ones at their backs, not unlike small knapsacks. Their manner of travelling is this: The foremost walks to the extremity of a bough, from which it bounds to the extremity of one belonging to the next tree, often at a surprising distance, and with such wonderful activity and precision, that it never once misses its aim: the others, one by one, and even the females with their little ones at their backs, which stick fast to their mother, follow their leader, and perform the same leap with the greatest apparent facility and safety. They are also remarkable for climbing up the *nebees*, or natural ropes, with which many parts of the forests are interwoven.

THE CINGALESE MONKEY *.

These animals are kept tame in many of the houses of Ceylon. They are easily domesticated; and in this state generally sit upright, with their hands crossed over each other.

The fore-feet are orange-coloured. The head is very round, and the face milk white, with a round, black patch in the middle, in which are the mouth and nostrils. The eyes are black and lively.

SYNONYMS. *Simia Sciurea*. *Linnaeus*.—Orange Monkey. *Pennant*.—*Caitaia*. *Marcgrave*.—*Le Saïmiri*. *Buffon*. *Audebert*.—*Kecsee-Kecsee*. *Stedman*.—Squirrel Monkey. *Shaw*.—*Shaw's Gen. Zool. Pl. 25*.

* DESCRIPTION. This Monkey is mentioned by Professor Thunberg in his account of Ceylon. He describes it as being about the size of a small Cat, and having a long hairy and prehensile tail: the body grey; the face blackish, bald, and very little shaded with hair; the beard on the chin and cheeks white, and turned backward, the hair standing, however, nearly erect, and almost covering

When they observe any acquaintance, they immediately come jumping to him, fawn upon him, grin, and with a peculiar kind of cry testify their joy. They are of a very friendly and gentle nature, and never bite unless much irritated. If, in the presence of one these creatures, any person kisses and caresses a child, he expresses a great desire to do the same. If a child is beaten in his presence, he rears himself on his hind-legs, grins, and howls in a revengeful manner, and, if let loose, will attack the chastiser.

He leaps faster than he can run, on account of his hind-legs being longer than the others; and he is very delicate and careful respecting his tail. Professor Thunberg attempted to bring one of these Monkeys into Europe; but, on coming into a cooler climate, he died. They are all so very tender as not to be able to support the slightest degree of cold.

the ears in front. On the chin and upper-lip, he says, the hair is short, but on the cheeks above an inch in length. The hands and feet are blackish and naked; the nails long and blunt, and the thumb detached and short. On the posteriors there are hard and naked callosities. The tips of the ears are rounded, almost bare, and black.

SYNONYMS. Thunberg calls this animal *Simia Silenus*. It certainly cannot be that of Linnæus, which has a short tail, not prehensile, and in other respects is different. He calls it also *Kollewai*, and *Cingalese Ape*; but it appears to agree with none described in our present books.—See Thunberg, iv, 214.

*Anecdotes of some unascertained Species of
Monkeys.*

M. D'OBSONVILLE, speaking of the sanctuaries for Monkeys in several parts of India, says, that when travelling he has occasionally entered these ancient temples to repose himself, and his Indian dress gave the animals little suspicion. He has seen several of them at first considering him, and then attentively looking at the food he was about to eat. Their eyes and agitation always painted their inquietude, their passion to gormandize, and the strong desire they had to appropriate at least a part of his repast to themselves.

In order to amuse himself on these occasions, he always took care to provide a quantity of parched pease. At first he would scatter a few on the side where the chief was, (for he says they have always a principal Monkey to head them,) and the animal would approach by degrees, and collect them with avidity. He then used to present his hand full; and as they are in general accustomed to see none but pacific people, the chief would venture, but in a sideling manner, to approach, as if eagerly watching that there was no sinister contrivance. Presently, becoming bold, he would seize the thumb of the hand in which the pease were held, with one paw, and eat with the other, keeping at the same time his eyes steadily fixed on those of M. D'Obsonville. "If," continues our entertaining writer, "I laughed or moved, he would break off his repast, and, working his lips, make a kind of muttering, the sense of which, his long canine teeth, occasionally shown, plainly interpreted. When I threw a few at a dis-

tance, he seemed satisfied that others should gather them up; but he grumbled at, and sometimes struck, those that came too near me. His cries and solicitude, though in part perhaps the effect of greediness, apparently indicated his fear, lest I should take advantage of their weakness to ensnare them: and I constantly observed that those which were suffered to approach me nearest, were the well-grown and strong males; the young and the females were always obliged to keep at a considerable distance."

The care and tenderness of the females, in a completely wild state, to their offspring, was very conspicuous. They hold them under a proper obedience and restraint; and M. D'Obsonville has seen them suckle, cleanse, and search the vermin from their young, and afterwards, crouching on their hams, delight to see them play with each other. These would wrestle, throw, or chase one another; and if any of them were malicious in their antics, the dams would spring upon them, and, seizing them with one paw by the tail, correct them severely with the other. Some would try to escape, but, when out of danger, approached in a wheedling and caressing manner, though ever liable to a relapse into the same faults: in other cases, each would come at the first cry of the dam. If they removed to a little distance, the young would follow gently; but when there was any necessity for going fast, they always mounted on the backs, or rather hung embracing the bellies of the females.

Monkeys are generally peaceable enough among each other. In extensive, solitary, and fertile places, herds of different species sometimes chatter together, but without disturbance, or any confusion of the race. When, however, adventurous stragglers seem desirous of seeking their fortunes in places where another herd is in possession, these immediately unite to sustain their rights. M. de Maisonpré, and six other Europeans, were witnesses to a

singular contention of this nature, in the enclosures of the Pagodas of Cherinam. A large and strong Monkey had stolen in, but was soon discovered. At the first cry of alarm many of the males united, and ran to attack the stranger. He, though much their superior in size and strength, saw his danger, and flew to attain the top of a pyramid, eleven stories high, whither he was instantly followed; but when arrived at the summit of the building, which terminated in a small round dome, he placed himself firmly, and taking advantage of his situation, seized three or four of the most hardy, and precipitated them to the bottom. These proofs of his prowess intimidated the rest, and after much noise they thought proper to retreat. The conqueror remained till evening, and then betook himself to a place of safety.

Their conduct towards such of their brethren as become captives is very remarkable. If one of them is chained in their neighbourhood, especially if of the society to which he belonged, they will attempt various means, for some time, to procure his liberty: but when their efforts prove ineffectual, and they see him daily submit to slavery, they will never again, if he should by any chance escape, receive him among them, but will fall upon and beat him away without mercy.

Condamine and Bouger saw, in Peru, some domesticated Monkies of large size, which had been admitted into the apartments of the Academicians, during the time they were employed in making observations in the mountains. These animals greatly excited the astonishment of the Academicians, by afterwards, of their own accord, going through a series of imitations. They planted the signals, ran to the pendulum, and then immediately to

the table, as if for the purpose of committing to paper the observations they had made. They occasionally pointed the telescopes towards the heavens, as if to view the planets or stars, and performed numerous other feats of a similar nature.

An occurrence which took place before the troops of Alexander the Great, is too singular and too amusing to be passed over in silence. The soldiers under the command of this monarch always marched in order of battle. They happened one night to encamp on a mountain, that was inhabited by a numerous tribe of Monkies. On the following morning they saw, at a distance, what appeared to be an immense body of troops approaching them, as if with the intention of coming to an engagement. The commanders, as well as the soldiers, were in the utmost astonishment. Having entirely subdued the prince of the country, they were not able to conceive from whence this new force could have come: they had not previously been informed of any thing of the kind. The alarm was immediately given, and in a short time the whole Macedonian army was drawn up in battle array, to combat with this unexpected foe. The prince of the country, who was a prisoner in the camp, was interrogated respecting it. He was surprised to be informed of such a force in the neighbourhood, and requested permission to behold it himself. He smiled at the error; and the Macedonians were not a little chagrined that they should have been such fools as to mistake a troop of these imitative animals for a band of armed men.

OF LEMURS IN GENERAL*.

In their habits and economy, as well as in their hand-like paws, these animals have a very close alliance to the Monkies. They principally differ from them in the shape of the head, which is more like that of the Dog, and in the great length of the hind-legs. The latter, indeed, are so long, that, when the animals walk on all-fours, their haunches are considerably more elevated than the shoulders. But this structure is of astonishing advantage to them in climbing into the trees. Here many of the species are wonderfully active. They leap from branch to branch, with such rapidity, says Sonnerat, that the eye is scarcely able to follow them.

THE BENGAL LORIS, OR SLOW LEMUR†.

There are few quadrupeds so inactive, and so slow in their motions, as the Bengal Loris. Some naturalists have

* The principal Linnean characteristics of this tribe are four front-teeth in the upper jaw, the intermediate ones remote: six long, compressed, parallel teeth in the under jaw; the canine-teeth solitary; and the grinders somewhat lobated.

The animals have one sharp claw on each hind foot; all their other nails are flat.

† DESCRIPTION. This Loris is about the size of a small Cat. It is of an elegant pale brown, or mouse colour; the face flattish, and the nose somewhat sharp. The eyes are extremely prominent: they are surrounded with a circle of dark brown, and a stripe of the same colour runs along the middle of the back.

SYNONYMS. *Lemur Tardigradus*. Linn.—Tailless Macauco. Penn. Syn.—Loris. Buffon: the name given to it by the Dutch.—Le Loris paresseux. Audebert.—Thevangua, or Tatonneur. D'Obsonville.—Slow Lemur. Shaw.—Shaw's Gen. Zool. Pl. 29.

from this circumstance been induced to rank it amongst the Sloths, but it has no other resemblance to them whatever. It is a nocturnal animal, and sleeps, or at least lies motionless, during the greatest part of the day.

The late Sir William Jones has given us an extremely pleasing account of this little creature, in the fourth volume of the Asiatic Researches. From this we obtain a correct knowledge of the habits of the animal, in its native country.

“In his manners he was for the most part gentle, except in the cold season, when his temper seemed wholly changed; and his Creator, who made him so sensible of cold, to which he must often have been exposed even in his native forests, gave him, probably for that reason, his thick fur; which we rarely see on animals in these tropical climates. To me, who not only constantly fed him, but bathed him twice a week in water accommodated to the seasons, and whom he clearly distinguished from others, he was at all times grateful; but when I disturbed him in winter he was usually indignant, and seemed to reproach me with the uneasiness which he felt, though no possible precautions had been omitted to keep him in a proper degree of warmth. At all times he was pleased with being stroked on the head and throat, and frequently suffered me to touch his extremely sharp teeth: but his temper was always quick; and when he was unseasonably disturbed, he expressed a little resentment, by an obscure murmur, like that of a Squirrel; or a greater degree of displeasure by a peevish cry, especially in winter, when he was often as fierce on being much importuned, as any beast of the woods.

“From half an hour after sun-rise to half an hour before sun-set, he slept without intermission, rolled up like a Hedgehog; and, as soon as he awoke, he began to prepare himself for the labours of *his* approaching day, licking and

dressing himself like a cat; an operation which the flexibility of his neck and limbs enabled him to perform very completely: he was then ready for a slight breakfast, after which he commonly took a small nap; but when the sun was quite set, he recovered all his vivacity.

“His ordinary food was the sweet fruit of this country; plantains always, and mangoes during the season; but he refused peaches, and was not fond of mulberries, or even of guaiavas: milk he lapped eagerly, but was content with plain water. In general he was not voracious, but never appeared satisfied with grasshoppers; and passed the whole night, while the hot season lasted, in prowling for them. When a grasshopper, or any insect, alighted within his reach, his eyes, which he fixed on his prey, glowed with uncommon fire; and, having drawn himself back to spring on it with greater force, he seized the prey with both his fore-paws, but held it in one of them while he devoured it. For other purposes, and sometimes even for that of holding his food, he used all his paws indifferently as hands, and frequently grasped with one of them the higher part of his ample cage, while his three others were severally engaged at the bottom of it; but the posture of which he seemed fondest was to cling with all four of them to the upper wires, his body being inverted. In the evening he usually stood erect for many minutes, playing on the wires with his fingers, and rapidly moving his body from side to side, as if he had found the utility of exercise in his unnatural state of confinement.

“A little before day-break, when my early hours gave me frequent opportunities of observing him, he seemed to solicit my attention; and if I presented my finger to him he licked or nibbled it with great gentleness, but eagerly took fruit when I offered it; though he seldom ate much at his morning repast: when the *day brought back his*

night, his eyes lost their lustre and strength, and he composed himself for a slumber of ten or eleven hours.

“My little friend was, on the whole, very engaging; and when he was found lifeless, in the same posture in which he would naturally have slept, I consoled myself with believing that he died without much pain, and lived with as much pleasure as he could have enjoyed in a state of captivity.”

In the year 1755, M. D'Obsonville purchased one of these animals of an Indian. His voice was a kind of whistling by no means unpleasant. When his prey was attempted to be taken from him, his countenance changed to an appearance expressive of chagrin, and he inwardly uttered a tremulous, acute, and painful note. He was melancholy, silent, and patient. He generally slept during the day with his head resting upon his hands, and his elbows between his thighs. But in the midst of this sleep, although his eyes were closed, he was exceedingly sensible to all impressions from without, and never neglected to seize whatever prey came inconsiderately within his reach. Though the glare of sun-shine was unpleasant to him, it was never observed that the pupils of his eyes suffered any contraction.

During the first month he was kept with a cord tied round his waist, which, without attempting to untie, he sometimes lifted up with an air of grief. M. D'Obsonville himself took charge of him, and at the beginning he was bitten four or five times for offering to disturb or take him up; but gentle chastisement soon corrected these little passions, and he afterwards gave him the liberty of his bed-chamber. Towards night the little animal would rub his eyes, then, looking attentively round, would climb upon the furniture, or more frequently upon ropes placed for the purpose.

Sometimes M. D'Obsonville would tie a bird in the part of the chamber opposite to him, or hold it in his hand in

order to invite him to approach: he would presently come near with a long, careful step, like a person walking on tip-toe to surprise another. When within a foot of his prey he would stop, and, raising himself upright, advance gently, stretching out his paw; then, at once seizing, would strangle it with remarkable celerity.

He perished by an accident. He appeared much attached to his master, who always used to caress him after feeding. His return of affection consisted in taking the end of M. D'Obsonville's fingers, pressing them, and at the same time fixing his half-open eyes on those of his master.

Two of these animals, which Thevenot saw in the East, were brought from Ceylon. When examined, they would stand on their hind feet. They often embraced each other, and looked stedfastly on the numerous spectators that visited them, without seeming in the least alarmed.

THE MACAUCO, OR RING-TAILED LEMUR*.

Although these animals have been frequently brought into Europe from Madagascar and other islands of the

* DESCRIPTION. The Macauco is about the size of a small Cat. In its general form it is long and slender. The muzzle is pointed; and there is a black space round each eye. The ears are oval. The forehead is white; and the back of the head, sides of the neck, and shoulders, are blackish. The back, and the outsides of the legs, are of a brownish grey; and the throat, breast, and insides of the legs whitish. The tail, which is very long and thickly covered with hair, is marked throughout its whole length with alternate black and white rings.

SYNONYMS. *Lemur Catta*. *Linnaeus*.—*Le Mococo*. *Buffon*. *Audebert*.—*Maucauco*. *Edwards*.—*Ring-tailed Macauco*. *Pennant*.—*Ring-tailed Lemur*. *Shaw*.—*Shaw's Zoology*, Pl. 35, from *Buffon*.—*Bewick's Quadrupeds*, p. 442.

East, yet we are almost wholly ignorant of their habits, except in a domesticated state. It has, however, been ascertained that they are creatures of great activity; and that, like the rest of their tribe, they subsist chiefly on fruit, and inhabit trees, where they live in troops, consisting usually of from thirty to fifty in number.

A Macauco which was kept in the Museum of Natural History at Paris, had been in Europe more than nineteen years; and from the great age which this animal attained, it is natural to conclude that the temperature of our climate was well suited to its habits. Such, however, does not seem to have been precisely the case. He appeared to suffer much from the cold, frequently rolling himself into a ball, and covering his back and head with his long and bushy tail. During the winter, he was always kept in a room that had a fire in it; and frequently, for a long time together, would sit before the fire, stretching out his little arms towards the flame to warm himself. Whenever he sat in the sun, he adopted the same attitude. He was so partial to heat, that he oftentimes even burnt his whiskers and face, before he would remove to a greater distance. When the heat incommoded him, he would turn the sides of his head, alternately, to the fire, in order to alleviate the pain thereby occasioned.

He had not been previously accustomed to a chain; and, consequently, when he was brought into the Museum, he was suffered to range about at freedom in the Conservatory. In this room are prepared the skins of the animals that are intended to enrich the collections; and the greatest attention was necessary to keep the creature out of mischief. Continually in motion, he handled and turned over almost every thing within his reach.

A board placed over the door served him for a bed. To this he retired at night, but never until he had first prepared himself for sleep, by at least half an hour's violent

exercise, in leaping about the room. As soon as this was ended he would lie down on his bed, and in a few minutes afterwards was fast asleep.

His usual food was bread, carrots, and fruit; and he was particularly fond of the latter. He would also eat eggs; and, when young, was partial to baked meats and spirituous liquors. No creature could be more gentle; and he, on all occasions, showed himself sensible of the kindnesses and attention he received. He exhibited no indications of particular attachment, but was familiar with every one; and would climb on the shoulders, or go to rest on the knees, of any person who would suffer him to do so.

Several of these animals have, at different times, been imported into England. A Macauco that was in the menagerie at the Tower of London, although he would suffer himself to be handled with gentleness, never failed to resent any attempt to tease him. He exhibited much dislike to children, and had he not been chained, would, no doubt, have sometimes attacked them. He usually sat on his haunches in an upright posture, with his tail elevated over his shoulders. Like the animal in the Menagerie at Paris, he was extremely susceptible of cold; and, though kept in a warm room, would come as near to the fire as possible. He did not usually sleep in the day time; and at night would lie coiled up, with his head under his breast, and his long bushy tail wrapped closely round his body.

*The Indri** is an active and intelligent animal of this tribe. Although naturally an inhabitant of deep forests, residing among the branches of the trees, and subsisting on

* *Lemur Indri* of Linnæus.

vegetables and fruit, we are assured, by M. Sonnerat, that it is so susceptible of education, that the natives of Madagascar are enabled to train it to the chase. This, if true, is a singular fact, as all other animals that are known to be employed in the chase, are themselves carnivorous, and have been endowed with a natural instinct to pursue and destroy.

The Mongous, or Woolly Macauco *. The Compté de Buffon possessed a Mongous for several years. For some time, at first, the animal was suffered to run at liberty about the house; but he became at length so troublesome that it was necessary to keep him chained. He had a habit of playing with and biting his tail, and destroyed, in this manner, three or four of the last vertebræ. Whenever he escaped from his chain, he would visit the shops of the neighbourhood, and would devour fruit, sugar, and sweet-meats, opening with wonderful dexterity the boxes that contained them. At such times it was difficult to retake him, as he would bite severely even those whom he best knew.

Whenever this animal was weary of being left alone, he made a loud kind of noise, somewhat resembling the croaking of a frog. So fearful was he of cold and of moisture, that he never willingly moved far from the fire. His food was bread and fruits. His tongue was so rough, that he could lick a person's hand until it became inflamed; and, if not guarded against, he would generally end this operation with a bite. He died of cold, in the winter of 1750, although, during the whole time, he had been kept in a perfectly warm place.

* *Lemur Mongox* of Linnæus.—*Shaw's Gen. Zool. Pl.* 32.—*Bew. Quad.* p. 444.

OF BATS IN GENERAL*.

These very singular animals would seem, at first sight, to hold a kind of middle station between the Quadrupeds and Birds. It is, however, only in their power of raising themselves into the air, by means of the membranes which extend round their body, that they are in the least allied to the latter.

Their structure cannot be contemplated without admiration, the bones of the extremities being continued into long and thin processes, connected by a most delicately formed membrane or skin, capable, from its thinness, of being contracted at pleasure into innumerable wrinkles, so as to lie in a small space when the animal is at rest, and to be stretched to a very wide extent for flight.—Should a speculative Philosopher, says Dr. Shaw, not aware of the anatomical impossibility of success, attempt, by means of light machinery, to exercise the power of flight, he could not hit on a more plausible idea than that of copying the structure described. Accordingly, a celebrated author has represented a sage theorist busied in imitating, for this purpose, “the folding continuity of the wing of the Bat.”—Although this membrane enables the Bat, after it has once raised itself from the ground, to flit along the air, yet all its motions, when compared with those of birds, are clumsy and awkward; and, in walking, its feet appear so entangled with its wings, that it seems scarcely able to drag its body along.

* Bats have erect, sharp-pointed teeth, situated near together. Their fore-toes are elongated, and connected by the membranes which perform the office of wings. *Linn. Gmel. i. 45.*

THE COMMON BAT *, LONG-EARED BAT †, NOCTULE BAT ‡,
BARBASTELLE BAT ||, AND HORSE-SHOE BAT §.

The British species of Bats for the most part pass the winter, during the absence of their insect prey, in a torpid state, without either food or motion, suspended in some

* DESCRIPTION. The Common Bat is about the size of a small Mouse, and measures nearly nine inches from tip to tip of its wings. The ears are short, and have each a very small inner valve. The eyes are very minute. The colour of the fur is somewhat that of the Common Mouse, with a slightly reddish tinge.

SYNONYMS. *Vespertilio murinus*. *Linnaeus*.—Le Chauve Souris. *Buffon*.—Common Bat. *Pennant*.—Little Bat. *White*.—*Bingley's Memoirs of British Quadrupeds*, Pl. 1.

† DESCRIPTION. This animal resembles the last, except that its ears are nearly half as long as the body, and that the inner valves are large and conspicuous.

SYNONYMS. *Vespertilio auritus*. *Linnaeus*.—L'Oreillar. *Buffon*.—Long-eared Bat. *Pennant*.—*Bingley's Mem. of Brit. Quad.* Pl. 2.

‡ DESCRIPTION. The length of the Noctule Bat is about $5\frac{1}{2}$ inches to the tip of the tail, and the breadth of the expanded membranes $14\frac{1}{2}$ inches. The ears are short, broad, and rounded; and the inner valves small. The fur is nearly of a chesnut colour.

SYNONYMS. *Vespertilio noctula*. *Linnaeus*.—La Noctule. *Buffon*.—Great Bat. *Pennant*.—Noctule Bat. *Shaw*.—*Bingley's Mem. of Brit. Quad.* Pl. 3.

|| DESCRIPTION. The Barbastelle Bat is somewhat larger than the two first species. On the muzzle there is a naked, hollow, or sunken mark. The ears are large, and so broad that their inner edges touch each other over the nose. The inner valves are conspicuous. The colour of the fur is a blackish brown.

SYNONYMS. *Vespertilio barbastellus*. *Linnaeus*.—La Barbastelle. *Buffon*.—Barbastelle Bat. *Shaw*.—*Bingley's Mem. of Brit. Quad.* Pl. 4.

§ DESCRIPTION. The length of the Horse-shoe Bat is $3\frac{1}{2}$ inches to the tip of the tail, and the breadth of the expanded membranes

dark place, in old ruins, caverns, or in the hollows of decayed trees. During the time they remain in this state, most of the animal functions are so far suspended as scarcely to be perceptible. The action of the heart and arteries becomes so exceedingly languid, that the pulse can hardly be felt: if respiration be at all carried on, it is also so very slow as scarcely to be discoverable. The natural temperature, or animal heat, sinks greatly below the usual standard; and digestion becomes altogether suspended. All the visible excretions are at a stand; and none of the functions seem to go on, excepting a very slow degree of nutrition, and an interchange of old for new matter, in the depository cells of the body.

Like the Mouse, these animals are capable of being tamed to a certain degree; and we are told by Mr. White, that he was once much amused with the sight of a Bat that would take flies out of a person's hand. "If," says he, "you gave it any thing to eat, it brought its wings round before the mouth, hovering and hiding its head in the manner of birds of prey when they feed. The adroitness it showed in shearing off the wings of the flies, (which were always rejected,) was worthy of observation. Insects seemed to be most acceptable, though he did not refuse raw flesh when offered; so that the notion that Bats go down chimneys and gnaw people's bacon, seems, upon the whole, no improbable story." While Mr. White amused himself with

about 14 inches. On the face there is a pointed membranaceous appendage, somewhat in the form of a horse's shoe, which surrounds the nose and upper lip. The ears are about the length of the head, sharp-pointed, and have no inner valves. The fur is of a deep cinereous colour on the upper parts, and whitish below.

SYNONYMS. *Vespertilio ferrum-equinum*. *Linnaeus*.—*La Chauve-souris a fer-à-cheval*. *Buffon*.—Horse-shoe Bat. *Pennant*.—*Bingley's Mem. of Brit. Quad. Pl. 5*.

this quadruped, he saw it several times confute the vulgar opinion that Bats, when on a flat surface, cannot get on the wing again, by rising with great ease from the floor.

From experiments made by Spallanzani, on the Long-eared, the Horse-shoe, and the Noctule Bats, it appears that these animals possess some additional sense, which enables them, when deprived of sight, to avoid obstacles as readily as when they retained the power of vision. When their eyes were covered, or even put entirely out, they would fly about in a darkened chamber without ever hitting against the walls, and always suspend their flight with caution when they came to a place where they could perch. In the middle of a dark sewer, that turned at right angles, they would, though at a considerable distance from the walls, regularly bend their flight with the greatest nicety. When branches of trees were suspended in a room, they always avoided them; and flew betwixt threads hung perpendicularly from the ceiling, though these were so near each other that they had to contract their wings in passing through them*. Mr. Jurin supposes that the sense which enables them to perform these unaccountable operations, is lodged in the expanded nerves on the nose; but, in several of the species, the membrane in which these end is wanting. Some have supposed that this power of avoiding obstacles in the dark is dependent principally on their ears; for, when the ears of the blinded Bats were closed, they flew against the sides of the room, and did not seem at all aware of their situation.

Several Bats were collected together by Mr. Carlisle, for the purpose of the above experiments, and they were preserved in a box for more than a week. They refused every

* "Memoire sur quelque espèces de Chauve-Souris," &c. &c. par l'Abbé Spallanzani.

kind of food for several days. During the day-time they were extremely desirous of retirement and darkness, and, while confined to the box, never moved or endeavoured to get out while it was light; and, when spread on the carpet, they commonly rested for a few minutes, and then, beginning to look about, crawled slowly to a dark corner or crevice. At sunset the scene was quite changed; every one then endeavoured to scratch its way out of the box; a continued chirping was kept up, and no sooner was the lid of the prison opened, than each was active to escape, either flying away immediately, or running nimbly to a convenient place for taking wing. When these Bats were first collected, several of the females had young ones clinging to the breast in the act of sucking. One of them flew with perfect ease, though two little ones were thus attached to her, which weighed nearly as much as their parent. All the young ones were devoid of down, and of a black colour.

From Linnæus we learn, that the female makes no nest for her offspring. She is content with the first hole she finds, where, sticking herself by her hooks against the sides of her apartment, she permits her young ones to hang at the nipple, and in this manner continues for the first or second day. When, after some time, the dam begins to grow hungry, and finds a necessity of stirring abroad, she takes her little ones off and sticks them to the wall, in the manner she before hung herself, where they immovably cling, and patiently wait her return.

Bats, it is said, may be caught by throwing into the air the heads of burdock, whitened with flour. Either mistaking these for prey, or dashing casually against them, they are caught by the hooked prickles, and brought to the ground*.

* For a copious account of the habits and economy of each species of British Bat, see "Memoirs of British Quadrupeds."

THE VAMPIRE BAT*.

The specific denomination of Vampire has been given by naturalists to this tremendous species of Bat, from the circumstance of its reputed propensity to suck the blood of men and animals during their sleep. There is, however, good reason to imagine that this thirst for blood is not confined to a single species, but is common to several of the large kinds of Bats, which are inhabitants of hot climates.

We are informed that the Bats of Java seldom fail to attack those persons who lie with their extremities uncovered, whenever they can have access to them; and that persons thus attacked, have sometimes nearly passed from sleep into eternity. It is stated that the Bats are so dexterous in this operation, that they can insinuate their aculeated tongue into a vein, and continue to draw the blood, without being perceived; and that, during all the time, they agitate the air with their wings in so pleasing a manner, as to throw the sufferer into a still sounder sleep. Notwithstanding this propensity for blood, it is asserted that they also subsist on the juices of different kinds of fruit;

* DESCRIPTION. The usual length of the Vampire Bat is from nine inches to a foot, and the extent of its wings sometimes four feet and upwards. Its general colour is a deep reddish brown. The head is shaped somewhat like that of a Fox. The nose is sharp and black; and the tongue pointed, and terminated by sharp prickles. The ears are naked, blackish, and pointed; and the membranes of the wings similar in colour to those of the Common Bat.

It is a native of Guinea, and of Madagascar and the other islands in the Indian Ocean.

SYNONYMS. *Vespertilio vampyrus*. *Linnaeus*.—*La Roussette*. *Buffon*.—Ternate Bat. *Pennant*.—Great Bat. *Edwards*.—*Pero volador*, in New Spain.—*Der Blutsauger*, in Germany.—*Shaw's Gen. Zool. Pl. 44*.

and that, in particular, they are so partial to the juice of the palm-tree, that they will sometimes intoxicate themselves with it, until they fall senseless to the ground.

During the day-time these animals lie concealed in the hollows of decayed trees, or suspend themselves to the branches by their claws; and towards the close of evening they issue forth in flights, even more numerous than those of Crows in Europe. We are informed by Finch, in his quaint stile of writing, that "they hang to the boughs of trees, near Surat, in the East Indies, in such vast clusters, as would surprise a man to see; and the noise and squealing they make is so intolerable, that 'twere a good deed to bring two or three pieces of ordnance, and scour the trees, that the country might be rid of such a plague as they are to it." In a small island, one of the Philippines, Dampier tells us that he saw an incredible number of Bats, so large that none of his company could reach from tip to tip of their wings. In the evening, as soon as the sun was set, he says, these animals used to take their flight in swarms, like Bees, to a neighbouring island; and they were seen to continue in immense numbers, till darkness rendered them no longer visible. The whole of the time from day-break in the morning till sun-rise, they occupied in returning to their former place; and this course they constantly pursued all the time the ship was stationed off that island.

At Rose Hill, near Port Jackson, in New Holland, it is supposed that more than *twenty thousand* of these animals were seen within the space of a mile.—Some that were caught alive would, almost immediately afterwards, eat boiled rice and other food from the hand; and in a few days became as domestic as if they had been entirely bred in the house. Governor Philip had a female, which would hang by one leg a whole day without changing its position, and in that pendent situation, with its breast neatly covered

with one of its wings, would eat whatever was offered to it, lapping from the hand like a cat.

The smell of these creatures is more rank and powerful than that of a Fox; yet the Indians eat them, and declare their flesh to be excellent food. They become excessively fat at certain times of the year, and it is then that they are said to be the most delicious. The French, who reside in the Isle of Bourbon, boil them in their bouillon, *to give it a relish!*

In New Caladonia the natives use the hair of these animals in the making of ropes, and in the tassels of their clubs; interweaving it with the threads of *Cyperus squarrosus*.

THE SPECTRE BAT*.

In no material respect do the habits and economy of these animals, natives chiefly of South America, and of some of the islands in the Pacific Ocean, appear to differ from those of the species last described. Their thirst for blood has been distinctly ascertained by numerous travellers. M. de Condamine says, respecting them, that "the Bats which suck the blood of horses, mules, and even of men, when not guarded against, by sleeping under the shelter of a pavilion, are a scourge to most of the hot countries of America." At Borja, and several other places, he states, that, in his time they had, in certain parts, destroyed even

* DESCRIPTION. The length of the Spectre Bat is about six inches; and the extent of its wings, two feet. On the nose there is an upright, pointed, lanceolate and funnel-shaped membrane. The colour of the fur is cinereous. The ears and wing-membranes are naked and blackish.

SYNONYMS. *Vespertilio Spectrum*. *Linnaeus*.—Le Vampire. *Buffon*.—Spectre Bat. *Pennant*.—*Shaw's Gen. Zool. Pl. 43*, from *Schreber's Mammalia*.

the great cattle which had been introduced there by the Missionaries.

Captain Stedman, whilst in Surinam, was attacked during his sleep by one of these Bats; and as his account of the incident is somewhat singular, and tends, in a very interesting manner, to elucidate the fact, I shall extract it in the language of his own narrative. "I cannot here (says he) forbear relating a singular circumstance respecting myself, viz. that on waking about four o'clock one morning, in my hammock, I was extremely alarmed at finding myself weltering in congealed blood, and without feeling any pain whatever. Having started up, and rung for the surgeon, with a fire-brand in one hand, and all over besmeared with gore; to which, if added, my face pale, short hair, and tattered apparel, he might well ask the question,

' Be thou a spirit of health, or goblin damn'd,
' Bring with thee airs of heav'n, or blasts from hell!'

The mystery, however, was, that I had been bitten by the *Vampyre*, or *Spectre* of Guiana, which is also called the *Flying-Dog* of New Spain, and by the Spaniards *Perro-volador*: this is no other than a Bat, of monstrous size, that sucks the blood from men and cattle while they are fast asleep, even sometimes till they die; and as the manner in which they proceed is truly wonderful, I shall endeavour to give a distinct account of it.—Knowing, by instinct, that the person they intend to attack is in a sound slumber, they generally alight near the feet, where, while the creature continues fanning with his enormous wings, which keeps one cool, he bites a piece out of the tip of the great toe, so very small indeed, that the head of a pin could scarcely be received into the wound, which is consequently not painful; yet, through this orifice, he continues to suck the

blood, until he is obliged to disgorge. He then begins again, and thus continues sucking and disgorging till he is scarcely able to fly; and the sufferer has often been known to sleep from time into eternity. Cattle they generally bite in the ear, but always in places where the blood flows spontaneously. Having applied tobacco ashes as the best remedy, and washed the gore from myself and my hammock, I observed several small heaps of congealed blood all round the place where I had lain, upon the ground; on examining which, the surgeon judged that I had lost at least twelve or fourteen ounces during the night."

These animals, it is said, will frequently hang to one another in vast clusters, like swarms of bees. Mr. Foster assures us, that he has seen at least five hundred of them suspended, some by their fore, and others by their hind legs, in a large tree, in one of the Friendly Islands.

Bruta*.

OF THE SLOTHS IN GENERAL†.

All the species which constitute the present tribe are unparalleled in the rest of the animal creation, for slowness and inactivity. Their feet are furnished with strong hooked claws, to enable them to climb the trees, where their voracity leads them to devour both the leaves and fruit. Their eyes are languid and heavy, and their whole countenance expresses so much misery, that no one can look upon them without pity. Their teats are seated on the breast; and, in two of the species, it is a remarkable circumstance, that, instead of distinct excretory apertures, there is but one common canal, as in birds.

Only three species of Sloths have hitherto been discovered, two of which are found chiefly in South America.

THE THREE-TOED SLOTH‡.

Of the Three-toed Sloth we have a very curious, though often-quoted account, written by Kircher, principally from

* The animals belonging to this order have no front-teeth in either jaw. Their feet are armed with strong, blunt, and hoof-like nails. Their form is in appearance clumsy, and their pace somewhat slow. No animals belonging to this order are natives of Europe.

† The Sloths have no cutting teeth in either jaw: the canine-teeth are obtuse; and there are five grinders on each side. Their fore-legs are much longer than the hind ones; and the body is covered with hair, and not with scales, as in the Armadillo, and some other animals of the order.

‡ DESCRIPTION. In its general appearance this animal is extremely uncouth. The body is thick, the fore legs short, the hinder

the authority of a Provincial of the Jesuits, in South America, who had several of these animals in his possession, and tried many experiments with them relative to their nature and properties. Its figure is (he says) extraordinary. It is about the size of a cat, has a very ugly countenance, and has its claws extended like fingers. It lives generally on the tops of trees; and, if these are at all lofty, it is employed sometimes two whole days crawling up, and as many in getting down again. Nature has doubly guarded it against its enemies; first, by giving it such strength in its feet, that whatever it seizes is held so fast that it will not suffer itself to be freed, but must die of hunger. Secondly, in having given it such an affecting countenance, that when it looks at any one who might be tempted to injure it, it is almost impossible not to be moved with compassion; it also sheds tears, and upon the whole persuades one that a creature so defenceless and so abject ought not to be tormented.

To try an experiment with this animal, the Provincial had one of them brought to the Jesuit's College at Cartagena. He put a long pole under its feet, which it seized very firmly, and would not let go again. The animal, thus voluntarily suspended, was placed between two beams,

ones far longer. The feet are very small, but armed with three excessively strong and large claws, of a curved form, and sharp-pointed. The head is round, and the face short and naked. The eyes are small, black, and round. The hair on the top of the head projects over, and gives to the animal a very peculiar and grotesque physiognomy. Its general colour is a grayish brown; and the hair is long and coarse, covering the body, particularly about the back and thighs, very thickly.

It is a native of South America.

SYNONYMS. *Bradypus tridactylus*. Linn.—Sloth. Edwards.—Leyart. Nieubof.—Haut. Nieremb.—L'Ai. Buffon.—Three-toed Sloth. Penn.—Shaw's Gen. Zool. Pl. 45.—Bew. Quad. 493.

where it remained without food for forty days, its eyes being always fixed on those who looked at it, who were so affected that they could not forbear pitying his dejected state. At length, being taken down, a dog was let loose on it. This dog, the Sloth, after a while, seized in its claws, and held fast until both died of hunger.

In ascending the trees, the Sloth first stretches one of its paws, and fixes its long claw as high as it can reach. It then heavily raises the body, and gradually fixes the other paw; and in this manner continues to climb, every motion being incredibly slow and languid. When the Sloth once gets into a tree, we are told that it will not descend while a leaf or bud is remaining; and it is added, that, in order to save the slow and laborious descent which it would otherwise be obliged to make, it sometimes suffers itself to fall to the ground, its tough skin, and thick coarse hair, sufficiently securing it from injury. Occasionally the Sloths will suspend themselves by their claws from the branches of trees, and, thus hanging, a branch may be cut off, and they will fall with it rather than quit their hold. One that was taken by some person who went out in the expedition under Woodes Rogers, was brought on board one of the vessels, and put down at the lower part of the mizen shrouds. It climbed to the mast-head; occupying two hours in what a monkey would have performed in less than half a minute. It proceeded with a very slow and deliberate pace, as if all its movements had been directed by machinery.

These animals are always most active during the night, at which time they utter their plaintive cry, ascending and descending in perfect tune, through the hexachord, or six successive musical intervals. When the Spaniards first arrived in America, and heard this unusual noise, they fancied they were near some nation, the people of which had been instructed in European music.

When kept in a house the Sloth never rests on the ground, but always climbs upon some post or door to repose. If a pole is held out to it, when on the ground, it will immediately lay hold, and, if this is afterwards fixed upright, will climb to the top, and there firmly adhere.

THE TWO-TOED SLOTH *.

This animal, although heavy and excessively awkward in its motions, has sufficient activity to ascend into and descend from the highest trees, several times in the course of a day. Like the last species, he is chiefly alert in the evenings and during the night, which renders it probable that he sees but imperfectly in the day time, and that his eyes are of little use to him but in the dark.

When the Comte de Buffon bought one of these animals at Amsterdam, it was fed with sea biscuit; and he was told, that, as soon as the winter was over, and the verdure began to appear, it would require nothing but leaves. The creature was consequently supplied with leaves, which he ate freely while they were green and tender; but the moment they began to be dry, shrivelled, or worm-eaten, he refused them. During the three years the Comte de Buffon had him, his common food was bread, apples, roots, and milk.

The most natural situation of this animal, and which he preferred to all others, was suspending himself on the branch of a tree, with his body downwards. He sometimes

* DESCRIPTION. The Two-toed Sloth is considerably larger than the preceding species, and differs from it principally in having only two claws on each of its fore feet.

It is a native of Ceylon and the East Indies.

SYNONYMS. *Bradypus didactylus*. *Linnaeus*.—*L'Anat. Buffon*.—Two-toed Sloth. *Pennant*.—*Shaw's Gen. Zool. Pl. 46*.

even slept is this position, his four claws fastened on the same point, and his body describing the figure of a bow. The strength of his muscles was almost incredible; but it became useless to him when he walked. This formation alone seemed to be the cause of the slowness of the animal; who, besides, had no violent sensation, and did not even recognize the hand that fed him.

OF THE ANT-EATERS IN GENERAL.

The Ant-eaters, as they subsist entirely on insects, have no teeth. Their tongue, which is long, worm-like, and covered with a kind of glutinous moisture, is the only instrument by which they seize their food. Instead of teeth they have, however, certain bones, not unlike teeth, that are situated deep in the mouth, near the entrance of the gullet. The mouths of the whole tribe are lengthened into a somewhat tubular form.

THE GREAT ANT-EATER*.

The food of this very singular animal consists principally of Ants, and these he obtains in the following manner. When he comes to an Ant-hill, he scratches it up with his

* DESCRIPTION. The body of the Great Ant-eater is covered with exceedingly coarse and shaggy hair. Its head is very long and slender, and the mouth but just large enough to admit its tongue, which is cylindrical, nearly two feet in length, and lies folded double within it. The tail is of enormous size, and covered with long, black hair, somewhat like the mane of a horse. The whole animal, from the end of the snout to the tip of the tail, is sometimes eight or nine feet in length.

SYNONYMS. *Myrmecophaga Jubata*. Linn.—*Tamandua guacu*. Marcgrave.—*Tamanoir*. Buffon.—Great Ant-eater. Penn.—Shaw's *Gen. Zool. Pl.* 49.—Bew. *Quadr.* 495.

long claws, and then unfolds his slender tongue, which much resembles an enormously long worm. This being covered over with a clammy matter or saliva, the Ants get upon it in great numbers, and, by drawing it into his mouth, he swallows thousands of them alive; and he repeats the operation till no more are to be found. He also tears up the nests of wood-lice, which he easily discovers; and frequently climbs the trees in quest of these insects, and of wild bees or their honey. But should he meet with little success, in his pursuit of food, he is able to fast for a considerable time, without the smallest inconvenience.

His motions are in general very slow. He, however, swims over great rivers with sufficient ease; and, on these occasions, his tail is always thrown over his back. With this extraordinary member, when asleep, or during hard showers of rain, the animal also covers itself in the manner of a Squirrel; at other times he trails it along, and sweeps the ground.

It is said that these animals are tameable, and that, in a domestic state, they will pick up crumbs of bread, and small pieces of flesh. They are natives of Brazil and Guiana. The females bring forth one young-one at a time, which does not arrive at maturity till it is four years old.

This creature, when on the ground, moves with much apparent awkwardness, always resting on the heel of its long feet; but it is able to climb with great ease. Though destitute of teeth, and generally inclined to shun contention, when it is attacked, and its passions become roused, it is a fierce and dangerous adversary. If it can once get its enemy within the grasp of its fore-feet, it fixes the claws into his sides, and both fall together; and, as it frequently happens, both perish; for the perseverance of the Ant-eater is so obstinate, that it will not extricate itself even from a dead adversary. Such is its strength,

that even the Panthers of America are often unequal to it in combat.

OF THE MANIS TRIBE*.

In their general external appearance these animals greatly resemble the Lizards. Their form, and the scales with which all the upper parts of the body are covered, would induce a casual observer to believe that they were really allied to the reptile tribes. This, however, is by no means the case: they are truly mammiferous animals, bringing forth living offspring, and nourishing them in the same manner as other quadrupeds.

THE LONG-TAILED MANIS†, AND SHORT-TAILED MANIS ‡.

The scales with which the bodies of these extraordinary creatures are covered, are not attached to the skin by their whole under surface, but only by their lower extremity; and thus, like the quills of the Porcupine, are moveable at

* These animals have no teeth. Their mouth is long and tubular, and the tongue cylindrical and extensile. The body is covered on the upper parts with scales, and beneath it is either naked or clad with hair.

† DESCRIPTION. This animal is very long and slender, sometimes measuring nearly five feet in length, from the tip of the nose to the extremity of the tail. All the upper parts of the body and tail are covered with broad, but sharp-pointed scales, of a deep brown colour, with a glossy or polished surface. The under parts are clad with hair. On each of the feet there are four toes.

SYNONYMS. *Manis tetradactyla*. *Linnæus*.—*Le Phantagin*. *Buffon*.—*Phantagen*, in India.—*Shaw's Gen. Zool. Pl. 55*.

‡ DESCRIPTION. The Short-tailed Manis is much thicker in proportion to its length than the last species: the tail also is considerably

pleasure. When exasperated the animals erect them; and when attacked, they roll themselves into a ball, and present to their enemy a surface armed on every side. The scales are sharp at the points, and of a substance so hard that, on collision, they will strike fire like flint.

To escape from their foes by swiftness of foot would be utterly impracticable; and for offensive resistance nature has endowed them with no powers; but when they thus act on the defensive, no animal whatever is able to overcome them. The Tiger and the Panther may tread upon, may roll them about, and attempt to devour them; but all their efforts are vain, and where they expected easy prey, they find only weapons which severely wound them in every attempt to obtain it. Of all the Quadrupeds, without excepting even the Porcupine, the armour of the Manis is the strongest, and at the same time the most offensive.

The mode in which these animals feed, is similar to that of the Ant-eaters. Their tongue, which is long, cylindrical, and covered with a viscous fluid, is the instrument by which their subsistence is derived. They lie down in places frequented by insects; and, extending their tongue upon the ground, the insects are attracted by the moisture, and eagerly run upon it in great numbers. When the animal finds that it is sufficiently covered, he suddenly withdraws it and swallows his prey.

Both of the species are natives of Africa and the East Indies. The Negroes eat their flesh, which is white, and considered by them as delicate food. The scales are used for various purposes.

shorter; and on each of the feet there are five toes. It sometimes grows to the length of six feet and upwards.

SYNONYMS. *Manis pentadactyla*. *Linnaeus*.—*Le Pangolin*. *Buffon*.—*Pangulling*, in Java.—*Quogels*, in Guinea.—*Shaw's Gen. Zool. Pl.* 56.

OF THE ARMADILLO TRIBE*.

Instead of hair, the body of the Armadillo is covered with a kind of plate armour. And as the Manis, in its structure, reminds us of the Lizards, so the shell with which the Armadillo is clad, presents us with at least a distant resemblance of the Tortoises and Turtles. They are inoffensive animals, living in burrows or holes which they form in the ground; and feeding only on roots, fruit, vegetables, and insects. They are natives almost exclusively of the New Continent.

THE THREE-BANDED ARMADILLO†.

When the Armadillo is in danger of being attacked by its enemies, it rolls itself up in the manner of the Hedgehog, withdrawing its head, tail, and legs, and, except the

* These animals are destitute both of cutting and canine teeth; but they have several grinders. They are distinguished from each other by the number of flexible bands of which their shell is composed.

† DESCRIPTION. The Three-banded Armadillo is about twelve inches long, and eight broad, exclusive of the tail, which is two inches in length. The body is almost entirely covered with a shell: the shields on the shoulders and rump consist of five cornered pieces, very regularly arranged; and the three girdles round the body are composed of square or oblong pieces, having a number of scales, of a yellowish white colour, on each. All the pieces of this armour are connected by a membrane, like the articulations in the tail of a Lobster, and slide so easily over each other, as to allow of free motion to the limbs.

SYNONYMS. *Dasyus Tricinctus*. *Linnaeus*.—Tatou, or Armadillo. *Red. exper.*—Tatu apara. *Marcgrave*.—Tata. *Seba*.—Apara. *Kerr*.—*Shaw's Gen. Zool. Pl. 57.*

nose, leaving nothing but the shell in view. In this position it sometimes resembles a large ball, flattened at the sides; and thus defended, it continues till the danger is past, and frequently for a long time afterwards. If the animal happens to be near a precipice, it will sometimes roll itself over; and in this case, says Molina, generally falls to the bottom unhurt.

These creatures root up the earth like swine, in search of food. They live in burrows, which they dig in the ground, and which they seldom quit except during the night. Although they are natives of the hot climates of America, they live in temperate regions. The Comte de Buffon saw one in Languedoc, which was fed in the house, and went about every where without doing any mischief.

They walk quickly, but they can neither leap, run, nor climb into trees; so that they cannot escape those who pursue them. In case of pursuit, they have seldom any resource but to hide themselves in their holes; or, if these are at too great a distance, to dig one before they are overtaken; and such is the strength of their snout, and the claws of their fore feet, that in this operation the Mole is not more expert. In a few moments they are enabled to conceal themselves. Sometimes, however, before they can become quite concealed, they are caught by the tail; and then they resist so powerfully, that the tail often breaks short off and is left in the hands of the pursuers. To avoid this the hunter has recourse to artifice; and, by tickling the animal with a stick, it looses its hold, and suffers itself to be taken without further trouble. When caught, the Armadillo rolls itself up into a ball, and will not again extend itself unless placed near the fire.

These animals are hunted with small dogs, which are trained by the Indians for this purpose. The hunters know when they are concealed in their holes, by the number of flies which then hover round. Their usual mode of

forcing them out is by smoking the burrows, or pouring in water. If they begin to dig, the animal digs also; and, by throwing the earth behind it, so effectually closes up the holes, that smoke cannot penetrate them.

The females are very prolific, breeding at three or four periods of the year, and producing several young ones each time.—The Indians are extremely partial to the flesh of these animals as food; and the shells they apply to various uses. Chiefly, however, they paint them of different colours, and make them into baskets, boxes, and other small utensils.

THE RHINOCEROS TRIBE*.

We now come to a race of animals of huge size and bulk, inhabitants only of tropical climates. They are dull and sluggish in their manners; but in their disposition sufficiently peaceable, except when attacked or provoked. They have on the nose a solid, conical horn, not fixed in the bone; this is never shed, but remains, unless broken off by accident, during life. Their skin is tuberculated and exceedingly hard, but on the under parts of the body sufficiently tender to be cut through with a knife.—The general internal structure of the animals of this tribe corresponds with what is observed in the Horse.

THE SINGLE-HORNED OR COMMON RHINOCEROS†.

The Single-Horned Rhinoceros is not exceeded in size by any land animal except the Elephant, and in strength

* This name is derived from *ῥίς* *ῥίς* nose, and *κερας* a horn.

† DESCRIPTION. The length of the Rhinoceros is usually about twelve feet, and this is also nearly the girth of his body. The skin, which is of a blackish colour, is disposed, about the neck, into large plaits or folds. A fold of the same kind passes from the shoulders to

and power it gives place to none. Its nose is armed with a formidable weapon, a hard and solid horn, sometimes above three feet in length, and eighteen inches in circumference at the base, with which it is able to defend itself against the attacks of every ferocious animal. The Tiger will rather attack the Elephant than the Rhinoceros, which it cannot face without danger of having its bowels torn out.

The body and limbs of the Rhinoceros are defended by a skin so hard as to be impenetrable, except in the belly, by either a knife or spear. It is said, that even to shoot a full-grown Rhinoceros of advanced age, it is necessary to use iron bullets, those of lead having been known to flatten against the skin.

The upper lip of this animal answers, in some measure, the same purpose as the trunk of the Elephant. It protrudes over the lower one in the form of a lengthened tip; and, being extremely pliable, is used in catching hold of the branches of trees and shrubs, and delivering them into its mouth.

The Rhinoceros is generally of a quiet and inoffensive disposition, but when attacked or provoked he becomes extremely dangerous; and he is sometimes subject to paroxysms of fury, which nothing can assuage.

the fore-legs; and another from the hind part of the back to the thighs. It is naked, rough, and covered with a kind of tubercles, or large callous granulations. Between the folds, and under the belly, the skin is soft, and of a light rose-colour. The ears are moderately large, upright, and pointed. The eyes are small, and so situated that the animal can only see what is nearly in a direct line before him.

The Rhinoceros is a native of India, Ceylon, Java, Sumatra, and several parts of Ethiopia.

SYNONYMS. *Rhinoceros unicornis*. *Linnaeus*.—*Rhinoceros*. *Buffon*, *Pennant*, &c.—*Shaw's Gen. Zool. Pl.* 60.—*Bew. Quad. p.* 175.

Dr. Parsons, in the year 1743, published a history of the Rhinoceros, containing a minute description of one that was brought from Bengal into Europe*. He was only two years old, and the expence of his food and journey amounted to near 1000*l*. sterling. He had every day, at three meals, seven pounds of rice, mixed with three pounds of sugar; besides hay and green plants: he also drank large quantities of water. In his disposition he was sufficiently peaceable, readily permitting all parts of his body to be touched. When he was hungry, or was struck by any person, he became mischievous, and nothing would appease him but food.

A Rhinoceros, brought from Atcham, in the dominions of the king of Ava, was exhibited in 1748, at Paris. He was tame, gentle, and even caressing; was fed principally on hay and corn, and was much delighted with sharp or prickly plants, and the thorny branches of trees. The attendants frequently gave him branches that had sharp and strong thorns on them; but he bent and broke them in his mouth without seeming in the least incommoded. It is true they sometimes drew blood from the mouth and tongue: "but that," says Father Le Comte, who gives us the description, "might even render them more palatable, and those little wounds might serve only to cause a sensation similar to that excited by salt, pepper, or mustard, on ours."

As an equivalent for a very dull sight, this animal has a most acute and attentive ear. He has also the power of running with great swiftness; and, from his strength and impenetrable covering, is capable of rushing with resistless violence through woods and obstacles of every kind, the smaller trees bending like twigs as he passes them. In his

* The first that was brought into England was in the year 1684.

general habits and manner of feeding he resembles the Elephant; residing in cool, sequestered spots, near waters, and in shady woods. Like the Hog, he delights in occasionally wallowing in the mire.

The flesh of this animal is an article of food in some parts of Ceylon, Java, and Sumatra. The skin, flesh, hoofs, teeth, and even the dung, are each used medicinally. The horn, when cut through the middle, is said to exhibit on each side the rude figure of a man; the outlines being marked by small white strokes. Many of the Indian princes drink out of cups made of this horn; imagining that, when these hold any poisonous draught, the liquor will ferment till it runs quite over the top. Professor Thunberg, when at the Cape, tried these horns, both wrought into goblets and unwrought, with several sorts of poison, weak as well as strong, but did not observe the least motion or effervescence: when, however, a solution of corrosive sublimate was poured into one of them, there arose indeed a few bubbles, which were produced by the air that had been enclosed in the pores of the horn, and was now disengaged from it. Martial informs us, that the Roman ladies of fashion used these horns in the baths, to hold their essence-bottles and oils. The Javanese make shields of the skin.

The only three animals of this species that have been brought into England during the last half century, were all purchased for the exhibition-rooms at Exeter 'Change. One of them, of which the skin is still preserved, came from Laknaor, in the East Indies, and was brought over in the Melville Castle East Indiaman, as a present to Mr. Dundas. This gentleman, not wishing to have the trouble of keeping him, gave the animal away. Not long afterwards he was purchased by Mr. Pidcock, of Exeter 'Change, for the sum of 700*l*. He arrived in England

in the year 1790, and is supposed to have been at that time about five years old.

He exhibited no symptoms of a ferocious propensity, and would even allow himself to be patted on the back or sides by strangers. His docility was about equal to that of a tolerably tractable Pig; he would obey the orders of his keeper, to walk about the room, and exhibit himself to the numerous spectators who came to visit him. This animal usually ate every day twenty-eight pounds weight of clover, besides about the same weight of ship biscuit, and a vast quantity of greens. His food was invariably seized in his long and projecting upper lip, and by it conveyed into the mouth. He was allowed also five pails of water twice or thrice a day. This was put into a vessel that contained about three pails, which was filled up as the animal drank it; and he never ended his draught till the water was exhausted. He was fond of sweet wines, of which he would often drink three or four bottles in the course of a few hours. His voice was not much unlike the bleating of a calf. It was most commonly exerted when the animal observed any person with fruit or other favourite food in his hand; and, in such cases, it seems to have been a mark of his anxiety to have it given him. During the severe illness which preceded his death, this noise, but in a more melancholy tone, was almost constantly heard, occasioned, doubtless, by the agonies that he underwent.

In the month of October, 1792, as this Rhinoceros was one day rising up very suddenly, he slipped the joint of one of his fore-legs. This accident brought on an inflammation, that, about nine months afterwards, occasioned his death. It is a singular fact, that of the incisions which were made, on the first attempts to recover the animal, through his thick and tough hide, the wounds were invariably found to be healed in the course of twenty-four hours. He died in a caravan at Corsham, near Portsmouth. When the carriage arrived at the latter place, the stench arising

from the body was so offensive, that the mayor was under the necessity of ordering it to be immediately buried. This was accordingly done on South Sea Common. About a fortnight afterwards, during the night, and unknown to any of the people at Portsmouth, it was dug up for the purpose of preserving its skin and some of the most valuable of the bones. The persons present declared, that the stench was so powerful, that it was not without the greatest difficulty they could proceed in their operations. It was plainly perceptible at the distance of more than half a mile.

The second Rhinoceros that was at Exeter 'Change was considerably smaller than this, and was likewise a male. It was brought over about the year 1799, and lived not more than twelve months afterwards. An agent of the Emperor of Germany purchased it of Mr. Pidcock for 1000*l*. It died in a stable-yard in Drury-Lane, after he had been in possession of it about two months.

The third of these animals I saw at Exeter 'Change in the month of October, 1810; and it is still exhibited there*.

The females of this species produce only a single young-one at a birth.

THE TWO-HORNED RHINOCEROS†,

In their habits and manner of feeding, these animals differ but little from the Single-horned Rhinoceros. M. Le Vaillant informs us, that whenever they are at rest they place themselves in the direction of the wind, with their

* March, 1812.

† DESCRIPTION. This species differs from the last, principally in the appearance of its skin; which, instead of vast and regularly marked armour-like folds, has merely a slight wrinkle across his shoulders, and on the hinder parts, with a few fainter wrinkles on the sides; so that, in comparison with the Common Rhinoceros, it ap-

noses towards it, in order to discover by their smell the approach of any enemies. From time to time they move their heads round to look behind them, and to be assured that they are safe on all sides; but they soon return to their former position. When they are irritated, they tear up the ground with their horn; throwing the earth and stones furiously, and to a vast distance, over their heads.

The description given by Mr. Bruce of the habits of the Two-horned Rhinoceros is deserving of particular notice. He informs us that "besides the trees capable of most resistance, there are, in the vast forests within the rains, trees of a softer consistence, and of very succulent quality, which seem to be destined for the principal food of this animal. For the purpose of gaining the highest branches of these, his upper lip is capable of being lengthened out so as to increase his power of laying hold with it, in the same manner as the Elephant does with his trunk. With this lip, and the assistance of his tongue, he pulls down the upper branches, which have most leaves, and these he devours first. Having stripped the tree of its branches, he does not immediately abandon it; but, placing his snout as low in the trunk as he finds his horns will enter, he rips up the body of the tree, and reduces it to thin pieces like so many laths; and when he has thus prepared it, he embraces as much of it as he can in his monstrous jaws, and twists it round with as much ease as an ox would do a root of celery, or any small plant.

"When pursued, and in fear, he moves with astonishing

pears almost smooth. What, however, constitutes the chief distinction, is the nose being furnished with two horns, one of which is smaller than the other, and situated above it. These horns are said to be loose when the animal is in a quiescent state, but to become fixed and immovable when enraged. *Shaw, i. 202.*

SYNONYMS. *Rhinoceros bicornis.* *Linnaeus.*—*Shaw's Gen. Zool. Pl. 61, from Bruce.*—*Bew. Quad. 179.*

swiftness, considering his size, the apparent unwieldiness of his body, his great weight before, and the shortness of his legs. He has a kind of trot, which, after a few minutes, increases in a great proportion, and takes in a great distance; but this is to be understood with a degree of moderation. It is not true that in a plain he beats the Horse in swiftness. I have passed him with ease, and seen many, worse mounted, do the same; and though it is certainly true that a horse can very seldom come up with him, this is owing to his cunning, and not to his swiftness. He makes constantly from wood to wood, and forces himself into the thickest parts of them. The trees that are dead or dry, are broken down, as with a cannon shot, and fall behind him and on his side, in all directions. Others that are more pliable, greener, or fuller of sap, are bent back by his weight, and the velocity of his motions. And after he has passed, restoring themselves like a green branch to their natural position, they often sweep the incautious pursuer and his horse from the ground, and dash them in pieces against the surrounding trees.

“The eyes of the Rhinoceros are very small; he seldom turns his head, and therefore sees nothing but what is before him*. To this he owes his death, and never escapes if there is so much plain as to enable the Horse to get before him. His pride and fury then make him lay aside all thoughts of escaping, but by victory over his enemy. He stands for a moment at bay: then, at a start, runs straight forward at the Horse, like the Wild Boar, which in his manner of action he very much resembles. The Horse easily avoids him by turning short to one side; and this is the fatal instant: the naked man, with the sword, drops

* The account of Mr. Bruce differs, in this particular, from that of M. Le Vaillant, before quoted; which of the two approaches nearest to the truth must be left to the judgment of the reader.

from behind the principal horseman, and, unseen by the Rhinoceros, who is seeking his enemy, the Horse, he gives him a stroke across the tendon of the heel, which renders him incapable of further flight or resistance.

“ In speaking of the great quantity of food necessary to support this enormous mass, we must likewise consider the vast quantity of water which he needs. No country but that of Shangalla, which he possesses, deluged with six months’ rain, and full of large and deep basins, made in the living rock, and shaded by dark woods from evaporation, or watered by large and deep rivers which never fall low or to a state of dryness, can supply the vast draughts of this monstrous creature: but it is not for drinking alone that he frequents wet and marshy places; large, fierce, and strong as he is, he must submit to prepare himself against the weakest of his adversaries. The great consumption he constantly makes of food and water, necessarily confines him to certain limited spaces; for it is not every place that can maintain him: he cannot emigrate or seek his defence among the sands of Atbara.”—His adversary is a Fly (probably of the Linnæan genus *æstrus*) which is bred in the black earth of the marshes. It persecutes him so unremittingly, that it would in a short time subdue him, but for a stratagem which he practises for his preservation. In the night, when the fly is at rest, the Rhinoceros chooses a convenient place, and there rolling in the mud, clothes himself with a kind of case, which defends him against his adversary the following day: the wrinkles and plaits of his skin serve to keep this muddy plaster firm upon him, all but about his hips, shoulders, and legs, where it cracks and falls off, by motion, and leaves him exposed in those parts to the attacks of the Fly. The itching and pain which follow, occasion him to rub himself in those parts against the roughest trees; and this is one cause of the numerous pustules or tubercles that we see upon him.

It is by no means true that the skin of this Rhinoceros, as it has been often represented, is hard or impenetrable like a board. In his wild state he is slain by javelins thrown from the hand, some of which enter his body to a great depth. A musket-shot will go through him, unless interrupted by a bone; and the Shangalla, an Abyssinian tribe, kill him by the clumsiest arrows that ever were used by any people practising that weapon, and cut him to pieces afterwards with the very worst of knives.

In order to afford some idea of the enormous strength of this Rhinoceros, even after being severely wounded, I shall quote Mr. Bruce's account of the hunting of this animal in Abyssinia: "We were on horseback (says this gentleman) by the dawn of day, in search of the Rhinoceroses, many of which we had heard making a very deep groan and cry as the morning approached: several of the Agageers (hunters) then joined us; and after we had searched about an hour in the very thickest part of the wood, one of them rushed out with great violence, crossing the plain towards a wood of canes that was about two miles distant. But though he ran, or rather trotted, with surprising speed, considering his bulk, he was, in a very little time, transfixed with thirty or forty javelins; which so confounded him, that he left his purpose of going to the wood, and ran into a deep hole, ditch, or ravine, a *cul de sac*, without outlet, breaking above a dozen of the javelins as he entered. Here we thought he was caught as in a trap, for he had scarcely room to turn; when a servant, who had a gun, standing directly over him, fired at his head, and the animal fell immediately, to all appearance dead. All those on foot now jumped in with their knives, to cut him up; but they had scarcely begun, when the animal recovered so far as to rise upon his knees: happy then was the man that escaped first; and had not one of the Agageers, who was himself engaged in the ravine, cut the sinew of the hind leg as he was

retreating, there would have been a very sorrowful account of the foot-hunters that day."

It has been often asserted, that the tongue of the Rhinoceros is so hard and rough, as to take away the skin and flesh, wherever it licks any person that has unfortunately fallen a victim to its fury. Dr. Sparrman says, however, that he thrust his hand into the mouth of one that had just been shot, and found the tongue perfectly soft and smooth.—The cavity which contained the brain of one of these huge animals, was only six inches long and four deep; and, being filled with peas, was found to hold barely a quart: while a human skull, measured at the same time, took above two quarts to fill it.

The Hottentots, and even some of the inhabitants of the Cape, set a high value on the dried blood of the Rhinoceros, to which they ascribe great virtues, in the cure of many disorders of the body. The flesh is eatable, but it is very full of sinews.

THE ELEPHANT TRIBE.

These animals have no front teeth in either jaw; but from the upper jaw there proceed two long and stout tusks, which, in a state of nature, are chiefly employed in tearing up trees for food, and as weapons of defence against their enemies. They have a long, cartilaginous, prehensile trunk, which is capable of laying hold even of the most minute substances. Their body is very thinly scattered over with hairs.—No more than *one* species has hitherto been discovered,

THE ELEPHANT *.

There is scarcely any animal in the creation, that has, at different times, occupied so much the attention of mankind

* DESCRIPTION. The Elephant is undoubtedly the largest of all terrestrial animals, arriving sometimes at the height of twelve feet;

as the Elephant. Formed in a very particular manner for the service of man in the hot climates, he is endowed with every requisite to usefulness. He is strong, active, and laborious; and such are his mildness and sagacity, that he is capable of being trained to almost any service that a brute is capable of performing.

Elephants are found wild in the shady woods of Asia and Africa, where they generally live in large troops. They feed on vegetables, on the young shoots of trees, on grain, and fruit. Their incursions are much dreaded in plantations, where they frequently commit the most destructive ravages. These are probably the longest lived of any animals, sometimes arriving at the great age of a hundred, or a hundred and twenty years. This circumstance alone would induce us to suppose that they could not be very prolific, as in such case the country would soon be overstocked, and consequently devastated by them. The females seldom produce more than a single young-one at a birth. This, when first born, is about the size of a large dog; and it does not attain its full growth until sixteen or eighteen years old.

In the structure of the Elephant, the most singular organ

though the more general height seems to be from nine to ten feet. The skin is generally of a deep ash-colour. The tusks are not visible in a young animal, but in a full-grown Elephant they sometimes extend as much as ten feet from the sockets. The tusks of the females are short. The eyes are extremely small, and the ears very large and pendulous. The head is large, the back much arched, the legs extremely thick, and the feet divided into, or rather edged with, five rounded hoofs. The tail is terminated by a few scattered, very thick black hairs. The teats of the females are two, seated at a small distance behind the fore-legs.

SYNONYMS. *Elephas Maximus*. *Linnaeus*.—L'Elephant. *Buffon*.—*Shaw's Gen. Zool*, Pl. 63, 64; the latter from *Buffon*.—*Bew. Quad.* p. 186.

is the trunk or proboscis. This is an extension of the canals of the nose: it is very long, composed of a great number of cartilaginous rings, and is, through its whole length, divided by a continuation of the septum. At the lower end it is furnished with a kind of moveable finger, that seems to divide its aperture into two parts. It is so strong as to be capable of breaking off large branches from trees. Through this the animal smells and breathes; and it is possessed of such exquisite sensibility, that he can pick up with it almost the smallest bodies from the ground. By means of this the Elephant conveys food to his mouth; which is situated so much in the under part of his head, as to seem almost a part of the breast. The sense of smelling he enjoys in the greatest perfection; and when a number of people are standing around him, he will discover food in the pocket of any one present, and take it out by means of his trunk with great dexterity. With this he can untie the knots of ropes, and open and shut gates by turning the keys or pushing back the bolts. It is, in short, as complete an instrument as nature has bestowed on even her most favourite productions.

The disposition of these animals is gentle, and their manners social, for they are seldom seen wandering alone. They generally march in troops, the oldest keeping foremost, and the next in age bringing up the rear. The young and the feeble occupy the middle. The mothers carry their young firmly embraced in their trunks. They do not, however, observe this order, except in perilous marches, when they want to pasture on cultivated fields. In the deserts and forests, they travel with less precaution, but without separating so far as to exceed the possibility of receiving assistance from one another.

The wild Elephants of Ceylon live in troops or families, distinct and separate from all others, and seem to avoid the strange herds with particular care. When a family removes

from place to place, the largest-tusked males put themselves at the head, and if they come to a river, are the first to pass it. On arriving at the opposite bank, they try whether the landing-place is good: if it is, they give a signal with their trunk, on which another division of the old Elephants swim over; the younger then follow, holding one another by locking their trunks together; and the rest of the old ones bring up the rear.

The modes of taking this animal, and rendering it submissive to human authority, merit particular attention. At Tepura, in the East Indies, when the inhabitants are desirous of securing the wild male Elephants, they do it by means of Koomkees, or female Elephants, trained for the purpose. As the hunters know the places where the Elephants come out to feed, they advance towards them in the evening with four Koomkees, the number of which each hunting party consists. When the nights are dark, the objects of pursuit are discovered by the noise they make in cleaning their food, which they do by whisking and striking it against their fore-legs; and in the moon-light nights they may be seen distinctly at some distance.

As soon as the hunters have determined on the animal they mean to secure, three of the Koomkees are conducted silently and slowly, at a little distance from each other, nearly to the place where he is feeding. The Koomkees advance cautiously, feeding as they go along. 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, showing evident marks of his displeasure. This, however, is not often the case: he generally allows them to approach, and sometimes even advances to meet them.

The drivers now conduct two of the females, one on each side, which close themselves gently against his neck and shoulders; the third female then comes up, and places

herself across his tail. In this situation, 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, attended by proper assistants, who immediately get under the belly of the animal at the tail, and put a slight rope round his hind legs. If he takes no notice of this slight confinement, the hunters proceed to tie his legs with a stronger rope; which is passed alternately, by means of a forked stick, and a kind of hook, from one leg to the other, in the form of a figure of 8.—Six or eight of these ropes are generally employed one above another; and they are fastened at their intersections by another rope, that is made to pass perpendicularly up and down. A strong cable, with a running noose, is next put round each hind leg, above the other ropes; and afterwards six or eight other ropes are crossed from leg to leg above the cable. The fixing these ropes usually occupies about twenty minutes, during which time the utmost silence is observed.

When thus secured, the animal is left to himself, the Koomkees retiring to a little distance. In attempting to follow them, he finds his legs tied; and, becoming sensible of the danger of his situation, immediately retreats towards the jungle. The drivers, mounted on the tame Elephants, accompanied by a number of people, who till this time have been kept out of sight, follow him at a little distance; and as soon as he passes near a tree sufficiently stout to hold him, they take a few turns, round the trunk of the tree, with the long cables, which trailed behind him. His progress being thus stopped, he becomes furious, and exerts his utmost efforts to disengage himself. The Koomkees dare not now approach him; and in his fury he falls down on the earth, and tears it up with his tusks. When he has exhausted himself by his exertions, the Koomkees are again brought near and take their former positions. After getting

him nearer the tree, the people carry the ends of the long cables two or three times round it, so as to prevent the possibility of his escape. His fore legs are now tied in the same manner as his hind legs were; and the cables are made fast, one on each side, to trees or stakes driven deep into the earth.

When he has become more settled, and will eat a little food, with which he is supplied as soon as he is taken, the Koomkees 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; the end is carried backward close to his rump, and there fastened, after a couple of turns more have been made round his body. Another rope is next fastened to this, and thence carried under his tail like a crupper, and brought forward and fastened to each of the girths. A strong rope is now 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 him from taking a full step. A couple of large cables, with running nooses, are now put about his neck, there secured, and tied to the ropes on each side. Thus completely hampered, the cables round his neck are made fast to two Koomkees, one on each side.

Every thing being now ready, and a passage cleared from the jungle, all the ropes are taken from his legs, except the strong one round his buttocks, which is still retained for the purpose of confining the motion of his legs. The Koomkees pull him forward; sometimes, however, not without much struggling and violence on his part. When brought to his proper station, and made fast, he is treated with a mixture of severity and gentleness; and generally in a few months becomes tractable, and appears perfectly reconciled to his fate.—It seems somewhat extraordinary, that though the animal uses his

utmost force to disengage himself when taken, and would kill any person coming within his reach, yet he seldom or never attempts to hurt the females that have ensnared him; but, on the contrary, seems (as often as they are brought near, in order that the keepers may adjust his harnessing, or move and slacken those ropes which gall him) pleased, soothed, and consoled by them, as it were, for the loss of his liberty.

The mode of securing a herd of wild Elephants is very different from that adopted in taking a single male, and the process is much more tedious.

When a herd, which generally consists of from forty to a hundred Elephants, is discovered, about five hundred people are employed to surround it. By means of fire and noises, they in the course of some days are able to drive them to the place where they are to be secured. This is called the Kedda. It consists of three enclosures, communicating with each other by means of narrow openings or gateways. The outer one is the largest, the middle generally the next in size, and the third or furthestmost the smallest. When the animals arrive near the first enclosure, (the palisadoes and two gates of which are as much as possible disguised with branches of trees and bamboos stuck in the ground, in order to give them the appearance of a natural jungle,) great difficulty attends the business of getting them in. The leader always suspects some snare, and it is not without the utmost hesitation that he passes; but as soon as he enters, all the rest follow. Fires are now lighted round the greatest part of the enclosure, particularly at the entrance, and the most loud and discordant noises are made for the purpose of urging them on to the next enclosure. The Elephants find themselves entrapped, and discovering no opening except the entrance to the next enclosure, they at length enter it. The gate is in-

stantly shut upon them, fires are lighted, and the same discordant noises made as before, till they have passed through another gateway into the last enclosure, where they are secured in a similar manner. Being now completely surrounded on all sides, and perceiving no outlet through which they can escape, they appear desperate, and in their fury advance frequently to the surrounding ditch, in order to break down the palisade, inflating their trunks, and screaming out aloud : but wherever they make an attack, they are opposed by lighted fires, and by the noise and triumphant shouts of the hunters. The ditch is then filled with water ; and after a while they have recourse to it in order to quench their thirst and cool themselves, which they do by drawing the water into their trunks, and then squirting it over every part of their bodies.

When the Elephants have continued in the enclosure a few days, where they are regularly, though scantily, fed from a scaffold on the outside, the door of the Roomee (an outlet about sixty feet long and very narrow) is opened, and one of the Elephants is enticed to enter by having food thrown before it*. When the animal has advanced far enough to allow it, the gate is shut and well secured on both sides. Finding his retreat now cut off, and the place so narrow that he cannot turn himself, he advances, and exerts his utmost efforts to break down the bars in front of him, running against them, screaming and roaring most violently, and battering them, like a ram, by repeated blows with his head, retreating and advancing with the utmost fury. In his rage he even rises up, and leaps upon the bars with his fore feet, striving to break them down

* In many places this mode is not adopted ; but 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 manner we have mentioned respecting the single male Elephants.

with his weight. When he becomes fatigued with these exertions, ropes are, by degrees, put round him; and he is secured in a manner nearly similar to that adopted in taking the single males; and thus, in succession, they are all secured.

The Elephants are now separated, and each is put under the care of a keeper, who is appointed to attend and instruct him. Under this man there are three or four others, who assist in supplying food and water till the animal becomes sufficiently tractable to feed himself.

In a few days he advances cautiously to his side, and strokes and pats him with his hand, at the same time speaking to him in a soothing voice; and after a little while, the beast begins to know his keeper and obey his commands. By degrees the latter becomes familiar, and at length mounts upon his back from one of the tame Elephants; from hence he gradually increases the intimacy as the animal becomes more tame, till at last he is permitted to seat himself on his neck, from which place he is afterwards to regulate and direct all his motions. In five or six weeks the Elephant becomes obedient to his keeper; his fetters are taken off by degrees; and generally in about six months he will suffer himself to be conducted from place to place, in a manner similarly to those that have been long subdued. Care, however, is always taken not to let him approach his former haunts, lest a recollection of them should induce him to attempt to recover his liberty*.

It has been stated, that the sagacity of the Elephant is so great, and his memory so retentive, that when once he

* See a paper of John Corse, Esq. on the method of catching wild Elephants at Tipura, in the East Indies, inserted in the Asiatic Researches.

has received an injury, and been in bondage and afterwards escaped, it is not possible, by any art, again to entrap him. The following instances, recorded in the Philosophical Transactions for 1799, will prove, however, that this is not the fact:—

“A female Elephant was first taken in the year 1765, by Rajah *Kishun Maunick*, who, about six months afterwards, gave her to *Abdoor Resah*, a man of some rank and consequence in the district. In 1767, the Rajah sent a force against this *Abdoor Resah*, for some refractory conduct, who, in his retreat to the hills, turned the above-mentioned beast loose into the woods, after having used her above two years as a riding Elephant. She was afterwards retaken; but broke loose in a stormy night, and again escaped. In the year 1782, above ten years after her second escape, she was driven by the Elephant-hunters belonging to Mr. Leeke, of Longford-hall, in Shropshire, into the enclosure in which the Elephants are secured; and the day following, when Mr. Leeke went to see the herd that had been taken, this Elephant was pointed out to him by the hunters, who well recollected her. They frequently called to her by name; to which she seemed to pay some attention, by immediately looking towards them when it was repeated; nor did she appear like the wild Elephants, who were constantly running about the enclosure in a rage, but seemed perfectly reconciled to her situation.

“For the space of eighteen days, she never went near enough the outlet to be secured. Mr. Leeke, at length, went himself, when there were only herself, another female, and eight young ones remaining in the enclosure. After the other female had been secured, the hunters were ordered to call on her by name. She immediately came up to the side of the ditch, within the enclosure; and some of the drivers were desired to carry in a plantain tree, the leaves

of which she not only took from their hands with her trunk, but opened her mouth for them to put a leaf into it, which they did, stroking and caressing her, and calling to her by name. One of the trained Elephants was now ordered to be brought to her, and the driver to take her by the ear and order her to lie down. At first she retired to a distance, seeming angry; but when the drivers, who were on foot, called to her, she came immediately, and allowed them to stroke and caress her as before; and, in a few minutes after, permitted the trained Elephants to be familiar. A driver from one of these then fastened a rope round her body, and instantly jumped on her back, which, at the moment, she did not like, but she was soon reconciled to it. A small cord was then placed round her neck, for the driver to put his feet in; who, seating himself on the neck, in the usual manner, drove her about the enclosure, in the same manner as any of the tame Elephants.—After this he ordered her to lie down, which she instantly did; nor did she rise till she was desired. He fed her from his seat, gave her his stick to hold, which she took with her trunk, and put into her mouth, kept, and then returned it as she was directed, and as she had formerly been accustomed to do. In short, she was so obedient, that had there been more wild Elephants in the enclosure, she would have been useful in securing them.

“In June, 1787, a male Elephant, taken the year before, was travelling, in company with some others, towards Chittigong, laden with baggage; and having come upon a Tiger’s track, which Elephants discover readily by the smell, he took fright and ran off to the woods, in spite of all the efforts of his driver. On entering the wood, the driver saved himself by springing from the animal and clinging to the branch of a tree under which he was passing. When the Elephant had got rid of his driver, he soon contrived to shake off his load. As soon as he ran away, a

trained female was dispatched after him, but could not get up in time to prevent his escape.

"Eighteen months after this, when a herd of Elephants had been taken, and had remained several days in the enclosure, till they were enticed into the outlet, there tied, and led out in the usual manner, one of the drivers, viewing a male Elephant very attentively, declared he resembled the one which had run away. This excited the curiosity of every one to go and look at him; but, when any person came near, the animal struck at him with his trunk, and in every respect appeared as wild and outrageous as any of the other Elephants.—An old hunter at length coming up and examining him, declared that he was the very Elephant that had made his escape.

"Confident of this, he boldly rode up to him on a tame Elephant, and ordered him to lie down, pulling him by the ear at the same time. The animal seemed taken by surprise, and instantly obeyed the word of command, uttering a peculiar shrill squeak through his trunk, as he had formerly been known to do; by which he was immediately recognised by every person who was acquainted with this peculiarity."

"Thus we see that this Elephant, for the space of eight or ten days, during which he was in the enclosure, appeared equally wild and fierce with the boldest Elephant then taken; but from the moment he was addressed in a commanding tone, the recollection of his former obedience seemed to rush upon him at once; and, without the least difficulty, he permitted a driver to be seated on his neck, who in a few days made him as tractable as ever.

"A female Elephant, belonging to a gentleman at Calcutta, being ordered from the upper country to Chotygoné, broke loose from her keeper, and was lost in the woods. The excuses which the keeper made were not admitted. It was supposed that he had sold the Elephant; his wife

and family, therefore, were sold for slaves, and he was himself condemned to work upon the roads. About twelve years afterwards this man was ordered into the country, to assist in catching the wild Elephants. The keeper fancied he saw his long-lost Elephant in a group that was before them. He was determined to go up to it; nor could the strongest representations of the danger dissuade him from his purpose. When he approached the creature, she knew him; and, giving him three salutes, by waving her trunk in the air, knelt down and received him on her back. She afterwards assisted in securing the other Elephants, and likewise brought with her three young ones, which she had produced during her absence. The keeper recovered his character; and, as a recompense for his sufferings and intrepidity, had an annuity settled on him for life. This Elephant was afterwards in the possession of Governor Hastings."

These, and other instances that have occurred, clearly evince that Elephants have not the sagacity to avoid a snare into which they have, even more than once, fallen.

The Elephant, when tamed, becomes the most gentle and most obedient of all domestic animals. He is so fond of his keeper, that he caresses him, and anticipates his commands. He soon learns to comprehend signs, and even to understand the expression of sounds. He distinguishes the tones of command, of anger, or of approbation; and regulates his actions accordingly. He never mistakes the voice of his master. He receives his orders with attention, executes them with prudence and eagerness, but without any degree of precipitation; for his movements are always measured, and his character seems to partake of the gravity of his bulk. He easily learns to bend his knees, for the accommodation of those who mount him. His friends he caresses with his trunk; salutes with it such people as are pointed out to him, uses it for raising burthens, and assists in loading

himself. He allows himself to be clothed, and seems to have a pleasure in being covered with gilded harness and brilliant housings. He is employed in drawing chariots, ploughs, and waggons. He draws steadily, and never proves restive, unless insulted with improper chastisement. The man who conducts him generally rides on his neck, and uses an iron rod, hooked at the end, or having there a kind of bodkin, with which he pricks the head, or sides of the ears, in order to urge him forward or to turn him. But words are generally sufficient; especially if the animal has had time to acquire a complete acquaintance with his conductor, and to put entire confidence in him.

The domestic Elephant performs more work than perhaps six horses; but he requires from his master much care, and a great quantity of good victuals. He is generally fed with rice, raw or boiled, and mixed with water. To keep him in full vigour, he is said to require daily a hundred pounds weight of this food, besides fresh herbage to cool him; for he is subject to be over-heated, and must be led to the water twice or thrice a-day for the purpose of bathing. He sucks up water in his trunk, carries it to his mouth, drinks part of it, and, by elevating his trunk, allows the remainder to run over every part of his body. His daily consumption of water, for drink, has been calculated at forty-five gallons.

To give an idea of the labour which he performs, it is sufficient to remark, that all the tuns, sacks, and bales, transported from one place to another in India, are carried by Elephants; that they carry burthens on their bodies, their necks, their tusks,—and even in their mouths, by giving them the end of a rope, which they hold fast with their teeth; that, uniting sagacity to strength, they never break or injure any thing committed to their charge; that, from the banks of the rivers, they put these bundles into boats without wetting them, laying them down gently,

and arranging them where they ought to be placed; that, when disposed in the places where their masters direct, they try with their trunks whether the goods are properly stowed; and, if a tun or a cask rolls, they go, of their own accord, in quest of stones to support and render it firm.

M. Phillipe was witness to the following facts:—He one day went to the river at Goa, near which place a great ship was building. Here was a large area filled with beams for that purpose. Some men tied the ends of heavy beams with a rope, which was handed to an Elephant, who carried it to his mouth, and, after twisting it round his trunk, drew it, without any conductor, to the place where the ship was building. One of the Elephants sometimes drew beams so large, that more than twenty men would have been necessary to move them. But what surprised this gentleman still more, was, that when other beams obstructed the road, he elevated the ends of his own beam, that it might run easily over those which lay in his way. Could the most enlightened man have done more?

At Mahie, on the coast of Malabar, M. Toreen tells us, he had an opportunity of admiring the sagacity of an Elephant. Its master had let it for a certain sum *per day*; and its employment was to carry, with its trunk, timber for a building, out of the river: which business it dispatched very dexterously, under the command of a boy; and afterwards laid the pieces one upon another, in such exact order, that no man could have done it better.

Elephants not only obey the voice of their keeper when present; but some, even in his absence, will perform extraordinary tasks which have been previously explained to them. "I have seen two," says M. D'Obsonville, "occupied in beating down a wall; which their *Cornacs* had desired them to do, and encouraged them by a promise of fruits and brandy. They combined their efforts; and doubling up their trunks, which were guarded from injury

by leather, thrust against the strongest part of the wall; and by reiterated shocks continued their efforts, carefully observing and following with their eyes the effects of the equilibrium: at last, when it was sufficiently loosened, making one violent push, they suddenly drew back together, that they might not be wounded; and the whole came tumbling to the ground."

At a certain season of the year, these animals are seized with a ferocity which renders them totally untractable, and makes them so formidable, that it is often necessary to kill them. But in their ordinary state, the most acute pains will not provoke them to hurt those who have never injured them. An Elephant, rendered furious by the wounds it had received at the battle of Hambour, ran about the field making the most hideous cries. A soldier, notwithstanding the alarms of his comrades, was unable, perhaps on account of his wounds, to fly. The Elephant approached, seemed afraid of trampling him under its feet, took him up with its trunk, placed him gently on his side, and continued its route.

An incident, to which M. le Baron de Lauriston was witness during one of the late wars in the East, forms another proof of the sensibility of the Elephant. This gentleman, from peculiar circumstances, was induced to go to Laknaor, the capital of the soubah or viceroyalty of that name, at a time when an epidemic distemper was making the greatest ravages amongst the inhabitants. The principal road to the palace-gate was covered with the sick and dying, extended on the ground, at the very moment when when the nabob must necessarily pass. It appeared impossible for his Elephant to do otherwise than tread upon and crush many of these poor wretches in his passage, unless the prince would stop till the way could be cleared; but he was in haste, and such tenderness would be unbecoming in a person of his importance. The Elephant,

however, without appearing to slacken his pace, and without having received any command for that purpose, assisted them with his trunk, removed some, set others on their feet, and stepped over the rest with so much address and assiduity, that not one person was wounded. An Asiatic prince and his slaves were deaf to the cries of nature, while the heart of the beast relented: he, more worthy than his rider to elevate his front towards the heavens, heard and obeyed the calls of humanity.

The following instance of the sagacity of these animals, was mentioned to Dr. Darwin, by some gentlemen of undoubted veracity, who had been much conversant with our Eastern settlements. The Elephants that are used to carry the baggage of our armies, are put each under the care of one of the natives of Indostan; and whilst this person and his wife go into the woods to collect leaves and branches of trees for his food, they fix him to the ground by a long chain, and frequently leave a child, yet unable to walk, under his protection; and the intelligent animal not only defends it, but, as it creeps about, when it arrives near the extremity of his chain, he wraps his trunk gently round its body, and brings it again into the centre of his circle.

During one of the wars in India, many Frenchmen had an opportunity of observing one of the Elephants that had received a flesh-wound from a cannon-ball. After having been twice or thrice conducted to the hospital, where he extended himself to be dressed, he afterwards used to go alone. The surgeon did whatever he thought necessary, applying sometimes even fire to the wound; and though the pain made the animal often utter the most plaintive groans, he never expressed any other token than that of gratitude to this person, who by momentary torments endeavoured, and in the end effected, his cure.

In the last war, a young Elephant received a violent wound in its head; the pain of which rendered it so frantic

and ungovernable, that it was found impossible to persuade the animal to have the part dressed. Whenever any one approached, it ran off with fury, and would suffer no person to come within several yards of it. The man who had the care of it, at length hit upon a contrivance for securing it. By a few words and signs, he gave the mother of the animal sufficient intelligence of what was wanted; the sensible creature immediately seized her young one with her trunk, and held it firmly down, though groaning with agony, while the surgeon completely dressed the wound: and she continued to perform this service every day till the animal was perfectly recovered.

In India, Elephants were formerly employed in the launching of ships. One was directed to force a very large vessel into the water; but the work proved superior to his strength. His master, in a sarcastic tone, bid the keeper take away this lazy beast, and bring another. The poor animal instantly repeated his efforts, fractured his skull, and died on the spot.

In the Philosophical Transactions, a story is related of an Elephant having such an attachment for a very young child, that he was never happy but when it was near him. The nurse used, therefore, frequently to take the child in its cradle, and place it between his feet. This he became at length so much accustomed to, that he would never eat his food, except it was present. When the child slept, he used to drive off the flies with his proboscis; and when it cried, he would move the cradle backwards and forwards, and thus rock it again to sleep.

A sentinel belonging to the present menagerie at Paris, was always very careful in requesting the spectators not to give the Elephants any thing to eat. This conduct particularly displeased the female; who beheld him with a very unfavourable eye, and had several times endeavoured to correct his interference, by sprinkling his head with

water from her trunk. One day, when several persons were collected to view these animals, a by-stander offered the female a bit of bread. The sentinel perceived it; but the moment he opened his mouth to give his usual admonition, she, placing herself immediately before him, discharged in his face a considerable stream of water. A general laugh ensued; but the sentinel, having calmly wiped his face, stood a little to one side, and continued as vigilant as before. Soon afterwards, he found himself under the necessity of repeating his admonition to the spectators; but no sooner was this uttered, than the female laid hold of his musquet, twirled it round with her trunk, trod it under her feet, and did not restore it till she had twisted it nearly into the form of a screw.

M. Navarette says, that at Macasar, an Elephant-driver had a cocoa-nut given him, which, out of wantonness, he struck twice against his Elephant's forehead, to break. The day following the animal saw some cocoa-nuts exposed in the street for sale; and taking one of them up with its trunk, beat it about the driver's head, and killed him on the spot. "This comes (says our author) of jesting with Elephants."

An Elephant that was exhibited in France some years ago, seemed to know when it was mocked by any person; and remembered the affront till an opportunity for revenge occurred. A man deceived it, by pretending to throw something into its mouth: the animal gave him such a blow with its trunk, as knocked him down, and broke two of his ribs; after which it trampled on him with its feet, broke one of his legs, and, bending down on its knees, endeavoured to push its tusks into his body; but they luckily ran into the ground on each side of his thigh, without doing him any injury.

This Elephant generally made less use of its strength than its address. With great ease and coolness, it loosened

the buckle of a large double leather strap, with which its leg was fixed; and though the attendants had wrapped the buckle round with a small cord, and tied many knots on it, the creature deliberately loosened the whole, without breaking either the cord or the strap. One night, after disengaging itself in this manner from its strap, it broke up the door of its lodge with such dexterity as not to awaken the keeper. Thence it went into several courts of the menagerie; forcing open doors, and throwing down the walls when the doors were too narrow to let it pass. In this manner it got access to the apartments of other animals; and so terrified them, that they fled into the most retired corners of the enclosure.

“I have frequently remarked (says Terry, in his *Voyage to the East Indies*,) that the Elephant performs many actions which would seem almost the immediate effect of reason. He does every thing his master commands. If he is directed to terrify any person, he runs upon him with every appearance of fury, and, when he comes near, stops short without doing him the least injury. When the master chooses to affront any one, he tells the Elephant; who collects water and mud with his trunk, and squirts it upon the object pointed out to him.”

That Elephants are susceptible of the warmest attachment to each other, the following account, extracted from a late French journal, will sufficiently prove. Two Ceylonese Elephants, a male and a female, each about two years and a half old, were, in 1786, brought into Holland, a present to the Stadtholder from the Dutch East India Company. They had been separated, in order to be conveyed from the Hague to Paris; where, in the Museum of Natural History, a spacious hall was prepared for their reception. This was divided into two apartments, which had a communication by means of a large door resembling a portcullis. The enclosure round these apartments con-

sisted of very strong wooden rails. The morning after their arrival, they were conveyed to this habitation. The male was first brought. He entered the apartment with suspicion, reconnoitred the place, and then examined each bar separately with his trunk, and tried their solidity by shaking them. He attempted to turn the large screws on the outside, which held them together, but was not able. When he arrived at the portcullis, which separated the apartments, he observed that it was fastened only by a perpendicular iron bar. This he raised with his trunk, then pushed up the door, and entered the second apartment, where he received his breakfast.—These two animals had been parted (but with the utmost difficulty) for the convenience of carriage, and had not seen each other for some months; and the joy they experienced, on meeting again, after so long a separation, is scarcely to be expressed. They immediately rushed towards each other, and sent forth cries of joy so animated and loud as to shake the whole hall. They breathed also through their trunks with such violence, that the blast resembled an impetuous gust of wind. The joy of the female was the most lively. She expressed it by quickly flapping her ears, which she made to move with astonishing velocity, and drew her trunk over the body of the male with the utmost tenderness. She particularly applied it to his ear, where she kept it a long time; and, after having drawn it over his whole body, often moved it affectionately towards her own mouth. The male did the same over the body of the female, but his joy was more steady. He seemed, however, to express it by his tears, which fell from his eyes in abundance. Since this time they have occupied the same apartment; and their mutual tenderness, and natural affection, have excited the admiration, and even the esteem, of all who have visited them.

These two Elephants consumed every day a hundred

pounds weight of hay, and eighteen pounds of bread, besides several bunches of carrots, and a great quantity of potatoes. During summer they drank about thirty pails of water in the day.—On their arrival in Holland, they were conveyed in a vessel, up the river Waal, to Nimeguen, whence they were driven on foot to Loo. The attendants had much difficulty in inducing them to cross the bridge at Arnheim. The animals had fasted for several hours, and a quantity of food was placed for them on the opposite side of the bridge. Still, however, some time elapsed before they would venture themselves upon it; and at last they would not make any step without first carefully examining the planks, to see that they were firm. During the time they were kept at Loo they were perfectly tame, and were suffered to range at liberty. They would sometimes even come into the room at the dinner hour, and take food from the company. After the conquest of Holland, from the cruelty with which they were treated by many of the spectators who crowded to visit them, they, however, lost much of their gentleness; and their subsequent confinement in the cages in which they were conveyed to Paris, even rendered them, in some degree, ferocious towards spectators.

Elephants are said to be kept in many parts of India, more for show and grandeur than for use. And their keeping is attended with great expense; for they devour vast quantities of provision, and must sometimes be regaled with a plentiful repast of cinnamon, of which they are exceedingly fond. It is said to be no uncommon thing for a nabob, if he wishes to ruin a private gentleman, to make him a present of an Elephant; which he is afterwards obliged to maintain at a greater expense than he can afford. By parting with it, he would certainly fall under the displeasure of the grandee; besides forfeiting all the

honour which his countrymen think is conferred upon him by so respectable a present.

In the Island of Ceylon the general value of an Elephant is about fifty pounds sterling. But if there be any blemish; if, for instance, its tail has been plucked off, one of its ears slit, or it has suffered any other kind of damage, considerable deductions are made. And, as it is very unusual to find an Elephant free from all these defects, those that are so, are commonly sold at from one to two hundred pounds each. They are taken to market at certain stated periods; and generally sold, a great number together, by auction. It is customary for two or more persons to purchase conjointly, fifty, sixty, or a hundred Elephants, which they afterwards dispose of in separate lots, with great profit.

Elephants are said to be extremely susceptible of the power of music. Suetonius informs us, that the emperor Domitian had a troop of Elephants disciplined to dance to the sound of music; and that one of them, who had been beaten for not having his lesson perfect, was observed, the night afterwards, in a meadow, practising it by himself!

At Paris some curious experiments have been lately made on the power of music over the sensibility of the Elephant. A band of music went to play in a gallery extending round the upper part of the stalls in which were kept two Elephants, distinguished by the names of *Margaret* and *Hans*. A perfect silence was procured. Some provisions of which they were fond, were given them to engage their attention; and the musicians began to play. The music no sooner struck their ears, than they ceased from eating, and turned in surprise to observe whence the sounds proceeded. At sight of the gallery, the orchestra, and the assembled spectators, they discovered considerable alarm, as though they imagined there was some design

against their safety. But the music soon overpowered their fears, and all other emotions became completely absorbed in their attention to it. Music of a bold and wild expression excited in them turbulent agitations, expressive either of violent joy, or of rising fury. A soft air, performed on the bassoon, evidently soothed them to gentle and tender emotions. A gay and lively air moved them, especially the female, to demonstrations of highly sportive sensibility. Other variations of the music produced corresponding changes in the emotions of the Elephants.

Some of the Indians who believe in transmigration of souls, are persuaded that a body so majestic as that of the Elephant, must be animated with the soul of a great man, or a king. In many of the eastern countries, the white Elephants are regarded as the living *manes* of the Indian emperors. Each of these animals has a palace, a number of domestics, and magnificent trappings; and eats out of golden vessels, filled with the choicest food. They are absolved from all labour and servitude. The emperor is the only person before whom they bow the knee, and their salute is returned by the monarch.—When the king of Pegu walks abroad, four white Elephants, adorned with precious stones and ornaments of gold, march before him; and when he gives audience, these four Elephants are presented to him, who do him reverence by raising their trunks, opening their mouths, making three distinct cries, and then kneeling. This ended, they are led back to their stable, and there each of them is fed in large golden vessels. They are twice a-day washed with water, taken from a silver vessel. During the time of their being dressed in this manner, they are under a canopy supported by eight domestics, in order to defend them from the heat of the sun. In going to the vessels which contain their food and water, they are preceded by three trumpets, and march with great majesty.

Such are the accounts, collected through a tolerably wide range of authorities, which I have been enabled to give, of the disposition and manners of this useful and most intelligent of all animals. These, in a few instances, may perhaps have been exaggerated by the writers, and must consequently be received with some degree of limitation; yet, we have had so many surprising instances of their sagacity, related on unquestionable authority, that, however wonderful these may seem, it would not be right to entirely discredit any of them, without direct proof of their untruth. The authorities for the whole are such as have been received by different respectable and observing men, who, with both the powers and ability of inquiring into them, seem to have entertained no doubts whatever of their validity.

Our account of this extraordinary animal cannot be better closed than with the following expressive lines, finely descriptive of his native state :

Peaceful beneath primeval trees, that cast
Their ample shade o'er Niger's yellow stream,
And where the Ganges rolls his sacred wave;
Or mid the central depth of black'ning woods,
High rais'd in solemn theatre around;
Leans the huge Elephant, wisest of brutes.
O truly wise! with gentle might endow'd;
Though powerful, not destructive! Here he sees
Revolving ages sweep the changeful earth,
And empires rise and fall; regardless he
Of what the never-resting race of men
Project; thrice happy! could he 'scape their guile,
Who mine, from cruel avarice, his steps;
Or with his tow'ry grandeur swell their state,
The pride of kings! or else his strength pervert,
And bid him range amid the mortal fray,
Astonish'd at the madness of mankind.

THE MORSE, OR MANATI TRIBE*.

The Manati are animals entirely marine. They feed on sea-weeds, corallines, and shell-fish, and are not carnivorous. Their elongated body, declining in bulk from the head gradually to the tail; and their short, fin-like feet, give them some alliance to the fishy tribes. They may indeed be considered as forming one of those steps in nature, by which we are conducted from one great division of the animal world to the other. Though the general residence of all the species is in the sea, yet some of them are perfectly amphibious, and live with equal ease on the land and in water.

THE GREAT MORSE, OR ARCTIC WALRUS†.

When we consider the enormous size and strength of these animals, and that they are furnished with weapons so powerful as the long tusks which project from their upper jaw, it is not without surprise we learn that their general disposition and habits are peaceful and inoffensive. The uses to which their tusks are applied, are the scraping of shell-fish, and other prey, out of the sand, and from the

* These animals are destitute of fore teeth in both jaws. From the upper jaw, however, proceed two great tusks, which point downwards. The grinders have wrinkled surfaces. The lips are doubled. The hind feet are at the extremity of the body, and unite into a kind of fin.

† DESCRIPTION. This is an animal of enormous size, sometimes measuring nearly eighteen feet in length, and ten or twelve feet in circumference. In the upper jaw there are two long tusks, which bend downwards. The head is small, the neck short, and body round. The lips are very thick, and the upper one is cleft into two large rounded lobes, on which there are several thick and semi-

rocks; they are likewise employed in aiding their ascent upon the islands of ice, and as weapons of defence against the attacks of their enemies. If, however, their passions are roused by provocation or attack, these animals are sometimes exceedingly furious and vindictive. When surprised on the ice, the females first provide for the safety of their young ones, by flinging them into the sea, and conveying them to a secure distance; they then return to the place, with great rage, to revenge any injury they have received. They will sometimes attempt to fasten their teeth on the boats, in order to sink them, or will rise under them in great numbers, with the intention of oversetting them, at the same time exhibiting all the marks of rage, roaring in a dreadful manner, and gnashing their teeth with great violence. They are strongly attached to each other, and will make every effort in their power, even to death, to set at liberty an harpooned companion. A wounded Walrus has been known to sink to the bottom, rise suddenly again, and bring up with it multitudes of others, who have united in an attack on the boat from whence the insult came.

These animals always visit the Magdalene Islands, in the Gulf of St. Lawrence, early in the spring. These seem particularly adapted to their wants, abounding in large shell-fish, and affording them a convenient landing. Immediately on their arrival, they crawl up the sloping

transparent bristles. The eyes are very small; and instead of external ears, there are only two small circular orifices. The skin is thick, and scattered over with short, brownish hair. The legs are short; and on each foot there are five toes, connected by webs. The hind feet are considerably broader than the others. The tail is very short.

SYNONYMS. *Trichechus Rosmarus*. Linn.—Sea-horse. Ellis.—Walross. Marten.—Morse, or Walrus.—Smell. Buffon.—Morse. Buffon.—Rosmarus. Johnston.—Arctic Walrus. Penn.—Shaw's Gen. Zool. Pl. 68, 69.—Bew. Quad. 503.

rocks of the coast in great numbers, and, when the weather is fair, frequently remain for many days successively without food; but on the first appearance of rain, they retreat to the water with great precipitation. The inhabitants suffer them to come on shore, and to amuse themselves there for a considerable time, after their arrival, till they acquire some degree of boldness; for, at first landing, they are so timid that they will suffer no one to approach them. In a few weeks they assemble in great numbers. Formerly, when undisturbed by the Americans, their herds have been known to amount to 7 or 8000 and upwards.—At a proper time, the fishermen, taking advantage of a sea wind to prevent the animals from smelling them, endeavour in the night, with the assistance of dogs, to separate those that are farthest advanced from those nearest the water, driving them different ways. This they call making a cut; and it is generally esteemed a very dangerous process, since it is impossible to drive them in any particular direction, and sometimes difficult to avoid being attacked by them. In the darkness of the night, however, many of them lose their knowledge of the direction in which they lie, with respect to the water, so that they stray about, and are killed by the men at leisure; those nearest the shore becoming the first victims. In this manner fifteen or sixteen hundred have been killed at one cut.—They are then skinned, and the coat of fat that surrounds them is taken off, and dissolved into oil. The skin is cut into slices of two or three inches wide, and exported to America for carriage-traces, and to England for glue.

It is said that the Walruses will sometimes attack small boats, through wantonness, and not only throw the people into confusion, but frequently subject them to great danger. In the year 1766, some of the crew of a sloop which sailed to the northward, to trade with the Esquimaux, were attacked in their boat by a great number of these animals;

and, notwithstanding their utmost endeavours to keep them off, one, more daring than the rest, though a small one, got in over the stern, and, after sitting and looking at the men for some time, again plunged into the water to his companions. At that instant another, of enormous size, was getting in over the bow; and, every other means proving ineffectual to prevent such an unwelcome visit, the bowman took up a gun loaded with goose-shot, put the muzzle into the animal's mouth, and shot him dead. He immediately sunk, and was followed by all his companions. The people then made the best of their way to the vessel, and just arrived before the creatures were ready to make their second attack, which in all probability would have been infinitely more dangerous than the first, as they appeared to be highly enraged by the loss of their companion.

The following is captain Cook's description of a herd of Walruses, that were seen floating on a mass of ice off the northern part of the continent of America.—“They lie (says he) in herds, of many hundreds, upon the ice, huddling over one another like swine; and roar or bray so very loud, that in the night, or in foggy weather, they gave us notice of the vicinity of the ice before we could see it. We never found the whole herd asleep, some being always upon the watch. These, on the approach of the boat, would wake those next to them; and the alarm being thus gradually communicated, the whole herd would be awake presently. But they were seldom in a hurry to get away, till after they had been once fired at. They then would tumble over one another into the sea, in the utmost confusion. And if we did not, at the first discharge, kill those we fired at, we generally lost them, though mortally wounded. They did not appear to us to be that dangerous kind of animal which some authors have described; not even when attacked. They are more so in appearance than in reality. Vast numbers of them would follow and come

close up to the boats; but the flash of a musket in the pan, or even the bare pointing of one at them, would send them down in an instant. The female will defend her young to the very last, and at the expense of her own life, whether in the water or upon the ice. Nor will the young one quit the dam, though she be dead; so that, if one is killed, the other is certain prey. The dam, when in the water, holds the young one between her fore-fins."

We are informed by Crantz, that Walruses, when playing about in the water, have been frequently observed to draw sea-fowl beneath the surface, with their long tusks, and, after a little while, to throw them up into the air. As they are not carnivorous animals, but live entirely on marine plants and shell-fish, they do not eat these birds, consequently this can only be done out of mere wantonness and frolic.

These animals appear to have been known to the English so early as the reign of king Alfred, for, in the year 890, Ochter the Norwegian, made a voyage beyond the North Cape of Norway, "for the more commoditie (says Hakluyt) of fishing of *Horse-wales*, which have in their teeth bones of great price and excellence; whereof he brought some on his returne unto that king." Hakluyt further informs us, that at this period the natives of the northern coasts of Europe made cables, some of them sixty ells in length, of the skins of Horse-whales, and Seals.

The tusks of the Walrus, which weigh from ten to thirty pounds each, are used as an inferior sort of ivory; but the animals are sought after principally for the sake of their oil. A very strong and elastic leather, it is said, may be prepared from the skin. The animals frequently weigh from 1500 to 2000 pounds, and produce from one to two barrels of oil each.

THE WHALE-TAILED MORSE, OR MANATI*.

These animals frequent chiefly the seas that lie betwixt America and Kamtschatka, and are seldom seen upon the shore, unless driven there by tempestuous weather. They are always found in herds, the old ones of which keep behind, and drive the young before them, some of them at the same time going along the sides, by way of protection. They live in families near one another, each consisting of a male and female, a half-grown young one, and a new-born cub; and these families frequently unite, so as to form vast droves.

In their manners they are peaceable and harmless, and have the strongest attachment to each other. When one of them is hooked, the whole herd will attempt its rescue. Some will strive to upset the boat by going beneath it; others will fling themselves on the rope of the hook, and press it down in order to break it; and others again will make the utmost efforts to wrench the instrument out of the body of their wounded companion.

In their conjugal affection, if such it may be termed, they

* DESCRIPTION. The length of the whale-tailed Manati is sometimes nearly twenty-eight feet, and the weight as much as eight thousand pounds. The head is small. The lips double; and, near the junction of the jaws, the mouth is filled with white tubular bristles, which are of use to prevent the food from running out of their mouth with the water. The eyes are extremely small, as also are the orifices of the ears. The tail is thick and strong; ending in a black, stiff fin. The skin is thick, hard, and black, and full of inequalities, like the bark of oak; and beneath this there is a thick blubber.

SYNONYMS. *Trichechus borealis*. *Linnaeus*.—Le Grand Lamantin du Kamtschatka. *Buffon*.—Morskuia Korowa, by the Russians.—Whale-tailed Manati. *Pennant*.

are most exemplary. A male, after having used all his endeavours to release his mate, which had been struck, pursued her to the very edge of the water; and no blows that were given could force him away. As long as the deceased female continued in the water, he persisted in his attendance; and even for three days after she was drawn on shore, cut up, and carried away, he was observed to remain in expectation of her return.

These animals, which, like the last species, are eagerly pursued by seamen for the sake of their blubber and skins, are generally caught by means of a harpoon, fastened to a long line. The strongest man in the boat strikes the instrument into the nearest animal. This done, twenty or thirty people on shore seize the rope, and with the greatest difficulty drag the creature on shore. The poor beast makes the strongest resistance, assisted by its faithful companions. It will cling with its feet to the rocks till it leaves the skin behind; and oftentimes great fragments of rock will fly off before it can be landed.

The various species of *fuci*, and other marine plants, constitute the food of this species; and so voracious are they of this food, that, during the time they are eating, they are not disturbed even by the approach of a boat. After their hunger is satiated, they turn upon their backs and fall asleep.

The flesh of these animals is coarser than beef, and does not soon putrefy: that of the young ones is stated to be not much unlike veal.

THE ROUND-TAILED MANATI *.

Sometimes, in their frolicsome moods, these animals are observed to leap to great heights above the surface of the

* DESCRIPTION. The Round-tailed Manati are about six feet in length, and three or four in circumference. They have a short,

water. They chiefly delight in shallow waters near low land, and in places secure from surges, where the tides run gently. Marine plants seem to constitute their principal food.

They are caught by means of harpoons. The Indians go out in small canoes, (with the utmost silence,) carrying a harpoon, fastened to a strong cord of several fathoms in length. When struck, the Manati swims off with the instrument of death in his body; and, when spent with pain and fatigue, rises again to the surface, and is taken. The affection of the parent for her offspring is as conspicuous in this as in the last species. If a young one is with its mother when she is struck by a fisherman, careless of her own sufferings she affectionately takes it under her fins or feet, to protect it from her own fate. But how cruelly do mankind reward them for these tender offices! The young, which will never forsake its dam, even in the greatest distress, is, on these occasions, considered in no other light than as certain prey.

We are told that this species of Manati is often tamed by the native inhabitants of America, and that it delights in music. A governor of Nicaragua is said to have kept one of them in a lake near his house, for six-and-twenty years. The animal was usually fed with bread, and fragments of victuals, in the same manner as fish are fed in a pond. He became so familiar, that, in tameness and docility, he nearly equalled what has been boasted by the ancients, of their Dolphin. The domestics gave him

thick neck, small eyes, and thick lips; are very thick about the shoulders, and taper gradually to the tail, which is broad and round. The skin is thick and hard, and has a few hairs scattered over it.

SYNONYMS. *Trichechus Manatus*. *Linnaeus*.—Lamantin. *Buffon*. *Adanson*.—Sea Cow. *Adanson*.—Round-tailed Manati. *Pennant*.—*Shaw's Gen. Zool. Pl. 69.*

the name of Matto; and, when any of them came at the regular hour to feed him, and called him by his name, he would immediately approach the shore, take food out of their hands, and (though contrary to what is generally said of these creatures) even crawl up to the house to receive it. Here he would play with the servants and children; and, according to Peter Martyr, the writer of the account, has even been known to carry persons across the lake on his back. From circumstances similar to these, some writers have been led to imagine that the Dolphin, and others that the Mermaids and Syrens, of the ancients, were, in reality, no other than this species of Manati.

These animals are found in most of the great rivers of Africa, from Senegal to the Cape of Good Hope; and in abundance on some of the eastern coasts of South America. In the river of Amazons, they are often seen nearly a thousand leagues from its mouth. They are believed to be much more partial to fresh or only brackish water, than to the open sea.

Their flesh, as food, is stated to be very white, sweet, and salubrious. The thicker parts of the skin, cut into slices, and dried, become very tough, and are used for whips. The thinner parts, which are more pliant, serve the Indians as thongs for fastening together the sides of their canoes.

*Sea-Ape Manati**. We are informed by Mr. Steller, that he saw, off the coast of America, a marine animal,

* This animal, though placed by Mr. Pennant among the Manati, seems rather to belong to the Seals. Its head is stated to have been somewhat like that of a Dog, and the ears sharp and upright. The eyes were large, and there were strong whiskers on each lip. The body was round and conoid, the thickest part near the head. The animal was, apparently, destitute of feet.

which he denominates a Sea-Ape. He states, that it was extremely playful, and amused all those who saw it by a number of frolicsome tricks. It sometimes swam on one, and sometimes on the other side of the ship, gazing at it with great admiration. Occasionally it would stand erect, for a considerable time together, with one-third of its body above the water; then dart beneath the ship and appear on the other side, and repeat the same for twenty or thirty times successively. It would frequently rise with a sea-plant in its mouth, not unlike the Bottle-gourd, and toss it up and catch it again, playing with it a thousand antics.

Seræ*.

OF THE SEALS IN GENERAL†.

There is a very close alliance betwixt the Seals and the Manati; most of them having the same kind of elongated body, and fin-like feet. These, as well as the Manati, inhabit the waters, where they swim with great ease. In summer they live much on the shores, but in winter they confine themselves almost entirely to the sea. They are generally stated to be a dirty and inquisitive race of animals; and, though courageous and quarrelsome among themselves, are capable of being rendered tame. They are polygamous, one male being appropriated to many females. Their flesh, fat, and hides, are all of use, both in an economical and commercial view.

THE COMMON SEAL‡.

The dens or habitations, in which these animals most commonly reside, are hollow rocks, or caverns, near the

* Most of the animals belonging to this order have six front teeth, of a somewhat conical shape, both in the upper and under jaw. Next to these are strong and sharp canine-teeth; and the grinders are formed into conical or pointed processes. Their feet are divided into toes, which are armed with sharp hooked claws.

† In their upper jaw the Seals have six parallel and sharp-pointed fore-teeth, the exterior ones of which are the largest; and in the lower jaw four, that are also parallel, distinct, and equal. There is one canine-tooth in each jaw; and five grinders above, and six below, all of which have three knobs or points.

‡ DESCRIPTION. The usual length of these animals is five or six feet. The head is large and round; the neck small and short; and

sea, but out of the reach of the tide. In the summer time they will frequently leave the water, to bask or sleep in the sun on the large stones or shivers of rocks; and this is the opportunity that our countrymen take of shooting them. They are, however, extremely watchful, never says Mr. Pennant, sleeping long without moving. At intervals of not greater than a minute or two, they raise their heads, in order to see that they are not threatened with danger. Nature seems to have given them this precaution, because, being unprovided with auricles or external ears, they consequently are neither able to hear very quick, nor from any great distance.

In their proper depth of water the Seals are very swift and rapid in their motions. They will dive like a shot, and, in a few moments afterwards, rise at a distance of forty or fifty yards. A person of the parish of Sennan, in Cornwall, says Mr. Borlase, saw a Seal in pursuit of a mullet. The Seal turned it to and fro, in deep water, as a greyhound does a hare. The mullet, at last, found it had no way to escape but by running into shoal water: the Seal pursued; and the former, to get more surely out of danger, threw itself on its side, by which means it darted into shallower water than it could have swam in with the depth of its paunch and fins, and thus escaped.

on each side of the mouth there are several strong bristles.—From the shoulders the body tapers to the tail. The eyes are large: there are no external ears; and the tongue is cleft or forked at the end. The legs are very short; and the hinder ones placed so backward, as to be but of little use, except in swimming. The feet are all webbed. The tail is short. The animals vary in colour; their short, thick-set hair being sometimes gray, sometimes brown or blackish, and sometimes even spotted with white or yellow. *Shaw's Gen. Zool.* i. 251.

SYNONYMS. *Phoca vitulina*. Linn.—Seal, or Sea Calf. *Var.*—Phoque. *Buffon*.—*Bingley's Mem. of Brit. Quad.* Pl. 6.

Seals, if taken young, are capable of being tamed; they will follow their master like a dog, and come to him when called by the name that is given to them. Some years ago a young Seal was thus domesticated: It was taken at a little distance from the sea, and was generally kept in a vessel full of salt water; but sometimes was allowed to crawl about the house, and even to approach the fire. Its natural food was regularly procured for it; and it was carried to the sea every day, and thrown in from a boat. It used to swim after the boat, and always allowed itself to be taken back. It lived thus for several weeks; and probably would have lived much longer, had it not been sometimes too roughly used. A Seal that was exhibited in London, in the year 1750, answered to the call of his keeper, and attended to whatever he was commanded to do. He would take food from the man's hand, crawl out of the water, and, when ordered, stretch himself out at full length on the ground. He would thrust out his neck and appear to kiss the keeper, as often as the man pleased; and, when he was directed, would again return into the water.—The following is an interesting communication on this subject from Dr. Hamilton of Ipswich:—"Some time ago, a farmer of Aberdowr, a town on the Fifeshire side of the banks of the Frith of Forth, in going out among the rocks to catch lobsters and crabs, discovered a young Seal, about two feet and a half long, which he brought home. He offered it some pottage and milk, which the animal greedily devoured. It was fed in this manner for three days; when the man's wife, considering it an intruder in her family, would not suffer it to be kept any longer. Taking some men of the town along with him for the purpose, he threw it into the sea; but, notwithstanding all their endeavours, it persisted in returning to them. It was agreed that the tallest of the men should walk into the water as far as he could, and,

having thrown the animal in, they should hide themselves behind a rock at some distance. This was accordingly done; but the affectionate creature returned from the water, and soon discovered them in their hiding-place. The farmer again took it home, where he kept it for some time; but at length growing tired of it, he had it killed for the sake of its skin."

We are informed that Seals delight in thunder-storms; and that, during these times, they will sit on the rocks, and contemplate with apparent pleasure and gratification the convulsion of the elements. The Icelanders entertain respecting these animals, a strange superstition. They believe them to resemble the human species more than any other creature; and that they are the offspring of *Pharaoh* and his host, who were converted into Seals when they were overwhelmed in the *Red Sea*.

The females bring forth two young-ones or more at a birth. These, in northern climates, they deposit in the cavities of the ice; and the male makes a hole through the ice near them, for a speedy communication with the water. Into this they always plunge with their offspring the moment they observe a hunter approach; and at other times they descend into it spontaneously, in search of food. The manner in which the male Seals make these holes is astonishing: neither their teeth nor their paws have any share in the operation. It is performed, says M. Acerbi, solely by their breath. When the females come out of the sea, they bleat *like sheep* for their young: and though they often pass through hundreds of other young ones before they come to their own, yet they will never suffer any of the strangers to suck. About a fortnight after their birth, they are taken out to sea, and instructed in swimming and seeking their food: when they are fatigued, the parent is said to carry them on her back. The Seal-hunters in Caithness

assured Mr. Pennant that their growth was so rapid, that in nine tides (about fifty-four hours) after their birth, they become as active as their parents.

These animals are pursued and killed for the advantage of their skins and oil. The time when this is done is generally in October, or the beginning of November. The hunters, provided with torches and bludgeons, enter the mouths of the caverns about midnight, and row in as far as they can. They then land; and, being properly stationed, begin by making a great noise, which alarms the animals, and brings them down from all parts in a confused hurry, uttering frightful shrieks and cries. In this hazardous employment much care is necessary on the part of the hunters, to avoid the throng, which presses down upon them with great impetuosity, and bears away every thing that opposes its progress; but when the first crowd has passed, they kill great numbers of young ones, which generally straggle behind, by striking them on the nose, in which part a very slight blow soon destroys them.

To the inhabitants of Greenland the different species of Seals are indispensably necessary towards their existence. The sea is to this people what corn-fields are to us; and the Seal-fishery is their most copious harvest. The flesh supplies them with their principal, most palatable, and substantial food. The fat furnishes them with oil for their lamps and fires: they use it also with their food, and barter it for other necessities with the factor. They find the fibres of the sinews better for sewing with than thread or silk. Of the skins of the entrails they make their windows, curtains for their tents, and shirts; and part of the bladders they use in fishing, as buoys or floats to their harpoons. Of the bones they formerly made all those instruments and working-tools that are now supplied to them by the introduction of iron. Even the

blood is not lost; for they boil that, with other ingredients, as soup. Of the skins they form clothing, coverings for their beds, houses, and boats, and thongs and straps of every description.—To be able to pursue and kill Seals, is the height of the Greenlanders' desires and pride; and to this labour, which is in truth an arduous one, they are trained from their childhood.

The hunting of the Seal also sets the courage and enterprise of the Finlander in the strongest possible light. The season for this chase begins when the sea breaks up, and the ice floats in shoals upon the surface. Four or five peasants will go out to sea in one small open boat, and often continue more than a month absent from their families.—Thus do they expose themselves to all the horrors of the northern seas, having only a small fire, which they kindle on a sort of brick hearth, and living on the flesh of the Seals which they kill. The fat and skins are what they bring home. The perils with which these voyagers have to struggle, are almost incredible. They are every instant betwixt masses of ice, which threaten to crush their little bark to atoms. They get upon the floating shoals; and creeping along them, steal cautiously upon the Seal, and kill him as he reposes on the ice.—The following narrative will represent the extreme danger of this employment:—A few years ago two Finlanders set out in a boat together. Having got sight of some Seals on a little floating island, they quitted their boat, and mounted the ice, moving on their hands and knees to get near them without being perceived. They had previously fastened their boat to the little island of ice which they disembarked upon: but while they were busily engaged in the pursuit, a gust of wind tore it away; and meeting with other shoals, it was broken to pieces, and in a few minutes entirely disappeared. The

hunters were aware of their danger only when it was too late. They were now left without help, without any resource, and without even a ray of hope, on their floating island. They remained fourteen days on this frail territory. The heat, which diminished its bulk, and also its prominent surface, rendered their situation more alarming every moment. At last they embraced each other, resolved to plunge together into the sea, and thus end their misery. The fatal resolution was just made, when they discovered a sail. One of them stripped off his shirt, and suspended it on the muzzle of his gun. The signal was observed from the vessel, which was a Whale-fisher. A boat was put out to assist them, and by this providential circumstance they were saved from otherwise inevitable destruction.

The Common Seals are found on most of the rocky shores of Great Britain and Ireland, especially on the northern coasts. They inhabit all the European seas, even to the farthest north; are found considerably within the arctic circle, in the seas both of Europe and Asia, and even upon the shores of Kamtschatka.

Their usual food consists of fish and other marine productions, all of which they eat beneath the water. When they are in the act of devouring fish that abound in oil, the place may be easily remarked by the smoothness of the waves immediately above. The flesh of Seals formerly found a place at the tables of the great in our country; as appears from the bill of fare of that vast feast which Archbishop Nevill gave in the reign of King Edward the Fourth.

The voice of a full-grown Seal is hoarse, and not unlike the barking of a dog: that of the young ones resembles, in some measure, the mewling of a kitten.

THE URSINE SEAL*.

Like the species last described, the Ursine Seals live in families; every male being surrounded by, from eight to fifty females, whom he guards with the utmost jealousy. Each family keeps separate from the others, although they lie by thousands on the shores which they inhabit. The males exhibit great affection towards their young, and equal tyranny towards the females. They are fierce in the protection of the former; and, should any one attempt to carry off their cub, they will stand on the defensive, while the female conveys it away in her mouth. Should she happen to drop it, the male instantly quits his enemy, falls on her, and beats her against the stones till he leaves her for dead. But if the young one is entirely carried off, he melts into the greatest affliction, shedding tears, and exhibiting every mark of sorrow.

Those animals that, through age or impotence, are deserted by the females, withdraw themselves from society, and not only become excessively splenetic, peevish, and quarrelsome, but so much attached to their own stations, as to prefer death to the loss of them. If they perceive another animal approaching them, they are instantly rous-

* DESCRIPTION. The males are about eight feet in length, but the females are much smaller. Their bodies are thick, decreasing somewhat towards the tail. The nose projects like that of a Pug Dog; and the eyes are large and prominent. The fore-legs are about two feet long, and, with the feet, have somewhat the appearance of turtles' fins. The hind legs are rather shorter; and have five toes, separated by a web. The general colour of the hair is black; but that of the old ones is tipped with gray. The females are ash-coloured.

SYNONYMS. *Phoca Ursina*. Linn.—Sea Cat. Grieve.—Ursine Seal. Penn.—Shaw's Gen. Zool. Pl. 72.—Bew. Quad. p. 508.

ed from their indolence, snap at the encroacher, and give him battle. During the fight, they oftentimes insensibly intrude on the station of their neighbour, who then joins in the contest; so that at length the civil discord spreads through the whole shore, attended with hideous growls, their note of war.

This is one of the causes of the disputes which take place among these irritable creatures. But a much more serious cause is, when an attempt is made to seduce away any of their females. A battle is the sure consequence of the insult, and sad indeed is the fate of the vanquished animal; he instantly loses his whole seraglio, who all desert him and attach themselves to the victor.

When only two of the animals are engaged in combat, they rest at intervals, lying down near each other; then, rising both at once, renew the battle. They fight with their heads erect, and turn them aside to avoid the blows. As long as their strength continues equal, they only use their fore-paws; but the moment one of them fails, the other seizes him with his teeth, and throws him upon the ground. The wounds they inflict are very deep, and like the cut of a sabre; and it is said, that in the month of July scarcely one is to be seen that has not some mark of this description. At the conclusion of an engagement, such as are able throw themselves into the sea, in order to wash off the blood.—They are exceedingly tenacious of life, and will sometimes live a fortnight after receiving such wounds as would immediately have destroyed any other animal.

Besides their notes of war, they have several others. When they lie on the shore, and are diverting themselves, they low like a cow. After victory, they make a noise somewhat like the chirping of a cricket; and on a defeat, or after receiving a wound, they mew like a cat.

When they come out of the water, they shake themselves, and smooth their hair with their hind-feet; apply their lips

to those of the females, as if to kiss them; lie down and bask in the sun with their hind legs up, which they wag as a dog does his tail. Sometimes they lie on their back; and sometimes roll themselves up into a ball, and thus fall asleep.—They not unfrequently swim on their back, and so near the surface of the water that their hind feet are quite dry. When they go from the shore into the water, or when they dive, after having breathed, they, in the manner of some other sea animals, whirl themselves round like a wheel. They cut through the waves with great rapidity, frequently swimming at the rate of seven or eight miles an hour.—Their cubs are as sportive as puppies, have mock fights, and tumble one another about on the ground. The male parent looks on with a sort of complacency, parts them, licks and kisses them, and, as it is said, seems to take a greater affection to the victor than to the vanquished.

On Bering's Island these animals are found in such numbers as almost to cover the whole shore; and travellers are sometimes obliged, for their own safety, to leave the sands and level country, and go over the rocks and hills. It is, however, remarkable, that they only frequent that part of the coast which lies towards Kamtschatka.—In the beginning of June they retire to the southward, for the purpose of bringing forth their offspring; and return towards the end of August.—They seldom produce more than a single young-one at a birth. This they continue to nurse for about three months, by the end of which time it has acquired sufficient strength and activity to provide its own sustenance.

THE BOTTLE-NOSED SEAL*.

So great is the quantity of fat, or blubber, contained betwixt the skin and the flesh of these animals, that, in the

* DESCRIPTION. The male of this species measures from fifteen to twenty feet in length; and is distinguished from the female by a

largest of them, it is at least a foot in depth. Consequently, when in motion, they have somewhat the appearance of immense skins filled with oil; the tremulous motion of the blubber being plainly discernible beneath the surface.

They are of a lethargic disposition, and when at rest are not easily disturbed. It is not difficult to kill them; being, in general, from their sluggish and unwieldy motions, incapable either of escaping or resisting. A sailor was, however, one day carelessly employed in skinning a young one that he had just killed, when the female from whom he had taken it came upon him unperceived, and bit him so dreadfully, that he died a little while afterwards.

These animals seem to divide their time almost equally betwixt the land and sea; continuing out during the summer, and coming on shore at the commencement of winter, and residing there all that season. When on shore, they feed on the grass and verdure which grows on the banks of the fresh-water streams; and when not employed in feeding, they sleep in herds, in the most miry places they can find. Like the Ursine Seals, each herd seems to be under the direction of a large male; which the seamen ludicrously style the Bashaw, from the circumstance of his driving away the other males from a number of females, which he appropriates to himself. These Bashaws, however, do not arrive at this envied superiority without many bloody and dreadful contests, of which their numerous scars generally

large snout, projecting five or six inches beyond the extremity of the upper jaw. This snout the animal inflates when he is irritated, giving it thus the appearance of an arched or hooked nose. The skin is thinly covered with a rust-coloured hair. The feet are short, and the hinder ones so webbed as to appear like fins. In the upper jaw there are four front teeth, and in the lower jaw only two.

SYNONYMS. *Phoca leonina*. Linn.—Sea Lion. Anson.—Bottle-nosed Seal. Penn.—Shaw's Gen. Zool. Pl. 73.

bear evidence. Their battles are frequent; and when for the females, they are extremely furious. Some of Lord Anson's party observed, one day, on the island of Juan Fernandez, what they at first took for two animals of a kind different from any they had before seen; but, on a nearer approach, they proved to be two of these Seals, which had gored each other with their teeth till both were completely covered with blood.

It has been remarked, that each herd places at a distance some of the males as sentinels, who never fail to give the alarm if any thing hostile approaches. The noise they make for this purpose is very loud, and may be heard at a considerable distance. Their usual voice is a kind of loud grunting; or sometimes a snorting, like that of horses in full vigour. The females produce two young ones in the winter, which they suckle for some time. These, when first brought forth, are about the size of a full-grown Common Seal.

The Bottle-nosed Seals are usually found in the seas and about the shores of New Zealand, the Island of Juan Fernandez, and the Falkland Islands.

THE LEONINE SEAL*.

Leonine Seals are found in great numbers on the eastern shores of Kamtschatka, usually residing on one part of the coast in winter, and on another in summer. They inhabit chiefly the most rocky situations; and, by

* DESCRIPTION. The Leonine Seal has the head and eyes large. The nose turns up, somewhat like that of a Pug Dog. The ears are conical and erect; and along the neck of the male there is a mane of stiff curled hair. The whole neck is covered with long waved hair, not much unlike that of the Lion. The hair of the other parts of the body is short and red: that of the female yellowish. At a certain

their loud and tremendous roaring, are frequently of use during foggy weather, in the warning they give to sailors of their near approach to danger.

If a human being appears among them, they immediately run off towards the sea; and when attacked or disturbed in their sleep, they appear to be seized with horror: they sigh deeply in their ludicrous attempts to escape, fall into the utmost confusion, tumble down, and tremble so violently, that they are scarcely able to use their limbs. In cases, however, where they have been reduced to an extremity, and have found it impossible to escape without fighting, they have been known to become desperate, and to turn on the assailant with vast noise and fury. But when they find themselves uninjured, and that there is no intention to assail them, they soon overcome their fear of mankind. Steller, when he was on Bering's Island, lived for six days in a hovel that was surrounded by these animals. They were soon reconciled to him, would observe, with great apparent calmness, what he was doing; would lie down near him, and even suffer him to take hold of and play with their cubs.

The Leonine Seals have oftentimes severe disputes for the possession of their females; and Steller had an opportunity of seeing several of these conflicts. He once was witness to a duel between two males which lasted for three days, and in which one of them received above a hundred wounds. The Ursine Seals that were among them never interfered, but always hastened out of the way of their battles.

age the animals become gray. The feet resemble those of the Ursine Seal. The weight of a large male is about 1600 pounds; and these are frequently from 16 to 18 feet long; but the females seldom exceed eight.

SYNONYMS. *Phoca jubata*. *Linnaeus*.—Sea Lion. *Cook*. *Forster*.—Leonine Seal. *Penn.*—*Shaw's Gen. Zool*, Pl. 74.

The females bring forth each a single young-one at a birth. The cubs are not sportive, like most other young animals, but seem stupefied by much sleep. The parents take them into the water, and teach them to swim: and when they are tired, they climb on the back of their dam. It is said, however, that the males frequently push them off again, in order to habituate them to this exercise.

The chase of these animals is esteemed by the Kamtschadales an occupation of the highest honour. When they find one of them asleep, they approach it against the wind; strike a harpoon, fastened to a long cord, into its breast; and run off with the utmost precipitation. The other end of the cord being fastened to a stake, prevents the animal from running entirely away, and they principally effect his destruction by flinging their lances into him, or shooting him with arrows. As soon as he is exhausted, they venture near enough to kill him with their clubs. When one of them is discovered alone on the rocks, they shoot him with poisoned arrows. Immediately he plunges into the sea; but, unable to bear the poignancy of his wounds in the salt water, swims in agony to the shore. If opportunity allows, they transfix him with their lances; if not, they leave him to die of the poison.—Such is the stupidity of these people, that, esteeming it a disgrace to leave any of their game behind, they frequently overload their boats so much, as to sink both their booty and themselves to the bottom. But they disdain the thought of saving themselves at the expense of any part of their prize.

During about two months of the summer the full-grown males abstain almost entirely from eating, and indulge in indolence and sleep. Their voice is not much unlike the deep bellowing of a bull. The young ones bleat like sheep.

THE DOG TRIBE*.

All the animals belonging to this tribe are carnivorous, swift of foot, and well adapted for the chase; but, when urged by necessity, are able to subsist on vegetable food. In a wild state they usually associate in immense packs. These are oftentimes so powerful as to make war with, and overcome many beasts of prey which, individually, are much more strong and ferocious than themselves.

None of the species are able to climb into trees. The females produce from three or four, to eight or ten young-ones, at a litter.

THE COMMON DOG*.

To no animal are mankind so much indebted for services and affection as to the Dog. Among all the various orders of brute creatures, none have hitherto been found so entirely adapted to our use, and even to our protection. There are many countries, both of the old and new continent, in which if man were deprived of this faithfully, he would unsuccessfully resist the foes that surround him, seeking opportunities to destroy his labour, attack his person, and encroach upon his property. His own vigilance, in many situations, could not secure him, on the one hand, against their rapacity, nor on the other

* The generic characters of the Dog are these:—He has six cutting teeth in the upper jaw; those at the sides longer than the intermediate ones, which are lobated. In the under jaw there are also six cutting-teeth, the lateral being lobated. There are four canine-teeth; one on each side, both above and below; and six or seven grinders.

* SYNONYMS. *Canis familiaris*. *Linnaeus*.—*Le Chien*. *Buffon*.—Faithful Dog. *Pennant*.

against their speed. The Dog, more tractable than any other animal, conforms himself to the movements and habits of life of his master. His diligence, his ardour, and his obedience, are inexhaustible; and his disposition is so friendly, that, unlike every other animal, he seems to remember only the benefits he receives. He soon forgets our blows; and instead of discovering resentment while we chastise him, he exposes himself to torture, and even licks the hand from whence it proceeds.

The care of the Dog in directing the steps of the blind, affords an instance of his obedience and fidelity, which is peculiarly deserving of notice. There are few persons who have not seen some of these unfortunate objects thus guided along through the winding streets of a town or city, to the spot where they are to supplicate charity of passengers. In the evening the Dog safely conducts his master back, and receives as the reward of its services, that scanty pittance which wretchedness can bestow.—Mr. Ray, in his Synopsis of Quadrupeds, informs us of a blind beggar who was thus led through the streets of Rome by a middle-sized Dog. This Dog, besides leading his master in such a manner as to protect him from all danger, had learned to distinguish both the streets and houses where he was accustomed to receive alms twice or thrice a week. Whenever the animal came to any one of these streets, he would not leave it till a call had been made at every house where his master was usually successful in his petitions. When the beggar began to ask alms, the Dog lay down to rest; but the man was no sooner served or refused, than the Dog rose spontaneously, and without either order or sign, proceeded to the other houses where the beggar generally received some gratuity. “I observed, (says he,) not without pleasure and surprise, that when a halfpenny was thrown from a window, such were the sagacity and attention of this Dog, that he

went about in quest of it, took it from the ground with his mouth, and put it into the blind man's hat. Even when bread was thrown down, the animal would not taste it, unless he received it from the hand of his master."

It is possible to train these animals in such manner that they may be entrusted to go to market with money, on which occasions they will repair to a known shop, and carry home provisions in safety.—Some years since, a person who lived at the turnpike-house about a mile from Stratford on Avon, had trained a Dog to go to the town for small articles of grocery that he wanted. A note mentioning the things was tied round the Dog's neck, and in the same manner the articles were fastened; and the commodities were always brought safe to his master.

It is recorded of a Dog belonging to a nobleman of the Medici family, that it always attended at its master's table; changed the plates for him; and carried him his wine in a glass placed on a salver, without spilling the smallest drop. It would also hold the stirrup in its teeth while its master was mounting his horse.

The sagacity and attention of the Dog are, indeed, so great, that it is not difficult to teach him to dance, hunt, leap, and exhibit a thousand pleasing dexterities. The dancing dogs at Sadler's Wells were curiously instructed. After storming a fort, and performing various other feats, one of them was brought in as a deserter, was shot, and carried off as dead by his companions. The mode in which a Dog is taught to point out different cards that are placed near him (a common trick) is this.—He is first taught, by repeated trials, to know something by a certain mark; and then to distinguish one ace from another. Food is frequently offered to him on a card he is unacquainted with, after which he is sent to search it out from the pack; and after a little experience he never mistakes.

Profiting by the discovery of receiving food and caresses as a reward for his care, he soon becomes able to know each particular card, which, when it is called for, he brings with an air of gaiety, and without any confusion: and in reality, it is no more surprising to see a Dog distinguish one card from thirty others, than it is to see him distinguish in the street his master's door from those of his neighbours.

Plutarch relates, that, in the theatre of Marcellus, a Dog was exhibited before the Emperor Vespasian, so well instructed as to excel in every kind of dance. He afterwards feigned illness in so natural a manner as to strike the spectators with astonishment: first showing symptoms of pain; then falling down as if dead, and suffering himself to be carried about in that state; afterwards, at the proper time, seeming to revive, as if waking from a profound sleep; and then sporting about, and showing every demonstration of joy.

But of all the educational attainments by which the Dog has been distinguished, that of learning to speak seems to be the most extraordinary. The French academicians, however, make mention of a Dog in Germany, which would call, in an intelligible manner, amongst other things, for tea, coffee, or chocolate. The account is from no less eminent a person than the celebrated Leibnitz, who communicated it to the Royal Academy of France. This Dog was of a middling size, and was the property of a peasant in Saxony. A little boy, the peasant's son, imagined that he perceived in the Dog's voice an indistinct resemblance to certain words; and therefore took it into his head to teach him to speak. For this purpose he spared neither time nor pains with his pupil, who was about three years old when this his learned education commenced; and at length he made such a progress in language, as to be able to arti-

culate so many as thirty words. Leibnitz declares that he himself heard him speak; and the French academicians add, that unless they had received the testimony of so great a man as Leibnitz, they should scarcely have dared to report the circumstance. This wonderful Dog was born at Zeitz in Misnia, in Saxony.

The sensibility ascribed to the faithful Dog of Ulyssus, shows how deeply and how justly mankind have been impressed with the noble character of these dutiful and affectionate creatures, even from the most remote periods of antiquity:

He knew his lord: he knew, and strove to meet;
In vain he strove to crawl and kiss his feet;
Yet—all he could—his tail, his ears, his eyes,
Salute his master, and confess his joys.
Oh, had you seen him vigorous, bold, and young,
Swift as a Stag, and as a Lion strong!
Him no fell savage on the plain withstood,
None 'scap'd him bosom'd in the gloomy wood.
His eye how piercing, and his scent how true
To wind the vapour in the tainted dew!
This Dog, whom fate thus granted to behold
His lord, when twenty tedious years had roll'd,
Takes a last look, and, having seen him, dies—
So clos'd, for ever, faithful Argus' eyes.
Then pity touch'd the mighty master's soul,
And down his cheek a tear unbidden stole.

Dogs are found in a wild state in Congo, Lower Ethiopia, and towards the Cape of Good Hope; in South and North America, New Holland, and several other parts of the world; and the varieties are, perhaps, more numerous of this species, than of any other known animals. The following is an enumeration of those that have been distinctly ascertained.

- | | |
|------------------------------------|---------------------------|
| 1 New Holland Dog. | * 14 Common Greyhound. |
| 2 Pomeranian Dog. | 15 Italian Greyhound. |
| 3 Siberian Dog. | 16 Russian Dog. |
| 4 Iceland Dog. | * 17 Lurcher. |
| * 5 Shepherd's Dog. | 18 Newfoundland Dog. |
| * 6 Water Dog. | * 19 Mastiff. |
| * 7 Spaniel. | * 20 Bull-Dog. |
| * 8 Setter. | * 21 Terrier. |
| * 9 Hound. | * 22 Turnspit. |
| * 10 Bloodhound. | 23 King Charles's Dog. |
| * 11 Pointer. | 24 Maltese Dog. |
| 12 Dalmatian or Spotted Dog. | 25 Naked Dog. |
| * 13 Irish Greyhound, or Wolf Dog. | 26 Pug Dog. |
| | 27 Alco, or Peruvian Dog. |

The Siberian Dog†. The use to which these Dogs are peculiarly applied, is the drawing of sledges over frozen snow, in the various countries where they are found, within the Arctic Circle, and particularly in Siberia and Kamtschatka. These sledges generally carry only a single person, who sits sideways. The number of Dogs usually employed is five: four of them are yoked two and two, and the other acts as leader‡. The reins are fastened, not to the head, but to the collar; and the driver has, therefore, to depend principally on their obedience to his voice. Great care and attention are consequently necessary in training the leader; which, if steady and docile, becomes very valuable; the sum of forty roubles (or ten pounds) being no uncommon price for one of them.

* Those marked with an asterisk are of British origin.

† Chien de Sibérie. *Buffon*.—Greenland Dog. *Bew. Quad.* p. 331.

‡ In carrying baggage, or heavy burthens, the number of Dogs employed is seldom less than ten.

The cry of *tagtag, tagtag*, turns him to the right; and *hougha, hougha*, to the left. The intelligent animal immediately understands the words, and gives to his companions the example of obedience. *Ah, ah*, stops the Dogs; and *ha*, makes them set off.

The charioteer carries in his hand a crooked stick, which answers the purpose both of whip and reins. Iron rings are suspended at one end of this stick, by way of ornament, and to encourage the Dogs by their noise; for they are frequently jingled for that purpose. If the Dogs are well trained, it is not necessary for the rider to exercise his voice: if he strikes the ice with his stick, they will go to the left; if he strikes the legs of the sledge, they will go to the right; and when he wishes them to stop, he has only to place the stick between the snow and the front of the sledge. When they are inattentive to their duty, the driver chastises them, by throwing this stick at them. The dexterity of the charioteers, in picking it up again, is very remarkable, and is the most difficult manœuvre in this exercise: nor is it indeed surprising that they should be skillful in a practice, in which they are so materially interested; for the moment the Dogs find that the driver has lost his stick, unless the leader is both steady and resolute, they set off at full speed, and never stop till either their strength is exhausted, or till the carriage is overturned and dashed to pieces, or hurried down a precipice; when all are buried in the snow.

The manner in which the animals are generally treated, seems but ill calculated for securing their attachment. During the winter they are fed sparingly with putrid fish; and in summer are turned loose, to shift for themselves, till the return of the severe season renders it necessary to the master's interest that they should be taken again into custody, and brought once more to their state of toil and slavery. When yoking to the sledge, they utter the most

dismal howlings; but, when every thing is prepared, a kind of cheerful yelping succeeds, which ceases the instant they begin their journey.

These animals have been known to perform, in three days and a half, a journey of almost two hundred and seventy miles; and Horses are perhaps not more useful to Europeans, than these Dogs are to the inhabitants of the frozen and cheerless regions of the North. When, during the most severe storm, their master cannot see the path, nor even keep his eyes open, they seldom miss their way: whenever they do this, they go from one side to the other, till, by their smell, they regain it; and when in the midst of a long journey, as it often happens, it is found absolutely impossible to travel any farther, the Dogs, lying round their master, will keep him warm, and defend him from all danger. They also foretel an approaching storm, by stopping and scraping the snow with their feet; in which case it is always advisable, without delay, to look out for some village or other place of safety.

The Spaniel *. It is not alone in the sports of the field that the Spaniel is of use to mankind. His fidelity and attachment to those from whom he is accustomed to receive attentions, have been celebrated in almost all ages. Of these, there has perhaps been received no instance more satisfactory than the following.

Old Daniel, gamekeeper to the Rev. Mr. Corsellis, had reared a Spaniel, which became so fond of him as to be his constant attendant both by night and day. Wherever the gamekeeper appeared, *Dash* was never far distant; and in his nocturnal excursions to detect poachers, this Dog was of infinite use to him. At these times the Dog altogether

* *Bingley's Mem of Brit. Quad. Pl. No. 9, Var. 3.*

neglected the game; and many poachers were detected and caught in consequence of his sagacity.

During the last stage of a consumption, which carried his master to the grave, Dash unwearily attended the foot of his bed; and when he died, the dog would not quit the body, but lay upon the bed by its side. It was with difficulty he was tempted to eat any food; and although after the funeral he was taken to the house of Mr. Corsellis, and caressed with all the tenderness which so fond an attachment naturally excited, he took every opportunity to steal back to the room in the cottage where the gamekeeper breathed his last, and where he would remain for hours. From thence, for fourteen days, he constantly visited the grave; at the end of which time he died, notwithstanding all the kindnesses and attention that were shown him.

The Hound *. The following anecdotes afford a strong proof of the wonderful spirit of the Hound, in supporting a continuance of exertion.—Many years since, a very large stag was turned out of Whinfield Park, in the county of Westmorland; and was pursued by the Hounds, till, by fatigue or accident, the whole pack was thrown out, except two staunch and favourite Dogs, which continued the 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 immediately expired. One of the Hounds pursued him to the wall; but, being unable to get over, lay down, and almost immediately expired: the other was also found dead at a little distance.

The length of the chase is uncertain: but, as they were seen at Red-kirks, near Annan in Scotland, (distant, by the post-road, about forty-six miles,) it is conjectured that the circuitous and uneven course they might be supposed

* *Bingley's Mem. of Brit. Quad. Pl. No. 9, Fur. 6.*

to take, would not be less than *one hundred and twenty miles!*

To commemorate this fact, the horns of the Stag, which were the largest ever seen in that part of the country, were placed on a tree of enormous size in the park, (afterwards called Hart-horn tree.)—The horns have been since removed, and are now at Julian's-bower, in the same county.

In the year 1795, in Cambridgeshire, on two Foxes being found, the Hounds divided, and fifteen couple and a half (which ran one of the foxes,) in an hour and three quarters' chase, are supposed to have run nearly thirty miles.

*The Blood-hound**. With our ancestors the Blood-hound was an animal in great request; and as he was remarkable for the fineness of his scent, he was frequently employed in recovering game that had escaped wounded from the hunter. He would follow, with great certainty, the footsteps of a man to a considerable distance: and in barbarous and uncivilized times, when a thief or murderer had fled, this useful creature would trace him through the thickest and most secret coverts; nor would he cease his pursuit till he 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, that were much infested by robbers and murderers; and a tax was laid on the inhabitants, for keeping and maintaining a certain number of these animals. But as the arm of justice is now

* DESCRIPTION. Bloodhounds are tall, most beautifully formed animals, and usually of a reddish or brown colour.—*Bingley's Mem. of Brit. Quad. Pl. No. 9, Var. 7.*

extended over every part of the country, and there are no secret recesses where villany can lie concealed, their services are become no longer necessary.

Some few of these Dogs are yet kept in the northern parts of the kingdom, and in the lodges of the royal forests. They are used in pursuit of Deer that have been previously wounded; and are also sometimes employed in discovering Deer-stealers, whom they infallibly trace by the blood that issues from the wounds of their victims.

A very extraordinary instance of this occurred in the New Forest, in the year 1810. A person, in getting over a stile into a field near the forest, remarked that there was blood upon it. It almost immediately occurred to his recollection that some deer had been killed, and several sheep stolen in the neighbourhood; and that this might possibly be the blood of one that had been killed in the preceding night. The man went to the nearest lodge to give information; but the keeper being from home, he was under the necessity of going to Rhinefield lodge, which was at a considerable distance. Toomer, the under keeper, went with him from thence, accompanied by a Blood-hound. The dog, being brought to the spot, was laid on the scent; and, after following for about a mile, the track which the depredator had taken, came at last to a heap of furze faggots belonging to the family of a cottager. The woman of the house attempted to drive the dog away, but was prevented; and, on the faggots being removed, a hole was discovered in the ground, which contained the body of a sheep that had been recently killed, and also a considerable quantity of salted meat. The circumstance which renders this account the more remarkable is, that the dog was not brought to the scent until more than sixteen hours after the man had carried away the sheep.

Another strong instance of the acuteness of scent in these dogs, is related by the Hon. Robert Boyle. In order

to make trial whether a young Blood-hound was well instructed, he says, that a person of quality caused one of his servants to walk to a town four miles distant, and afterwards to a market-town three miles from thence. The Dog, without seeing the man he was to pursue, followed him by the scent to the above-mentioned places, notwithstanding the multitude of market-people that went along the same road, and of travellers that had occasion to cross it; and when the Blood-hound came to the chief market-town, he passed through the streets without taking notice of any of the people there; and ceased not till he had gone to the house where the man he sought had rested himself, and where he found him in an upper room, to the wonder, astonishment, and admiration of all those who had accompanied him in this pursuit.

Somerville has finely described the mode in which these animals pursue the nightly spoiler; and the almost unerring certainty with which they discover him:—

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 untried,
Till, conscious of the recent stains, his heart
Beats quick; his snuffling nose, his active tail,
Attest his joy: then, with deep-opening 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 reasonings: o'er the wat'ry ford,
Dry sandy heaths, and stony barren hills;
O'er beaten paths, with men and beast 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!

The Newfoundland Dog. The great strength and docility of these dogs render them extremely useful to the inhabitants of several parts of the island of Newfoundland settlers, who employ them in bringing down wood, on sledges, from the interior of the country to the sea-coast. Four of them yoked to a sledge are able to draw three hundred-weight of wood, with apparent ease, for several miles. Their docility is as material to their owners as their strength; for they frequently perform these services without a driver. As soon as they are relieved of their load at the proper place, they return in the same order to the woods from whence they were dispatched, where their labours are commonly rewarded with a meal of dried fish.

In many places about Quebec, Professor Kalm saw dogs employed to fetch water from the rivers. He saw two great dogs one day yoked to a cart. They had neat harness like horses, and bits in their mouths. In the cart was a barrel. The dogs were directed by a boy, who ran behind the cart, and as soon as they came to the river, they jumped in of their own accord. When the barrel was filled, the dogs drew their burthen up the hill again to the house they came from. During his stay at Quebec, he frequently saw dogs employed in this manner. The boys that attend them have great whips, with which they occasionally strike them to make them go on. Kalm saw them also employed in drawing wood; and, in winter, it is customary in Canada for travellers to yoke dogs to sledges that are made to hold their clothes, provisions, and other necessaries. A middle-sized dog is able to draw a single person when the road is good. Formerly, before horses came much into use, most of the land carriage of Canada was performed by dogs.

These animals are web-footed, and can swim extremely fast, and with great ease.—Their extraordinary sagacity and attachment render them, in particular situations, highly valuable.

In the summer of 1792, a gentleman went to Portsmouth for the benefit of sea-bathing. He was conducted, in one of the machines, into the water; but being unacquainted with the steepness of the shore, and no swimmer, he found himself, the instant he quitted the machine, nearly out of his depth. The state of alarm into which he was thrown, increased his danger; and, unnoticed by the person who attended the machine, he would unavoidably have been drowned, had not a large Newfoundland Dog, which by accident was standing on the shore and observed his distress, plunged in to his assistance. The Dog seized him by the hair, and conducted him safely to land. The gentleman afterwards purchased the Dog at a high price; and preserved him as a treasure of equal value with his whole fortune.

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 attempted to take from him his prize. The sagacious animal, as if sensible of the importance of the charge, which, in all probability, was delivered to 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 all the things that came from the wrecked vessel, seizing them, and endeavouring to bring them to land.

A gentleman, walking by the side of the river Tyne, observed, on the opposite side, that a child had fallen into the water: he pointed out the object to his Dog, which immediately jumped in, swam over, and, catching hold of the child with his mouth, landed it safely on the shore.

*The Mastiff**. Mastiffs are peculiar to our country, where they are principally of use as watch-dogs; a duty which they discharge not only with great fidelity, but frequently with considerable judgment. Some of them will suffer a stranger to come into the enclosure they are appointed to guard, and will go peaceably along with him through every part of it, so long as he continues to touch nothing; but the moment he attempts to lay hold of any of the goods, or endeavours to leave the place, the animal informs him, first by gentle growling, or, if that is ineffectual, by harsher means, that he must neither do mischief nor go away. He seldom uses violence unless resisted; and even in this case he will sometimes seize the person, throw him down, and hold him there for hours, or until relieved, without biting him.

A most extraordinary instance of memory in a Mastiff is related by M. D'Obsonville. This Dog, which he had brought up in India from two months old, accompanied him and a friend from Pondicherry to Benglour, a distance of more than three hundred leagues. "Our journey (he continues) occupied nearly three weeks; and we had to traverse plains and mountains, and to ford rivers, and go along several by-paths. The animal, which had certainly never been in that country before, lost us at Benglour, and immediately returned to Pondicherry. He went directly to the house of M. Beylier, then commandant of artillery, my friend, and with whom I had generally lived. Now the difficulty is, not so much to know how the Dog subsisted on the road, (for he was very strong, and able to procure himself food,) but how he should so well have found his way, after an interval of more than a month! This was an effort of memory greatly superior to that which the human race is capable of exerting."

* *Bingley's Mem. of Brit. Quad. Pl. No. 9. Var. 10.*

The Mastiff is an excessively bold and courageous animal. Stow relates an instance of a contest between three Mastiffs and a Lion, in the presence of King James the First. One of the Dogs being put into the den, was soon disabled by the Lion, which took him by the head and neck, and dragged him about. Another Dog was then let loose, and was 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. The Lion, exhausted by the conflict, refused to renew the engagement; but, taking a sudden leap over the Dogs, fled for safety into the interior part of his den.

This animal, as if conscious of his superior strength, has been known to chastise, with great dignity, the impertinence of an inferior.—A large Mastiff, belonging to the late M. Ridley, Esq. of Heaton near Newcastle, being frequently molested by a Mongrel, and teased by its continual barking, at last took it up in its mouth by the back, and with great composure dropped it over the quay into the river, without doing any further injury to an enemy so contemptible.

The Bull-Dog *. When its energies are completely roused, this is doubtless one of the fiercest, and at the same time one of the most courageous, of all animals. His valour in attacking a Bull is well known. His fury in seizing, and his invincible obstinacy in maintaining his hold, are truly astonishing. Some years ago, at a Bull-baiting in the North of England, when that barbarous custom was more prevalent than it is at present, a young man, confident of the courage of his Dog, laid some trifling wagers that he would, at separate times, even cut off all the ani-

* *Bingley's Mem. of Brit. Quad. Pl. No. 9, Var. 11.*


mal's feet; and that, after every successive amputation, he would attack the Bull. The cruel, unmanly, and detestable experiment was tried; and the Dog, apparently inattentive to the injury he had received, continued to seize the Bull with the same eagerness as before.

The Terrier *. There are few animals endowed with more obstinate courage than the Terrier. To the smaller quadrupeds, such as Rats, Mice, Stoats, and some others, he seems to be the natural enemy, attacking them furiously whenever and wherever he happens to see them. He is not afraid even of the Badger, and though sometimes roughly used by that animal, will combat him with determined fortitude.

An anecdote related by Mr. Hope, and well authenticated by other persons, shows also that this animal is both capable of resentment when injured, and of great contrivance to accomplish it. A gentleman of Whitmore, in Staffordshire, used to go twice a-year to London; and, being fond of exercise, generally performed the journey on horseback, accompanied, most part of the way, by a faithful little Terrier Dog, which, lest he might lose it in London, he always left to the care of Mrs. Langford, his landlady at St. Alban's; and on his return he was sure to find his little companion well taken care of. The gentleman calling one time, as usual, for his Dog, Mrs. Langford appeared before him with a woeful countenance:—"Alas! Sir, your Terrier is lost! Our great House-dog and he had a quarrel; and the poor Terrier was so worried and bit before we could part them, that I thought he could never have got the better of it. He, however, crawled out of the yard, and no one saw him for almost a week. He then returned, and brought with him another Dog, bigger by far

* *Bingley's Mem. of Brit. Quad. Pl. No. 9, Var. 12.*

than ours; and they both together fell on our great Dog, and bit him so unmercifully, that he has scarcely since been able to go about the yard, or to eat his meat. Your Dog and his companion then disappeared, and have never since been seen at St. Alban's."—The gentleman endeavoured to reconcile himself to the loss. On his arrival at Whitmore, he found his Terrier; and, on inquiring into the circumstances, was informed that he had been at Whitmore and had coaxed away the great Dog, who it seems had, in consequence, followed him to St. Alban's, and completely avenged his injury*.



Additional Anecdotes respecting Dogs.

A grocer in Edinburgh had a Dog, which for some time amused and astonished the people in the neighbourhood. A man who went through the streets ringing a bell and selling penny pies, happened one day to treat this Dog with a pie. The next time he heard the pieman's bell, he ran to him with impetuosity, seized him by the coat, and would not suffer him to pass. The pieman, who understood what the animal wanted, showed him a penny, and pointed to his master, who stood at the street-door and saw what was going on. The Dog immediately supplicated his master by many humble gestures and looks. The master put a penny into the Dog's mouth, which he instantly delivered to the pieman, and received his pie. This traffic between the pieman and the grocer's Dog continued to be daily practised for many months.

* An inquiry respecting this circumstance has lately been made of Mr. Langford, surgeon, in St. Alban's. He says that there is now living in St. Alban's one of the inn servants, who has a perfect recollection of the event.

At a convent in France, twenty paupers were served with a dinner at a certain hour every day. A Dog belonging to the convent did not fail to be present at this regale, to receive the odds and ends which were now and then thrown to him. The guests, however, were poor and hungry, and of course not very wasteful; so that their pensioner did little more than scent the feast of which he would fain have partaken. The portions were served by a person, at the ringing of a bell, and delivered out by means of what in religious houses is called a *tour*; which is a machine like the section of a cask, that, by turning round upon a pivot, exhibits whatever is placed on the concave side, without discovering the person who moves it. One day this Dog, who had only received a few scraps, waited till the paupers were all gone, took the rope in his mouth, and rang the bell. His stratagem succeeded. He repeated it the next day with the same good fortune. At length the cook, finding that twenty-one portions were given out instead of twenty, was determined to discover the trick: in doing which he had no great difficulty; for, lying *perdu*, and noticing the paupers as they came for their different portions, and that there was no intruder except the Dog, he began to suspect the truth; which he was confirmed in when he saw the animal wait with great deliberation till the visitors were all gone, and then pull the bell. The matter was related to the community; and, to reward him for his ingenuity, he was permitted to ring the bell every day for his dinner, on which a mess of broken victuals was always afterwards served out to him.

Mr. C. Hughes, a country comedian, had a wig which generally hung on a peg in one of his rooms. He one day lent the wig to a brother player, and some time afterwards called on him. Mr. Hughes had his Dog with him, and the man happened to have the borrowed wig on his head. Mr. Hughes stayed a little while with his friend; but,

when he left him, the Dog remained behind. For some time he stood, looking full in the man's face; then, making a sudden spring, he leaped on his shoulders, seized the wig, and ran off with it as fast as he could; and, when he reached home, he endeavoured, by jumping, to hang it up in its usual place.—The same Dog was one afternoon passing through a field in the skirts of Dartmouth, where a washer-woman had hung out her linen to dry. He stopped and surveyed one particular shirt with attention; then seizing it, he dragged it away through the dirt to his master, whose shirt it proved to be.

In the year 1791, a person went to a house in Deptford, to take lodgings, under pretence that he had just arrived from the West Indies; and, after having agreed on the terms, said he would send 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 door was opened, the dog flew to the chest, against which it scratched and barked with redoubled fury. They attempted 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 that was alive. Suspicion becoming very strong, they were induced to force it open; when, to their utter astonishment, they found in it their new lodger, who had been thus conveyed into the house with the intention of robbing it.

A Dog that had been the favourite of an elderly lady, discovered, some time after her death, the strongest emotions on the sight of her picture, when it was taken down to

be cleaned. Before this, he had never been observed to notice the painting. Here was evidently a case either of passive remembrance, or of the involuntary renewal of former impressions.—Another Dog, the property of a gentleman that died, was given to a friend in Yorkshire. Several years afterwards, a brother from the West Indies paid a short visit at the house where the Dog then was. He was instantly recognised, though an entire stranger, in consequence, most probably, of a strong personal likeness. The Dog fawned upon and followed him with great affection to every place where he went.

In Japan the Dogs are amazingly numerous; they lie about the streets, and are very troublesome to passengers. In Kæmfer's time the Emperor was so fond of these animals, as to cause huts to be built, and food to be provided for them, in every street; the utmost care was taken of them during sickness, and when they died they were carried to the usual burying-places on the tops of mountains. This attention to the species arose from the superstitious whim of one of the preceding Emperors, who happened to be born under the sign of the Dog, one of the Japanese constellations. A poor fellow, that had lost his Dog by death, sweating under his load in climbing the mountain of interment, was overheard by his neighbour cursing, at a dreadful rate, the edict. "Friend, (said his neighbour,) you have reason to thank the gods that the Emperor was not born under the Horse; for what would have then been your load!" If these animals happen to do any injury, none but the public executioner dare to presume to punish them; and it is even necessary for him to receive a direct order for the purpose, from some of the governors.

The inhabitants of some countries admire the Dog as food. In the South Sea Islands these animals are fattened with vegetables, which the natives savagely 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.—The negroes of the coast of Guinea are so partial to the flesh of these animals, that they frequently give considerable prices for them: a large Sheep for a Dog was formerly, and probably is now, a common article of exchange.—Even the ancients esteemed a young and fat Dog to be excellent eating. Hippocrates ranks it with mutton or pork. The Romans particularly admired the flesh of sucking whelps: “First and foremost,” says Pliny, in the words of his unrivalled translator, Philemon Holland, “the ancient Romans thought the flesh of sucking whelps to be so pure and fine a meat, that they used to sacrifice and offer them as an expiatory oblation to their gods, for to appease their indignation!”

THE WOLF*.

These animals are natives of almost all the temperate and cold regions of the globe; and were formerly so numerous in this island, that King Edgar commuted the punishments for certain offences into a requisition of a number of Wolves' tongues from each criminal; and he converted a heavy and oppressive tax on one of the Welsh princes, into an annual tribute of three hundred Wolves' heads.

* DESCRIPTION. The Wolf is larger, and more strong and muscular than the Dog. His colour is generally pale grey.

SYNONYMS. *Canis Lupus*. Linn.—Loup. Buffon.—Shaw's Gen. Zool. Pl. 75.—Bew. Quad. 313.

Cambria's proud kings (though with reluctance) paid
Their tributary Wolves; head after head
In full account, till the woods yield no more,
And all the ravenous race extinct is lost.

It appears from Hollinshed, that Wolves were very noxious to the flocks in Scotland, in 1577: nor were they entirely destroyed till about a century afterwards; when the last Wolf fell in Lochabar, by the hand of Sir Ewen Cameron, of Lochiel.

When pressed by hunger, the Wolf, though naturally a coward, becomes courageous from necessity: he then braves every danger, and will venture to attack even the Buffalo. Sometimes whole droves of Wolves descend upon the sheep-folds; and, digging the earth under the doors, enter with dreadful ferocity, and put to death every living creature before they depart.

“ By wintry famine rous'd, from all the tract
Of horrid mountains which the shining Alps
And wavy Appenine and Pyrenees
Branch out stupendous into distant lands,
Cruel as death! and hungry as the grave!
Burning for blood! bony, and gaunt, and grim!
Assembling Wolves, in raging troops, descend;
And, pouring o'er the country, bear along,
Keen as the North wind sweeps the glossy snow:
All is their prize.”

Although the Wolf is the most gluttonous of quadrupeds, devouring even his own species when incited by hunger, yet his rapacity does not exceed his cunning: always suspicious and mistrustful, he imagines every thing he sees is a snare laid to betray him. If he finds a Rein-deer tied to a post, to be milked, he dares not approach, lest the animal should be placed there only to entrap him; but no sooner is the Deer set at large, than he will instantly pursue and

devour it. Such, however, is his extreme cowardice, that, should the Deer stand at bay and act on the defensive, he is at once intimidated. Wolves have not unfrequently been caught in pit-falls, along with other beasts, which their fears, even in this confined situation, have not permitted them to attack. Instances have occurred of peasants falling into these traps, and sitting quietly *tête à tête* with a Wolf, until released by the hunter.

In the northern parts of the world, these animals sometimes wander upon the ice of the sea, during the spring, in quest of young Seals, which they catch asleep there. But this repast frequently proves fatal to them; for the ice, detached from the shore, carries them to a great distance from the land before they are sensible of it. It is said, that, in some years, a large district is, by this means, delivered from these pernicious beasts; which are then heard howling in a most dreadful manner far out at sea.

The Wolf has great strength, especially in the muscles of his neck and jaws: he can carry a Sheep in his mouth, and run off with it without any difficulty. When reduced to extremity by hunger, we are told by Pontoppidan that he will swallow great quantities of mud, in order to allay the uneasy sensations of his stomach. His sense of smelling is peculiarly strong: he scents the track of animals, and follows it with great perseverance. The odour of carrion strikes him at the distance of nearly a mile.

Notwithstanding the savage nature of the Wolf, he is capable, when taken young, of being tamed. A remarkable instance of this was exhibited in a Wolf belonging to the late Sir Ashton Lever; which, by proper education, was entirely divested of the ferocious character of its species. In Eastern countries, and particularly in Persia, Wolves are exhibited as spectacles to the people. When young, they are taught to dance, or rather to perform a kind of

wrestling, with a number of men. Chardin informs us, that a Wolf well educated in dancing is sold for five hundred French crowns. The Comte de Buffon brought up several of them.—When young, or during the first year, he states that they are very docile, and even caressing; and, if well fed, will neither disturb the poultry, nor any other animals; but, that at the age of eighteen months, or two years, their natural ferocity begins to appear, and they must be chained to prevent them from running off and doing mischief. He brought up one till it was eighteen or nineteen months old, in a court-yard along with fowls, none of which it ever attacked; but, for its first essay, it killed the whole in one night, without eating any of them.

The time of gestation of the Wolf is about three months and a half; and when the females are about to bring forth, they search for some concealed place in the inmost recesses of the forests. After having fixed on the spot, they make it smooth and plain for a considerable space, by tearing up with their teeth all the brambles and brushwood. They then prepare a bed of moss, in which they bring forth five or six young-ones. The mother suckles them for some weeks; but soon teaches them to eat flesh, which she prepares by tearing it into small pieces. She then brings them field-mice, hares, partridges, and fowls; which they at first play with, and then kill. In about six weeks the young leave their den, and follow the mother, who leads them abroad to some neighbouring pool to drink; she conducts them back again, or, when danger is apprehended, obliges them to conceal themselves elsewhere. When they are attacked, she defends them with intrepidity; losing, in this case, every sense of danger, and becoming perfectly furious until they are again in safety.

Of the Wolf there is nothing valuable 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. The smell of his breath is excessively offensive; since, to appease hunger, he swallows, almost indiscriminately, every thing he can find; as, corrupted flesh, bones, hair, and skins half tanned, and even covered with lime. In short, the Wolf is in an extreme degree disagreeable: his aspect is savage, his voice dreadful, his stench insupportable, his disposition perverse, and his manners brutal and ferocious.

THE STRIPED HYÆNA*.

The ancients entertained many absurd and unaccountable notions respecting this animal. They believed that its neck consisted of but one bone, which was without a joint; that it every year changed its sex; that it could imitate the human voice, and had thus the power of charming the shepherds, and riveting them to the place on which they stood. Pliny, (through his translator Philemon Holland,) says, "there is not a wild beast of the field that the magicians have so much in admiration as the Hyæna: for they hold that in the Hyæna itself there is a certain magical virtue, attributing a wonderful power thereunto, in transporting the mind of man or woman, and ravishing their senses so, as that it will allure them unto her very strangely."

* DESCRIPTION. The Spotted Hyæna is about the size of a large Dog, of a pale grayish brown colour, and marked across with several distant blackish bands. The hair of its neck is erect, and is continued in a bristly mane along the back. The tail is rather short, and very bushy. The head is broad and flat, and the eyes have an expression of great wildness and ferocity.

SYNONYMS. *Canis Hyæna*. *Linnaeus*.—*L'Hyæna*. *Buffon*.—*Striped Hyæna*. *Pennant*.—*Shaw's Gen. Zool. Pl. 78*.—*Bew. Zool. 298*.

Hyænas, which are natives of Asiatic Turkey, Syria, Persia, and many parts of Africa, generally inhabit caverns and rocky places; prowling about in the night to feed on the remains of dead animals, or on whatever living prey they can seize. They violate the repositories of the dead, and greedily devour the putrid bodies. They likewise prey on cattle, and frequently commit great devastation among the flocks; yet, when other provisions fail, they are able to subsist on the roots of plants, and the tender shoots of the palms. They sometimes assemble in troops, and follow the march of an army, in order to feast on the dead.

The cry of the Hyæna is very peculiar. It begins with somewhat like the moaning of the human voice, and ends like that of a person making a violent effort to vomit.—His courage is said to equal his rapacity. He will occasionally defend himself with great obstinacy against much larger animals. Kæmpfer relates, that he saw one which had put to flight two Lions; and that he had frequently known an Hyæna to attack the Ounce and the Panther. There is something in its aspect that indicates a peculiar gloominess and malignity of disposition; and its manners correspond with its appearance.—Instances have, however, occurred of this creature being tamed. Mr. Pennant says, that he saw a Hyæna as tame as a Dog; and the Comte de Buffon, that there was one shown at Paris that had been tamed very early, and was apparently divested of all its natural ferocity. In Barbary, Mr. Bruce assures us that he has seen the Moors, in the day-time, take this animal by the ears and haul him along, without his offering any other resistance than that of drawing back. And the hunters will take a torch in their hand, go into his cave, and, pretending to fascinate him by a senseless jargon of words, throw a blanket over him and drag him out.

Mr. Bruce locked up a goat, a kid, and a lamb, all day

with a Barbary Hyæna, when it was fasting, and found them in the evening alive and unhurt; but, on his repeating an experiment of this kind one night, it ate up a young ass, a goat, and a fox, all before morning, so as to leave nothing but some fragments of the ass's bones.—In Barbary, therefore, the Hyænas seem to lose their courage, and fly from man by day; but in Abyssinia, they often prowl about in the open day, and attack with savage fury every animal they meet with.—“These creatures were (says Mr. Bruce) a general scourge to Abyssinia, in every situation, both in the city and in the field; and, I think, surpassed the sheep in number. Gondar was full of them, from evening till the dawn of day; seeking the different pieces of slaughtered carcasses which this cruel and unclean people expose in the streets without burial. Many a time in the night, when the king had kept me late in the palace, and it was not my duty to lie there, in going across the square from the king's house, not many hundred yards distant, I have been apprehensive lest they should bite me in the leg. They grunted in great numbers about me, although I was surrounded with several armed men, who seldom passed a night without wounding or slaughtering some of them.—One night in Maitsha, being very intent on an observation, I heard something pass behind me towards the bed; but, upon looking round, could perceive nothing. Having finished what I was then about, I went out of my tent, resolving directly to return; which I immediately did, when I perceived two large blue eyes glaring at me in the dark. I called up my servant with a light; and we found a Hyæna standing near the head of the bed, with two or three large bunches of candles in his mouth. To have fired at him, would have been at the risk of breaking my quadrant or other furniture; and he seemed, by keeping the candles steadily in his mouth, to wish for no other prey at that time. As his mouth was

full, and he had no claws to tear with, I was not afraid of him; and, with a pike, stuck him as near the heart as I could. It was not till then that he showed any sign of fierceness; but, upon feeling his wound, he let drop the candles, and endeavoured to run up the shaft of the spear to arrive at me, so that I was obliged to draw my pistol from my girdle and shoot him; and nearly at the same time my servant cleft his skull with a battle-axe. In a word, the Hyæna was the plague of our lives, the terror of our night-walks, and the destruction of our mules and asses, which, above every thing else, are his favourite food."

At Dar-Fûr, a kingdom in the interior of Africa, the Hyænas come in herds of six, eight, and often more, into the villages at night, and carry off with them whatever they are able to master. They will kill dogs and asses, even within the enclosures of the houses; and always assemble wherever a dead camel or other animal is thrown, which (acting in concert) they drag to a prodigious distance; nor are they greatly alarmed at the sight of men, or the report of fire-arms. Mr. Brown was told, that whenever any one of them was wounded, its companions always tore it instantly to pieces and devoured it.

A remarkable peculiarity in this animal is, that when he is first dislodged from cover, or obliged to run, he always appears lame for a considerable distance; and sometimes to such a degree, according to Mr. Bruce, as to induce the spectators to suppose that one of his hind legs is broken; but after running some time, this affection goes off, and he escapes swiftly away. The neck, likewise, is so extremely stiff, that in looking behind, or snatching obliquely at any object, he is obliged to move his whole body, somewhat in the manner of a hog.

Hyænas are to be seen in most of the exhibitions of wild beasts in Great Britain. In confinement they are

excessively ravenous and ferocious; and their jaws are much stronger than those of the generality of their tribe. The keeper of the Tower, however, informed me that seven or eight years ago there was one at Exeter 'Change, about six months old, so very tame that he was occasionally suffered to come out of his den, and run about the exhibition room*. The animal would allow even strangers to approach and pat him with their hands, exhibiting no symptoms whatever of displeasure: he seemed fond of playing with any of the dogs that happened to come into the room. Still, however, there was a considerable degree of sullenness and ill-nature in his disposition, which, with his age, appeared every day to increase. After being at Exeter 'Change about two months, he was sold to a Mr. Tennant of Pentonville, a dealer in animals. This person, with only a single string fixed to the animal's collar, suffered him twice or thrice to go out with him into the fields. He was soon afterwards sold to the owner of a caravan, for the purpose of exhibition in the country. From the unusual confinement, his disposition almost immediately became fierce, and he would no longer admit of the approach and caresses of his visitors. He did not long survive this change of life, but gradually pined away till he died.

Mr. John Hunter had at Earle's Court, an Hyæna, nearly eighteen months old, that was so tame as to admit strangers to approach and touch him. After Mr. Hunter's death he was sold to a travelling exhibitor of animals. For a few months previously to his being carried into the country, he was lodged in the Tower. The keeper informed me that he there continued tolerably gentle; so much so, as to allow a person who knew him to enter the den and

* In this act he appeared always to run on one side, as though he had been weak in the loins.

handle him. When he was confined in the caravan, he soon exhibited symptoms of ferocity equal to those of the most savage Hyænas. He was at last killed by a tiger, the partition of whose den from his own he had torn down by the enormous strength of his jaws.

The Hyæna in confinement is allowed about four pounds weight of food in the day; and he laps about three pints of water.—The value of a full-grown Hyæna for exhibition, is from ten to thirty pounds.

THE SPOTTED HYÆNA, OR TIGER-WOLF*.

Natives of several parts of Africa, but particularly numerous at the Cape of Good Hope, these animals are described to be in the greatest degree cruel, mischievous, and formidable. They have been frequently known to enter the huts of the Hottentots in search of prey, from whence they sometimes carry off even the children. One of them coming into a Negro's house, on the coast of Guinea, laid hold of a girl; threw her, in spite of her resistance, on his back, holding fast by one of the legs; and was making off with her; when the men, whom her screams had roused from sleep, came to her relief. The beast dropped her, and made his escape; but she was

* DESCRIPTION. The Spotted Hyæna has a considerable resemblance to the former species; but is larger, and the body is marked with numerous roundish black spots. The face and upper part of the head are black; and along the neck extends an upright black mane. The ground-colour of the body is reddish brown.

SYNONYMS. *Canis Crocuta*. Linn.—Tiger-wolf. *Sparrm. Kolben*.—Quumlengo, or Jackal. *Barbot*. 209—486.—Jackals, or Boshund. *Ludolf*.—Jackal, or Wild Dog. *Bosman*.—Spotted Hyæna. *Penn*.—Laughing Hyæna, from the singular kind of noise that the animal generally makes when disturbed in its feeding. *Shaw's Gen. Zool. Pl.* 78.—*Bew. Quad.* 301.

considerably lacerated in different parts of the body, by his teeth.

Numbers of them attend almost every dark night about the shambles at the Cape, to carry away the filth and offal left there by the inhabitants, who suffer these their scavengers to come and return unmolested. The dogs too, with which at other times they are in continual enmity, do not now molest them; and on these occasions, it has been remarked they are seldom known to do any important mischief. Thunberg informs us, that they are so excessively bold and ravenous, as sometimes even to eat the saddle from under the traveller's head, and gnaw the shoes on his feet, while he is sleeping in the open air.

They utter the most horrid yells in the night, while prowling about for prey; and their propensity to these cries is so implanted in them by nature, that one which was brought up tame at the Cape, was often heard in the night to emit this dreadful noise.—During the day, they remain concealed in holes in the ground, or in clefts of rocks; and in the night time they frequently descend upon the sheep-folds, in which, if not well defended by dogs, they commit terrible ravages. Some of the inhabitants of the Cape pretend that the Hyæna has the power of imitating the cries of other animals, and that by this means it often succeeds in decoying lambs, calves, and sheep from the folds. It is also said, that a party of Hyænas half-flying and half-defending themselves, will decoy the whole of the dogs from a farm to follow them to some distance; while their companions have an opportunity of coming from their retreats, and carrying off sufficient booty before the dogs can return to prevent them.

Every kind of animal substance is prize to them; and the gluttony and filthy habits of these beasts, seem a kind interference of Providence, urging them to consume those dead and corrupting bodies, which in hot climates might,

otherwise, seriously affect the health and comforts of the people.

Dr. Sparrman relates a story of the Spotted Hyæna, for the truth of which he does not altogether vouch; yet it is so diverting, that I shall make no apology for introducing it. "One night, at a feast near the Cape, a trumpeter, who had got himself well filled with liquor, was carried out of doors in order to cool and sober him. The scent of him soon attracted a Tiger-wolf; which threw him on his back, and carried him away, thinking him a corpse, and consequently a fair prize, towards Table Mountain. In the mean time, however, our drunken musician awaked; sufficiently sensible to know the danger of his situation, and to sound the alarm with his trumpet, which he carried fastened to his side. The beast, as may easily be imagined, was not less frightened in its turn." Another writer observes, that any person but a trumpeter, in such a situation, would doubtless have furnished the animal with a supper.

The strength of the jaws of the Spotted Hyæna is so great, that it is enabled to break in pieces, without difficulty, even the hardest bones. In confinement it is usually fed with such as are the refuse of other animals; and these are all perfectly digested in the stomach.

The following is a very remarkable and illustrative instance of the enormous powers of one of these animals. The den of the Spotted Hyæna now in the Tower wanted some repairs. These the carpenter completed by nailing on the floor a thick oak plank, of seven or eight feet in length, with at least a dozen nails, each longer than the middle finger of the hand. At one end of this plank there was, however, a small piece left that stood up higher than the rest; and the man, not having a proper chisel along with him to cut it off, returned to his shop for one. During his absence some persons came in to see the animals, and

the Hyæna was let down by the keeper from the other part of his den. He had scarcely been in the place a moment, before he espied the piece that was left at the end of the plank, and, seizing hold of it in his teeth, tore the plank completely up, drawing every nail.

This animal is, notwithstanding, much more gentle than most of the individuals of the former species. The keeper can venture to pat and caress him, and even to enter his cage at all times, except when he is feeding. He does not pay the same respect to *animals* that come in his way. A soldier who some time ago visited the Menagerie of the Tower, brought along with him a small terrier dog. The fellow ridiculously held him up to the den of the Hyæna; and on seeing the animal, the dog was irritated, barked at him, and in his rage thrust his head between the bars. The furious beast sprung upon him, dragged him through into the den, and almost in an instant devoured him.

The keeper says that it is a very difficult thing to strike this animal through the bars of his den with a stick. His activity and strength are so great, that he always seizes it in his teeth.

THE JACKAL*.

In their general habits and economy these animals are much allied to the Dog. When caught young they soon become domestic, attach themselves to mankind, wag their

* DESCRIPTION. The body of the Jackal has a great resemblance to that of the Fox; the head, however, is shorter, the nose blunter, and the legs longer. The tail is thickest in the middle, tapers to a point, and is tipped with black. The hair, which is long and coarse, is of a dirty, tawny colour, yellowish on the belly. The length of the body is about thirty inches, and of the tail eleven.

SYNONYMS. *Canis aureus*. Linn.—Schakal. Penn.—Chagal, in Persia.—Adil. Belon.—Shaw's Gen. Zool. Pl. 79.—Bew. Quad. 320.

tails when pleased, and distinguish their masters from other persons. They love to be fondled and patted with the hand; and, when called by name, will leap on a table or chair. They eat readily from the hand, drink as dogs do, by lapping; and are fond of playing with dogs. Although carnivorous in a wild state, they eat bread eagerly.

In the forests of their native countries, the hot and temperate parts of Asia and Africa, they associate in packs of from fifty to two hundred; and hunt, during the night, like hounds, in full cry. They devour poultry and lambs, ravage the streets of villages and gardens near towns, and are said even to destroy children which are left unprotected. They are bold and courageous; sometimes entering the tent of a traveller while he is asleep, and stealing away any thing that is eatable. If animal prey is not to be met with, they will feed on roots and fruit. In this case, the most infected carrion comes not amiss to them. They greedily disinter the dead, and devour the most putrid bodies; on which account the graves are, in many countries, made of great depth. They also attend caravans, and follow armies, to feast on the remains of the dead.

In the night their howlings (for their voice is naturally a howl) are dreadful; and when not far distant, these are so horribly loud, that persons can with difficulty hear each other speak. Dillon says, their voice is like the cries of many children of different ages mixed together: when one commences, the whole pack immediately afterwards join in the howl. In the day-time they are silent. All the beasts of the forest are roused by the cries of the Jackal; and the Lion and other beasts of prey, by a kind of instinct, attend to it as a signal for the chase, and seize such timid animals as fly from the noise. From this circumstance it is that the Jackal has obtained the title of the Lion's Provider.—Jackals burrow in the earth; and leave their habitations

during the night only, to range for prey. The females breed once a-year, and produce from six to eight young-ones at a birth.

Such, nearly, is the account given to us by Mr. Pennant: that of the Comte de Buffon is very different. He says, that these are stupid and voracious animals, and extremely difficult to be tamed; and that with one, which he kept for nearly a year, neither caresses nor food would soften his disposition, though taken young, and reared with the utmost care. It would allow no one to touch it, and attempted to bite all persons indiscriminately. When suffered to be at liberty, nothing could prevent it from leaping on the tables, and carrying off every eatable it could lay hold of. — This writer also informs us, that whenever the Jackal, in a wild state, meets with travellers, it stops to reconnoitre them, without any symptoms of fear; and that, in its excessive voracity, if nothing better offers, it will even eat the leather of harnessing, or boots and shoes.

Whenever any of these creatures begin to utter their cry, all the rest do the same; so that when one of them has entered into a house to steal, and hears his companions at a distance, he cannot refrain from adding his voice to the number, and is thus frequently detected.

THE BARBARY JACKAL*.

This is, in every respect, a most adroit and active animal. He does not, like the Common Jackal, associate in packs, but always lives singly. He will venture to approach, even in the open day, the houses near which he has his subterraneous abode; and, carefully concealed beneath the shel-

* DESCRIPTION. The Barbary Jackal is about the size of the common Fox, and is of a brownish fawn-colour. From behind each ear runs a black line; which soon divides into two, extending down-

ter of thick bushes, will frequently creep without noise, surprise the poultry, carry off their eggs, and leave no traces of his exploits, but the devastations themselves.—One of his principal talents consists in the hunting of birds; and in this he exhibits such surprising craft and agility, that few are able to escape him.

His cunning is pleasingly depicted in the following narration of M. Sonnini:—"One day, as I was meditating in a garden, I stopped near a hedge. A Thaleb, hearing no noise, was coming through the hedge towards me; and, when he had cleared himself, was just at my feet. On perceiving me, he was seized with such surprise, that he remained motionless for some seconds, without even attempting to escape, his eyes fixed steadily on me. Perplexity was painted in his countenance, with a degree of expression of which I could not have supposed him susceptible; and which denoted great delicacy of instinct. On my part, I was afraid to move, lest I should put an end to this situation, which afforded me much pleasure. At length, after he had taken a few steps, first towards one side and then the other, as if so confused as not to know which way to get off, and keeping his eyes still turned towards me, he retired; not running, but stretching himself out, or rather creeping with a slow step, setting down his feet one after another with singular precaution. He seemed so much afraid of making a noise in his flight, that he held up his large tail, almost in an horizontal line, that it might neither drag on the ground nor brush against the plants. On the other side of the hedge I found the fragments of his meal:

wards along the neck. The tail is bushy, and surrounded by three dusky rings.

This species is found principally in Egypt.

SYNONYMS. *Canis Barbarus*. *Shaw*.—Barbary Schakal. *Penn*.—Thaleb. *Sonnini*.—Barbary Jackal. *Shaw*.

it had consisted of a bird of prey, great part of which he had devoured.

The Barbary Jackal is one of the prettiest of quadrupeds; and perhaps would be one of the most amiable, if his tricks, and his talents for depredation did not bear, greatly too much, the marks of knavery and falsehood.

THE FOX*.

The Fox is a native of almost every quarter of the globe; and is of so wild and savage a nature, that it is impossible fully to tame him. He is esteemed the most sagacious and crafty of all beasts of prey. The former quality he shows in his mode of providing for himself an asylum, where he retires from pressing dangers, dwells, and brings up his young; and his craftiness is discovered by his schemes to catch lambs, geese, hens, and all kinds of small birds.

When it is possible for him conveniently to do so, the Fox fixes his abode on the border of a wood, in the neighbourhood of some farm or village. He listens to the crowing of the cocks, 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. If he can leap the wall, or creep in underneath, he ravages the court-yard, puts all to death, and retires softly with his prey; which he either hides under herbage, or carries off to his kennel. He returns in a few minutes for more; which he carries off or conceals in the same manner, but in a different place. In

* SYNONYMS. *Canis Vulpes*. Linnæus.—Le Renard. Buffon.—Bingley's Mem. of Brit. Quad. Pl. 10.—Bew. Quad. 307, 308, 311.

this way he proceeds till the progress of the sun, or some movements perceived in the house, warn him that it is time to suspend his operations, and to retire to his den. He plays the same part with the catchers of thrushes, woodcocks, and other birds. He visits their nets and birdlime very early in the morning, and carries off successively the birds which are entangled, concealing them in different places, especially by the sides of highways, in the furrows, and under the herbage or brush-wood, where they are sometimes left two or three days, but where he knows perfectly to find them when he is in need. He hunts the young hares in the plains; seizes old ones in their seats; digs out the rabbits in the warrens; discovers the nests of partridges and quails, and seizes the mothers on the eggs; and destroys a vast quantity of game. He is exceedingly voracious; and, when other food fails him, makes war against rats, field mice, serpents, lizards, toads, and moles. Of these he destroys great numbers; and this is the only service that he appears to do to mankind. When urged by hunger, he will also eat roots or insects; and the Foxes near the coasts will devour crabs, shrimps, or shell-fish. In France and Italy, these animals do incredible mischief by feeding on grapes, of which they are excessively fond.

We are told by Buffon, that the Fox is so fond of honey, that he sometimes attacks bee-hives, and the nests of wasps, for the sake of what he can find to eat; and that he frequently meets with so rough a reception here, as to oblige him to retire, in order that he may roll on the ground and crush those that are stinging him: but having thus rid himself of his troublesome companions, he instantly returns to the charge, and obliges them at length to forsake their combs, and leave them to him as the reward of his victory. When pressed by necessity he will devour carrion. The Comte de Buffon one evening suspended on a tree, at the height of nine feet, some meat, bread, and bones. The

Foxes had been at severe exercise during the night; for next morning the earth all around was beaten, by their jumping, as smooth as a barn-floor.

The Fox exhibits a great degree of cunning in digging young rabbits out of their burrows. He does not enter the hole; for in this case he would have to dig several feet along the ground, under the surface of the earth: but he follows their scent above, till he comes to the end, where they lie; and then scratching up the earth, descends immediately upon and devours them.

Pontoppidan informs us, that when the Fox observes an otter go into the water to fish, he will frequently hide himself behind a stone; and, on the otter coming to shore with his prey, will make such a spring upon him that the affrighted animal runs off and leaves his booty behind. "A certain person (continues this writer) was surprised on seeing a Fox, near a fisherman's house, laying a parcel of torisks'* heads in a row. He waited the event; the Fox hid himself behind them, and made a booty of the first crow that came for a bit of them†!

The Fox prepares for himself a convenient den, in which he lies concealed during the greatest part of the day. This is so contrived as to afford the best possible security to its inhabitant; being situated under hard ground, the roots of trees, or in the crevices of rocks, and being also furnished with proper outlets, through which he may escape in case of necessity.—This care and dexterity in constructing for himself a habitation, is by the Comte de Buffon considered as alone sufficient to rank the Fox among the higher orders of quadrupeds.

* A species of Cod.

† These are such extraordinary instances of sagacity, that I really know not how to credit them.

He is one of those animals, that, in this country, are made objects of diversion in the chase. When he finds himself pursued, he generally makes towards his hole; and, penetrating to the bottom, lies till a Terrier is sent in to him. If his den is amongst rocks or under the roots of trees, he is safe; for the Terrier is no match for him there, and he cannot be dug out by his enemies. When the retreat to his kennel is cut off, his stratagems and shifts to escape are as surprising as they are various. He takes to the woody parts of the country, and prefers the paths that are most embarrassed with thorns and briars. He runs in a direct line before the hounds, and at no great distance from them; and, if hard-pushed, seeks the low, wet grounds, as though conscious that the scent does not lie so well there. When overtaken, he becomes obstinately desperate, and bravely defends himself against the teeth of his adversaries even to the last gasp.

Dr. Goldsmith relates a remarkable instance of parental affection in this animal, which he says occurred near Chelmsford. A female Fox that had, as it should seem, but one cub, was unkennelled by a gentleman's hounds, and hotly pursued. The poor animal, braving every danger rather than leave her cub behind to be worried by the dogs, took it up in her mouth, and ran with it in this manner for some miles. At last, taking her way through a farmer's yard, she was assualted by a mastiff; and was at length obliged to drop her cub, which was taken up by the farmer. And we are happy to add, that the affectionate creature escaped the pursuit, and got off in safety.—A female Fox was hunted near St. Ives, during three quarters of an hour, with a cub, about a fortnight old, all the time in her mouth, which she was at length compelled to leave to the ferocity of her pursuers.

Of all animals, the Fox has the most bright and significant eye. He is remarkably playful; but, like all savage

creatures half reclaimed, will bite, on the least offence, even those with whom he is most familiar. He languishes when deprived of liberty; and, if kept too long in a domestic state, generally at last dies of melancholy.

The females produce young-ones only once in the year, unless by some accident their first litter happens to be destroyed; and the usual number is from three to six. If the dam perceives the place of her retreat to be discovered, she carries off her cubs, one by one, to a more secure habitation. The young are brought forth blind, like puppies; and are of a darkish brown colour.—Foxes grow till they are eighteen months old, and live thirteen or fourteen years.—During winter, these animals make an almost continual yelping; but in summer, when they shed their hair, they are for the most part silent.

Foxes are very common in Japan. The natives of that country believe them to be animated by the Devil. All their historical and sacred writings are full of the most strange and absurd accounts respecting them.

THE ARCTIC FOX*.

Steller, the Russian traveller, has given us an ample and most entertaining account of the habits of life and manners of the Arctic Fox†.

* DESCRIPTION. The Arctic Fox is smaller than the Common Fox, and of a bluish-gray colour, which sometimes changes to perfect white. The hair is very thick, long, and soft. The nose is sharp; and the ears short, and almost hid in the fur. The tail is shorter, but more bushy, than that of the Common Fox.

SYNONYMS. *Canis lagopus*. *Linnaeus*.—*Isatis*. *Buffon*.—*Bew. Quad.* 311.

† This account appears indeed to be greatly exaggerated; but we know not how to contradict the statement of facts, to which a respectable writer informs us he was an eye-witness.

“During my unfortunate abode (says he) on Bering’s Island, I had but too many opportunities of studying the nature of these animals; which far exceed the Common Fox in impudence, cunning, and roguery. The narrative of the innumerable tricks they played us, might vie with Albertus Julius’s history of the Apes on the island of Saxenberg.

“They forced themselves into our habitations by night as well as by day, stealing all that they could carry off; even things that were of no use to them, as knives, sticks, and clothes. They were so extremely ingenious as to roll down our casks of provisions, several *poods** in weight; and then steal the meat out with such skill, that, at first, we could not bring ourselves to ascribe the theft to them. While employed in stripping an animal of its skin, it has often happened that we could not avoid stabbing two or three Foxes, from their rapacity in tearing the flesh out of our hands. If we buried it ever so carefully, and even added stones to the weight of earth that was upon it, they not only found it out, but with their shoulders pushed away the stones, by lying under them, and in this manner helping one another. If, in order to secure it, we put any animal on the top of a high post in the air; they either dug up the earth at the bottom, and thus tumbled the whole down, or one of them climbed up, and with incredible artifice and dexterity threw down what was upon it.

“They watched all our motions, and accompanied us in whatever we were about to do. If the sea threw up an animal of any kind, they devoured it before we could arrive to rescue it from them: and if they could not consume the whole of it at once, they trailed it in portions to the mountains, where they buried it under stones before our

* The *pood* is equal to 40 Russian pounds, each of which is somewhat less than an English pound.

eyes, running to and fro as long as any thing remained to be conveyed away. While this was doing, others stood on guard, and watched us. If they saw any one coming at a distance, the whole troop would combine at once and begin digging all together in the sand, till even a beaver or sea-bear in their possession would be so completely buried under the surface, that not a trace of it could be seen. In the night-time, when we slept in the field, they came and pulled off our night-caps, and stole our gloves from under our heads, with the beaver-coverings, and the skins that we lay upon. In consequence of this, we always slept with our clubs in our hands, that if they awoke us we might drive them away or knock them down.

“When we made a halt to rest by the way, they gathered around us, and played a thousand tricks in our view; and when we sat still, they approached us so near that they gnawed the thongs of our shoes. If we lay down as if intending to sleep, they came and smelt at our noses, to find whether we were dead or alive. On our first arrival, they bit off the noses, fingers, and toes of our dead, while we were preparing the grave; and thronged in such a manner about the infirm and sick, that it was with difficulty we could keep them off.

“Every morning we saw these audacious animals patrolling about among the Sea-lions* and Sea-bears, lying on the strand; smelling at such as were asleep, to discover whether some one of them might not be dead: if that happened to be the case, they proceeded to dissect him immediately; and soon afterwards all were at work in dragging the parts away. Because the sea-lions sometimes in their sleep overlay their young, the Foxes every morning examined the whole herd of them, one by one, as if con-

* Leonine Seals.

scious of this circumstance; and immediately dragged away the dead cubs from their dams.

"As they would not suffer us to be at rest either by night or day, we became so exasperated against them, that we killed them, young and old, and harassed them by every means we could devise. When we awoke in the morning, there always lay two or three that had been knocked on the head the preceding night; and I can safely affirm, that, during my stay upon the island, I killed above two hundred of these animals with my own hands. On the third day after my arrival, I knocked down with a club, within the space of three hours, upwards of seventy of them, and made a covering to my hut with their skins. They were so ravenous, that with one hand we could hold to them a piece of flesh, and with a stick or axe in the other could knock them down.

"From all the circumstances that occurred during our stay, it was evident that these animals could never before have been acquainted with mankind; and that the dread of man is not innate in brutes, but must be grounded on long experience.

"Like the Common Foxes, they were the most sleek and full of hair in the months of October and November. In January and February the growth of this was too thick. In April and May they began to shed their coat; in the two following months they had only wool upon them, and appeared as if they went in waistcoats.—In June they dropped their cubs, nine or ten at a brood, in holes and clefts of the rocks. They are so fond of their young, that, to scare us away from them, they barked and yelled like dogs; by which they betrayed their covert: but no sooner did they perceive that their retreat was discovered, than (unless they were prevented) they dragged the young away in their mouths, and endeavoured to conceal them in some more secret place. On one of us killing the young, the dam

would follow him with dreadful howlings, both day and night, for a hundred or more *verst*s*; and would not even then cease till she had done her enemy some material injury, or was herself killed by him.

“In heavy falls of snow, these animals bury themselves in that substance, where they lie as long as it continues of a sufficient depth. They swim across the rivers with great agility. Besides what the sea casts up, or what is destroyed by other beasts, they seize the sea-fowl, by night, on the cliffs, where it has settled to sleep; but, on the contrary, they are themselves frequently victims to the birds of prey.—Though now found in such numbers on this island, they were probably conveyed thither from the continent, on the drift-ice; and being afterwards nourished by the great quantity of animal substances thrown ashore by the sea, they became thus enormously multiplied.”

We are informed by Mr. Crantz, that the Arctic Foxes exert a very extraordinary degree of cunning in their mode of feeding on fish. They go into the water, and make a splash with their feet, in order to disturb the scaly tribes; and, when these come up, immediately seize them. He states, that in imitation of these animals, the Greenland women have adopted the same method with success.—Charlevoix, apparently alluding to this species, says that they exert an almost incredible degree of cunning in entrapping the different kinds of water-fowl. They advance a little way into the water; and afterwards retire, playing a thousand antic tricks on the banks. The fowl approach; and on their coming near, the Fox ceases, that he may not alarm them, only moving about his tail very gently: the former are said to be so foolish as to come up and peck at it; when he immediately springs round upon them, and seldom misses his aim.

* The Russian *verst* contains about 1166½ English yards.

These animals, which are natives only of the Arctic regions near the Polar Circle, and of the islands in the Frozen and Eastern Ocean, are eagerly sought after for the sake of their skins; the fur of which is light and warm, but not durable. They have at times appeared in such vast numbers in the neighbourhood of Hudson's Bay, that four hundred of them have been killed or taken in different ways between the months of December and March.—The Greenlanders sometimes eat the flesh of the Arctic Fox, which they prefer to that of the hare. They also make buttons of the skins; and, splitting the tendons, use them instead of thread.

OF THE CAT TRIBE IN GENERAL*.

This tribe of animals is ferocious, and tolerably swift of foot. They hunt for their prey chiefly in the night, and seize it by surprise; lying in wait till it comes within reach, and then springing suddenly forwards upon it at one leap. While their prey is in sight, they frequently move their tail from side to side, keeping at the same time their eyes steadily fixed on the object. They never adopt vegetable food, except from necessity. Most of them are very agile in climbing trees; and have the remarkable property of alighting on their feet whenever they are thrown or fall from a height, by which means the danger usually attendant on such accidents is often prevented.

* All the animals belonging to this tribe have six fore-teeth, the intermediate ones of which are equal. They have also three grinders on each side in both jaws. The tongue is furnished with rough, sharp prickles, that point backwards. And the claws are retractile: a necessary provision to keep them from being dulled while walking; for, being their principal weapons, as well of offence as defence, they are both hooked and sharp.

The females produce a considerable number of young-ones at a birth.

THE LION*.

The form of the Lion is strikingly bold and majestic. His large head and shaggy pendent mane, his strength of limb, and formidable countenance, exhibit a picture of terrific grandeur which no words can describe.

His strength is so prodigious, that a single stroke of his paw is sufficient to break the back of a horse; and one sweep with his tail will throw a strong man to the ground. Kolben says, that when he comes up to his prey he always knocks it down dead, and seldom bites it till the mortal blow has been given: this blow he generally accompanies with a tremendous roar.

* DESCRIPTION. The length of this animal is from six to eight feet; and his tail, which is terminated by a tuft of blackish hair, is alone about four feet long. The general colour is a pale tawny, inclining to white beneath. The claws are retractile; not into sheaths, but into the intervals between the toes, by means of a particular articulation of the last joint. The last bone but one, by bending itself outwards, gives place to the last, which is only articulated to it; and to which the claw is fastened so as to bend itself upwards and sideways, more easily than downwards. So that, the bone which is at the end of every toe being almost continually bent upwards, the point which rests upon the ground is not the extremity of the toe, but the node of the articulation of the last two bones; and thus, in walking, the claws remain elevated and retracted between the toes, those of the right paws towards the right, and those of the left towards the left side of the toes. This admirable structure is not found in the great toe; whose last joint bends only downward, because this toe does not naturally rest upon the ground, being considerably smaller than the others.

The Lion is a native of the interior both of Africa and Asia.

SYNONYMS. *Felis Leo*. *Linnaeus*.—*Le Lion*. *Buffon*.—*Shaw's Gen. Zool. Pl.* 81, 82.—*Bew. Quad.* 109.

A Lion at the Cape of Good Hope was once seen to take a heifer in his mouth; and though that animal's legs dragged on the ground, yet he seemed to carry her off with as much ease as a cat does a rat: he likewise leaped over a broad ditch with her, without the least difficulty. A buffalo, perhaps, would be too cumbersome for him, notwithstanding his strength, to seize and carry off in the manner above mentioned. Two yeomen, however, of the Cape of Good Hope, gave Dr. Sparrman the following account on this subject:—"Being on a hunting party near *Boshiesmans-river* with several Hottentots, they perceived a Lion dragging a buffalo from the plain to a wood upon a neighbouring hill. They, however, soon forced him to quit his prey, in order to make a prize of it themselves; and found that he 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 carcass. And as soon as he saw, from the skirts of the wood, that the Hottentots had begun to carry off the flesh to the waggon, he frequently peeped out upon them, probably with no little mortification."

The Lion does not willingly attack any animal openly, unless provoked, or extremely hungry; in the latter case he is said to fear no danger, and to be repelled by no resistance. The method in which he takes his prey, is, almost always, to spring or throw himself on it, with one vast bound, from the place of his concealment: yet, if he chances to miss his leap, he will not (as the Hottentots invariably assured Dr. Sparrman) follow his prey any further, but, as though he were ashamed, turning round towards the place where he lay in ambush, slowly, and step by step, measures the exact length between the two points, in order to find how much too short, or how much beyond the mark, he had taken his leap.—"From all the most credible accounts that I could collect concern-

ing Lions, (continues this intelligent writer,) as well as from what I saw myself, I think I may safely conclude, that this beast is a great coward; or, at least, is deficient in point of courage proportionate to his strength; on the other hand, however, he sometimes shows an unusual degree of intrepidity, of which I will just mention the following instance, as it was related to me.

"A Lion had broken into a walled enclosure for cattle, through the latticed gate, and had done considerable damage. The people belonging to the farm were well assured of his coming again by the same way. In consequence of this, they stretched a rope directly across the entrance, to which several loaded guns were fastened in such a manner, that they must necessarily discharge themselves into the Lion's body as soon as ever he should push against the cord, as it was expected he would, with his breast. But the Lion, which came before it was dark, having probably some suspicions respecting the cord, struck it away with his foot; and, without betraying the least fear in consequence of the reports made by the loaded pieces, went on steadily and careless of every thing, and devoured the prey he had left untouched before."

Though the Lion generally springs upon his prey from some lurking-place, yet there have been instances where he has deviated from his usual method. Of these, the following, related by Dr. Sparrman, is remarkable:—A Hottentot, perceiving that he was followed by a Lion, and concluding that the animal only waited the approach of night to make him his prey, began to consider of the best mode of providing for his safety; and at length he adopted the following. Observing a piece of broken ground with a precipitate descent on one side, he sat down by the edge of it; and found, to his great joy, that the Lion also made a halt, and kept at a distance behind him. As soon as it grew dark, the man, sliding gently forward, let himself

down a little below the edge of the steep; and held up his cloak and hat on his stick, at the same time gently moving them backward and forward. The Lion, after a while, came creeping towards the object; and, mistaking the cloak for the man himself, made a spring, and fell headlong down the precipice.

One of the Namaqua Hottentots (whose country is about eighty leagues north of the Cape) endeavouring to drive his master's cattle into a pool of water, enclosed between two ridges of rock, espied a huge Lion couching in the midst of the pool. Terrified at the unexpected sight of such a beast, which seemed to have its eyes fixed upon him, he instantly took to his heels. In doing this, he had presence of mind enough to run through the herd; concluding that, if the Lion should pursue, he would seize upon the first beast that presented itself. In this, however, he was mistaken. The Lion broke through the herd, making directly after the Hottentot; who, on turning round, and perceiving that the monster had singled him out, breathless and half-dead with fear, scrambled up one of the tree-aloes, in the trunk of which had luckily been cut out a few steps, the more readily to come at some birds'-nests that the branches contained. At the same moment the Lion made a spring at him; but, missing his aim, fell upon the ground. In surly silence he walked round the tree, casting at times a dreadful look towards the poor Hottentot, who had crept behind the nests. I should here remark, that these nests belong to a small bird of the genus *Loxia**; that lives in a state of society with the rest of its species, constructing a whole republic of nests in one clump, and under one cover. One of these clumps of nests sometimes extends a space of ten feet in diameter, and contains a population of several hundred

* *Loxia socia*, of Linnaeus.

individuals. It was under the cover of one of these structures, that the Hottentot screened himself from the view of the Lion. Having remained silent and motionless for a great length of time, he ventured to peep over the side of the nest, hoping that the Lion had departed; when, to his astonishment and terror, his eyes met those of the animal, which, as the poor fellow afterwards expressed himself, "flashed fire at him." In short, the Lion laid himself down at the foot of the tree, and did not move from the place for four-and-twenty hours. At the end of this time, becoming parched with thirst, the beast went to a spring at some distance in order to drink. The Hottentot now, with trepidation, ventured to descend; and ran off to his home, which was not more than a mile distant, as fast as his feet could carry him, where he arrived in safety. The perseverance of the Lion was such, that, it appeared afterwards, he returned to the tree, and, finding the man had descended, hunted him by the scent to within three hundred paces of the house.

If we did not know somewhat of the natural disposition of this stately animal, we should feel a great degree of terror in seeing the keepers of wild beasts play with him, pull out his tongue, and even chastise him (as they sometimes do) without a cause. He seems to bear all with the utmost composure; and we very rarely have instances of his revenging these unprovoked and wanton insults. The Lion is frequently bred up with domestic animals, and is seen to play innocently and familiarly among them; and if it ever happens that his natural ferocity returns, it is seldom exerted against his benefactors.—The following pleasing anecdotes afford very sufficient proofs of the gratitude and affection of this animal.

In the reign of king James the First, Mr. Henry Archer, a watchmaker in Morocco had two whelps given him, which had been stolen not long before from a Lioness near

Mount Atlas. They were a male and female; and, till the death of the latter, were kept together in the emperor's garden. He, at that time, had the male constantly in his bed-room, till it grew as tall as a large mastiff-dog; and the animal was perfectly tame and gentle in its manners. Being about to return to England, he reluctantly gave it to a Marseilles merchant, who presented it to the French king, from whom it came as a present to our king; and, for seven years afterwards, was kept in the Tower. A person of the name of Bull, who had been a servant to Mr. Archer, went by chance with some friends to see the animals there. The beast recognised him in a moment; and, by his whining voice and motions, expressive of anxiety for him to come near, fully exhibited the strongest symptoms of joy at meeting with a former friend. Bull, equally rejoiced, ordered the keeper to open the grate; and he went in. The Lion fawned upon him like a dog, licking his feet, hands, and face; and skipped and tumbled about, to the astonishment of all the spectators. When the man left the place the animal bellowed aloud, and shook his cage in an ecstasy of sorrow and rage; and for four days afterwards refused to take any nourishment whatever.

About the year 1650, when the plague raged at Naples, Sir George Davis, the English Consul there, retired to Florence. He happened one day from curiosity to visit the Grand-duke's dens. At the further end of the place, in one of the dens, lay a Lion, which the keepers, during three whole years, had not been able to tame, though all the art and gentleness imaginable had been used. Sir George no sooner appeared at the gates of the den, than the Lion ran to him with all the marks of joy and transport he was capable of expressing. He reared himself up and licked his hand, which this gentleman put in through the iron grate. The keeper, affrighted, pulled him away by the arm, entreating him not to hazard his

life by venturing so near the fiercest creature of his kind that had ever entered those dens. Nothing, however, would satisfy Sir George; but in spite of all the keeper said to him, he would go into the den. The instant he entered, the Lion threw his paws upon his shoulders, licked his face, and ran about his den, fawning, and as full of joy as a dog at the sight of his master. After several salutations had been exchanged, they parted very good friends.

The rumour of this interview between the Lion and the stranger ran immediately through the city; and the Grand-duke, as soon as he had heard of it, sent for Sir George; who, going with his highness to the den, gave him the following account of what had seemed so strange:

"A captain of a ship from Barbary gave me this Lion, when quite a whelp. I brought him up tame; but when I thought him too large to be suffered to run about the house, I built a den for him in my court-yard: from that time he was never permitted to be loose, except when brought into the house to be exhibited to my friends. When he was five years old, he did some mischief by pawing and playing with people in his frolicsome moods: having griped a man one day a little too hard, I ordered him to be shot, for fear of myself incurring the guilt of what might happen; on this, a friend, who happened to be then at dinner with me, begged him as a present: how he came here I know not."

Here Sir George ended; and the Duke of Tuscany assured him, that the Lion had been given to him by the very person on whom Sir George had bestowed him.

An instance of recollection and attachment occurred not many years since in a Lion belonging to the Duchess of Hamilton. It is thus related by Mr. Hope: "One day I had the honour of dining with the Duchess of Hamilton.

After dinner, the company attended her grace to see a Lion fed that she had in the court. While we were admiring his fierceness, and teasing him with sticks to make him abandon his prey and fly at us, the porter came and informed the duchess that a serjeant with some recruits at the gate, begged to see the Lion. Her grace, with great condescension and good-nature, asked permission of the company to admit the travellers. They were accordingly admitted at the moment the Lion was growling over his prey. The serjeant, advancing to the cage, called 'Nero, Nero, poor Nero, don't you know me?' The animal instantly turned his head to look at him; then rose up, left his prey, and came, wagging his tail, to the side of the cage. The man put his hand upon him, and patted him; telling us, at the same time, that it was three years since they had seen each other; and that the care of the Lion on his passage from Gibraltar had been committed to him, and he was happy to see the poor beast show so much gratitude for his attention. The Lion, indeed, seemed perfectly pleased; he went to and fro, rubbing himself against the place where his benefactor stood, and licked the serjeant's hand as he held it out to him. The man wanted to go into the cage to him; but was withheld by the company, who were not altogether convinced that it would be safe for him to do so."

M. Felix, the keeper of the animals at Paris, about five years ago, brought two Lions, a male and female, to the national ménagerie. About the beginning of the following June, he was taken ill, and could no longer attend the Lions; another person, therefore, was under the necessity of performing this duty. The male, sad and solitary, remained from that moment constantly seated at the end of his cage, and refused to receive any thing from the stranger, whose presence was hateful to him, and whom he often menaced by bellowing. The company even of the female

seemed now to displease him; and he paid no attention to her. The uneasiness of the animal afforded a belief that he was really ill; but no one dared to approach him. At length Felix recovered; and, with intention to surprise the Lion, he crawled softly to the cage, and showed only his face between the bars: the Lion, in a moment, made a bound, leaped against the bars, patted him with its paws, licked his hands and face, and trembled with pleasure. The female also ran to him; but the Lion drove her back, and seemed angry; and, fearful that she should snatch any favours from Felix, a quarrel was about to take place; but Felix entered the cage to pacify them. He caressed them by turns; and was afterwards frequently seen between them. He had so great a command over them, that whenever he wished them to separate and retire to their cages, he had only to give the order: when he had a desire that they should lie down, and show strangers their paws or throats, on the least sign they would lie on their backs, hold up their paws one after another, open their throats, and, as a recompense, obtain the favour of licking his hand. These animals were of a strong breed, and at the time above mentioned, were five years and a half old.

A Lion and Lioness brought over together from Africa, about twelve years ago, were kept in the same den at Exeter 'Change in London. They were each about eighteen months old, and were attended by a Negro who had reared them from whelps, and had come over along with them. They permitted this man to enter their den in the greatest safety, when they would fawn upon and play round him, like kittens. He frequently had a table in their den, with pipes and glasses; and, sitting down there, would quietly smoke his pipe. If on these occasions their frolics were too boisterous, he had only to stamp his foot, and by his countenance to express his displeasure, and they would immediately cease, and quietly lie down by

his side. But it was not at all times that even this man would venture himself with them. If they were irritated by the spectators, as through mere wantonness they sometimes were, he always refused to enter their den; and it is not recollected that he ever did it whilst they were feeding. When the man left Exeter 'Change, the female took his loss so much to heart that she pined away, and died not long afterwards.

We are assured, from numberless authorities, that the anger of this animal is noble, that his courage is magnanimous, and his disposition grateful. He has been often seen to despise contemptible enemies, and pardon their insults when it was in his power to have punished them. He has been known to spare the lives of such creatures as were thrown to be devoured by him, to live peaceably with them, to afford them part of his subsistence, and sometimes even to want food himself rather than deprive them of that life which his generosity had spared.—A dog was put into the cage of a Lion in the ménagerie at the Tower, some years ago, for his food. The stately animal, however, spared its life; and they lived together for a considerable time in the same den, in the most perfect harmony, and appeared to have a great affection for each other. The dog had sometimes the impudence to growl at the Lion, and even to dispute with him the food which was thrown to them; so true is the old proverb, that “familiarity breeds contempt:” the noble animal, however, was never known to chastise the impertinent conduct of his little companion; but usually suffered it to eat quietly till it was satisfied, before he began his own repast.

A Lioness, at present in the Museum of Natural History at Paris, permits a dog to live in her den, and is excessively fond of it. She seems both pleased and gratified by its caresses: she is attentive to all its wants; and is unhappy whenever it is removed from her sight, though

for a few moments only. The keepers assert, that to this singular attachment alone they are indebted for the tranquillity with which she has hitherto supported the loss of her liberty.

But although Lions have suffered dogs to live in the same den with them, no instances have occurred, at least in England, of their allowing so great a privilege to any other animals.—A Lion, called Young Hector, now in the Tower, had been some days very ill, when (to try the experiment) a live rabbit was put into his den. It was suffered to remain there uninjured one whole night and the next day; and some hopes began to be entertained that it would be permitted to share the apartment with the noble animal in quiet. But on the morning following the second night, it was found dead. The Lion had not, however, attempted to devour it, for the skin was not in the least lacerated; but when this was stripped off, there were on each side of the body the evident marks of his teeth.—In another instance, of a similar kind, a cat had accidentally crept among the straw of his bed-place; but the moment he discovered her, he sprang upon and destroyed her. In this case also he left the body undevoured.

In the Museum of Natural History at Paris one of the Lionesses, about nine years of age, has three times had young. At the first litter she produced nine, at the second three, and at the third two. The parents, which are about equal in age, and probably of the same litter, were caught together, when somewhat more than a year old, in a trap, made in a wood, in the north of Africa. They now live together, are extremely gentle, and exhibit great affection towards each other.—None of the young-ones had at first either a mane, or tuft at the end of their tail; and we are well assured that these do not begin to appear till the animals are three years or three years and a half old. Their coat was somewhat woolly, and of a confused colour be-

tween gray and red. They had several little brown transverse strokes on the upper part of the back; which were crossed on each side by a straight line of the same colour, that extended from the back of the head to the tail. As they increased in size, these by degrees disappeared: and with a more regular proportion of limbs, the hair assumed nearly the colour of that of the old animals. It was in October, 1800, that these whelps were littered. When they were some months old, they became very mischievous, and one in particular exhibited unpleasant signs of ferocity. The keeper one day, against the animal's inclination, compelled him to go into the garden of the Museum; when he sprang at the man with so much violence, as to tear the sleeve of his coat. Two of these young Lions have fallen victims to the first effects of dentition, a period very dangerous to the young of all savage animals that are produced in a state of confinement.

The Lions in the French Museum begin to roar at day-break, and the females follow their example. They continue this noise for six or seven minutes; and recommence it after feeding, for about the same length of time. At other times they are seldom heard; except to announce some change of weather, or when their keeper has been long absent.—In a state of nature, the Lion seldom leaves his den except during the night; but in the Museum the animals, being shaded from the too glaring light of the sun, are, on the contrary, always most active in the day.

The Lions in the Tower of London generally begin to roar in the evening, just before the night closes in. A Lioness that was bred in the Tower, regularly roars at six o'clock in the evening through both winter and summer. This is almost always within five minutes (one way or the other) of the striking of the clock; and the practice is supposed to have originated in winter, from the noise of the drums, which, during that part of the year, always beat

at six o'clock. It is, however, somewhat strange, that she should have continued this exactly at the same hour through the whole year, since, for several months, the drums are not beat till eight o'clock. These animals usually roar on the approach of rainy weather; and much more on Sunday than any other days, from the circumstance of their being then almost entirely by themselves.

In the den adjoining to that in which the before-mentioned Lioness of the French Museum is placed, there is another female, which was caught in the interior of Africa, at a much greater distance from the habitations of men than the places from whence any others in the Museum were brought. According to the account of Felix Cassel, the principal keeper, who travelled into Africa to collect animals, she came from the borders of the Great Desert. She is ferocious in the extreme, and all the care and attentions of the keepers have not hitherto in the least degree softened her natural disposition. This circumstance seems to confirm the opinion of Buffon and some other naturalists; who assert, that Lions possess greater strength and ferocity according as they are removed from the haunts of man; and that the most formidable character is to be expected in those that frequent only the burning and sandy deserts of the interior of Asia and Africa.

Felix Cassel, the keeper of the Lions, asserts that the tradition of these animals being terrified at the crowing of a cock is very far from being founded in fact. He has known a Lion catch two or three cocks, and in a few minutes devour them with great eagerness.

In confinement the Lion is usually allowed about four pounds weight of raw flesh for his daily subsistence; and he seldom laps more than a quart of water in the day. However gentle and docile he may have been rendered by his keepers, no one can approach him during the time of his feeding, without almost a certainty of his avenging the

interruption. Even where the animals have become attached to dogs that have been put into their dens, it has been *generally* considered necessary to separate them when the Lions were fed. None of the animals can on any account be fed from the hand even of their most intimate keeper.—The value of a full-grown Lion, in England, is now about 300*l.* whilst a Lioness is not worth much more than 100*l.*

Mr. Brown tells us, that while he was resident at Dar Fûr, in Africa, he purchased two Lions, one of which was only four months old. By degrees, he rendered this latter animal so tame that it acquired most of the habits of a dog. It satiated itself twice a-week with the offal of the butchers, and then commonly slept for several hours successively. When food was given them, they were not only furious to each other, but to any one who approached them; excepting, however, these intervals, though both were males, Mr. Brown never saw them disagree, nor exhibit any signs of ferocity towards men. Even lambs passed by them unmolested. The Sultan had also two tame Lions, which their attendant always brought into the market to be fed.

The roaring of the Lion when in quest of prey resembles the sound of distant thunder; and, being re-echoed by the rocks and mountains, appals the whole race of animals, and puts them to a sudden flight; but he frequently varies his voice into a hideous scream or yell.

He is commonly said to devour as much at once as will serve him for two or three days; and, when satiated with food, to remain in a state of retirement in his den, which he seldom leaves except for the purpose of prowling about for prey. His teeth are so powerful, that he breaks the bones of animals with perfect ease, and often swallows them along with the flesh. His tongue is furnished with reversed prickles, so large and strong as to be capable of lacerating the skin. When he is enraged, or in want of food, he

erects and shakes his mane, and beats his tail with considerable violence against his back and sides. In this state, the inhabitants of the Cape assert, it is certain death to any person who happens unfortunately to approach him; but when the mane and tail are at rest, and the animal is in a placid humour, travellers may in general pass near him with safety. The temper of the Lioness is said to be not so easily discovered: when, however, she is attacked with her young, she seems insensible to her own wounds; and, with her head to the ground, and her eyes fixed upon those who would deprive her of her progeny, she seldom fails either to save them or perish in their defence.

The royal dam looks round with proud disdain,
Lashes her sides and curls her flowing mane;
No danger fears, but, willing to engage,
With chafing jaws she churns the frothy rage.
Redoubled fires flash from her rolling eyes,
Clods, scatter'd, fly, and dusty columns rise.
Roaring she frights the herd, and shakes the plain,
Mocks the slung stone, and snaps the spear in twain;
Still guards her young, the hunter's motion thwarts,
And wrenches from her sides the reeking darts,
But when death hovers o'er her swimming eyes,
And clotted on the ground life's wasted treasure lies;
When doubtful staggers own the killing wound;
Regardless of herself she looks around,
O'er her dear cub her sinking head reclines,
In death defends, nor at her fate repines:
But dreads to see the wretch a captive made,
To hear him roar, and call in vain for aid.

The Lioness is smaller than the Lion, and destitute of a mane. She brings forth her young-ones in the spring, in the most sequestered places, and produces four or five at a litter. These, on their first appearance, are about the size of a small pug dog; and they continue at the teat for nearly twelve months.

Kolben, who seems, unaccountably, to have been more partial to the flesh of rapacious animals than that of most others, says that the Lion is frequently eaten at the Cape, and that the flavour is excellent, being greatly like that of venison.

THE TIGER*.

At the same time that he is the most beautiful, the Tiger is certainly one of the most ferocious of quadrupeds. Indeed, so sanguinary is his disposition, that there is no animal, however strong and powerful, that he will not venture to attack. Such furious combats have taken place between the Lion and Tiger, that both animals have frequently been known to perish, rather than give up the contest.

He commits horrid ravages among the flocks and herds, in the countries where he resides; and neither the sight nor the opposition of man has any power to make him desist. When undisturbed, he plunges his head into the body of the animal, and drinks large draughts of blood, the sources of which are generally exhausted before his thirst is appeased.

His muscular strength is excessively great. We are assured, that a peasant in the East Indies had a Buffalo fallen into a quagmire; and while he went to call for

* DESCRIPTION. The Tiger is about the same size as the Lion. The head and body are smooth, of a brownish or tawny yellow colour, with long transverse stripes.

He is a native of various parts both of Africa and Asia, but is principally found in India and the Indian Islands.

SYNONYMS *Felis tigris*. *Linnaeus*.—Le Tigre. *Buffon*.—Royal Tiger. *D'Obsonville*.—*Shaw's Gen. Zool. Pl. 83, from Catton's Animals*.—*Bew. Quad. 206*.

assistance, an immense Tiger came, that immediately drew out the animal, on which the united efforts of several men had been of no effect. When the people returned, the first object they beheld was the Tiger with the Buffalo thrown over his shoulder: he was carrying it away, with the feet upward, towards his den. As soon, however, as he saw the men, he let fall his prey, and instantly fled to the woods; but he had previously killed the Buffalo, and sucked its blood. It may be here observed, that some of the East Indian Buffalos weigh above a thousand pounds, which is twice as heavy as the ordinary run of our black-cattle: whence we may form a conception of the enormous strength of this rapacious animal, that could thus run off with a weight double that of itself.

M. D'Obsonville was present at a terrible combat between a Tiger and an Elephant, in the camp of Hyder Ali. The Tiger, not yet of full strength (for he did not seem more than four feet high,) was brought into the area, and fastened with a chain to a stake, round which he could turn freely. On one side, a strong and well-taught elephant was introduced by his keeper. The amphitheatre was enclosed by a triple rank of lance-men. The action, when it commenced, was furious; the Elephant, however, after receiving two deep wounds, proved victorious. But from an encounter like this, where the animal seemed a feeble one of its species, and was at the same time restrained by chains, we cannot form an accurate judgment of its powers in a state of liberty. M. D'Obsonville says, that although four or five Elephants would have nothing to fear from a greater number of Tigers, yet, by what he could remark from this exhibition, he was of opinion, that when the Tiger is in full possession of his faculties, he must be more than equal to the Elephant in single combat.

The method of the Tiger's seizing his prey in his native

wilds is, by concealing himself from view, and springing, with horrible roar, on his object, which he carries off into the recesses of the forest, having first, if undisturbed, sucked out the blood. His cry, in the act of springing on the victim, is said to be hideous beyond conception; and we are told that, like the Lion, if he misses his object, he makes off without repeating the attempt. He seems to prefer mankind to any other prey, when he can procure them by surprise; but he seldom makes an open attack upon any animal capable of resistance.

In the beginning of the last century, a company, seated under the shade of some trees near the banks of a river in Bengal, were alarmed by the unexpected sight of a Tiger, preparing for its fatal spring; when a lady, with almost unexampled presence of mind, unfurled a large umbrella in the animal's face; which, being confounded by so extraordinary and sudden an appearance, instantly retired, and thus gave them an opportunity of escaping from its terrible attack.

Another party had not the same good fortune; but, in the height of their entertainment, in an instant one of their companions was seized and carried off by a Tiger.—But the fatal accident which a few years ago occurred in the East Indies, must be still fresh in the memory of all who have read the dreadful description given by an eye-witness of the scene. “We went (says the narrator) on shore on Sangar Island, to shoot deer; of which we saw innumerable tracks, as well as of Tigers: we continued our diversion till nearly three o'clock; when, sitting down by the side of a jungle to refresh ourselves, a roar like thunder was heard, and an immense Tiger seized our unfortunate friend *, and rushed again into the jungle, dragging him

* Mr. Monro, the son of Sir Hector Monro, Bart. This fatal event took place in the year 1792.

through the thickest bushes and trees, every thing giving way to its monstrous strength; a Tigress accompanied his progress. The united agonies of horror, regret, and fear, rushed at once upon us. I fired on the Tiger; he seemed agitated. My companion fired also; and in a few moments after this, our unfortunate friend came up to us, bathed in blood. Every medical assistance was vain; and he expired in the space of twenty-four hours, having received such deep wounds from the teeth and claws of the animal, as rendered his recovery hopeless. A large fire, consisting of ten or twelve whole trees, was blazing near us at the time this accident took place, and ten or more of the natives were with us. The human mind can scarcely form any idea of this scene of horror. We had but just pushed our boat from this accursed shore, when the Tigress made her appearance, almost raging mad, and remained on the sand all the while we continued in sight."

On the borders of Tartary, Tigers are very frequent; and in so populous an empire as China, it would seem impossible for them to have remained till the present day unextirpated. In the northern roads, hundreds of travellers are seen with lanterns carried before them, to secure them from these ravenous animals. In some parts of India, they are particularly fatal to wood-cutters and labourers about the forests; and they have been known to swim to boats at anchor at little distance from the shore, and snatch the men from aboard.—In Java, they are much dreaded, from their frequently carrying off the travelling inhabitants. When any person of consequence goes out into the country, he has with him men who blow incessantly a kind of small French-horns, the shrill sound of which frightens these creatures entirely away.—The hunting of Tigers is a favourite amusement with some of the Eastern princes; who go in search of them, attended by

considerable bodies of men, well mounted, and armed with lances. As soon as the animals are roused, they are instantly attacked on all sides, with pikes, arrows, and sabres, and are presently destroyed. This diversion is, however, always attended with danger; for if the Tiger feels himself wounded, he seldom retreats without sacrificing one of the party to his vengeance. There are men who, covered with a coat of mail; or even armed only with a shield, a poinard, and a short scymitar, will dare to attack these blood-thirsty animals singly, and fight with them, life for life; for, in combats of this nature, there is no other alternative than to vanquish or to fall.

The inhabitants of these countries predict their success or losses by omens taken from this animal. If they are marching against an enemy, and a Tiger is seen flying nearly in the same direction, victory is always supposed to be certain. But as it must of course happen that the reverse frequently takes place, they are never in want of a subterfuge to justify a similar augury.

The roar of the Tiger is said to be exceedingly dreadful. It begins by intonations and inflections, deep, melancholy, and slow: presently it becomes more acute; when suddenly exerting himself, the animal utters a violent cry, interrupted by long tremulous sounds, which, together, make a distracting impression upon the mind. It is chiefly in the night that this is heard; when silence and darkness add to the horror, and his roarings are repeated by the echoes of the mountains.

The Tiger, if taken young, may for a short time at least, till his ferocity comes with his age, be in some measure domesticated, and rendered mild and playful to his keepers.—A beautiful young Tiger, brought from China, in the year 1790, (when only ten months old,) in the Pitt East-Indiaman, was so far domesticated as to admit of 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 on its back, as upon a pillow, while it lay stretched out upon the deck. In return for this indulgence, it would, however, now and then steal their meat. Having one day stolen 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 boltsprit; climb about the ship like a cat; and perform a number of other tricks, with an agility that was truly astonishing. There was a dog on board, with which it would often play in the most diverting manner. This animal was taken on board the ship when it was only a month or six weeks old, and arrived in England before it had quite completed its first year. On its arrival it was presented to the king, and was afterwards deposited in the Tower of London, where it still remains. Although it has now been there nearly fifteen years, it is yet perfectly good-natured, and has in no instance been guilty of any savage or mischievous tricks. It is called *Harry*, and to that name answers all the commands of its keepers.

In the year 1801, one day after this Tiger had been fed, his keeper put into the den to him a small, rough, black, Terrier puppy, a female. The beast suffered it to remain uninjured, and soon afterwards became so much attached to it, as to be very restless and unhappy whenever the animal was taken away to be fed. On its return the Tiger invariably expressed the greatest symptoms of pleasure and delight, always welcoming its arrival by gently licking over every part of its body. In one or two instances, the Terrier was left in the den, by mistake, during the time the Tiger had his food. The dog sometimes ventured to eat along with him, but seldom without his appearing

dissatisfied with the liberty. This Terrier, after a residence with the Tiger of several months, was removed to make way for a little female Dutch mastiff. It was thought advisable, before the Terrier was taken away, to shut up the little mastiff for three or four days among the straw of the Tiger's bed, to take off, if possible, any smell that might be offensive to the animal. The exchange was made soon after the animals had been fed: the Tiger seemed perfectly contented with his new companion, and immediately began to lick it as he had before done the Terrier. It seemed at first in considerable alarm with so formidable an inmate, but in the course of the day became perfectly reconciled to its situation. This diminutive creature he would suffer to play with him, with the greatest good-nature. I have myself seen it bark at him, and bite him by the foot and mouth, without his expressing the least displeasure. When the dog, in its frolic, seized his foot, he merely lifted it up out of its mouth, and seemed otherwise heedless of its attacks. During the time she was in the habit of daily visiting the Tiger, she happened to be with young, and at the time of parturition was necessarily absent from him two or three whole days. The Tiger in this absence was extremely agitated and uneasy, as he was afterwards whenever she happened to be detained from him a greater while than usual in feeding her young ones. She died about five weeks after this time, supposed to have been trodden upon by some person who came to see the animals; and many days elapsed before the Tiger became reconciled to her absence.

Strange dogs have several times been put into the Tiger's den after his feeding, and he has in no instance attempted to injure them. Mr. Edward Cross, the late keeper, informs me that the animal's docility is such, that he thinks he could himself with safety venture into the den. —The ship-carpenter, who came over with the Tiger,

after an absence of more than two years, came to the Tower to see him. The animal instantly recognised a former acquaintance, rubbed himself backward and forward against the grating of his den, and appeared highly delighted. Notwithstanding the urgent request that he would not expose himself to the danger, the man begged to be let into the den with so much entreaty, that he was at last suffered to enter. The emotions of the animal seemed roused in the most grateful manner. He rubbed against him, licked his hands, fawned upon him like a cat, and in no respect attempted to injure him. The man remained here for two or three hours; and he at last began to fancy there would be some difficulty in getting out alone. Such was the affection of the animal towards his former friend, and so close did he keep to his person, as to render his escape by no means so easy as he had expected. With some care, however, he got the Tiger beyond the partition of the two dens, and the keeper, watching his opportunity, closed the slide, and separated them.

The Tigress, like the Lioness, produces four or five young ones at a litter. She is at all times furious; but her rage rises to the utmost extremity when robbed of her offspring. She then braves every danger; and pursues her plunderers, who are often obliged to release one of their captives in order to retard her motion. She stops, takes it up, and carries it to the nearest covert; but instantly returns, and renews her pursuit, even to the gates of buildings, or the edge of the sea: and when her hope of recovering her offspring is lost, she expresses her agony by howlings so hideous as to excite terror wherever they are heard.

The skin of the Tiger is in great esteem in all the eastern countries; and particularly in China, where the mandarins cover their seats of justice with it. It is also applied to many other ornamental and useful purposes. The Indian

physicians attribute medical virtues to various parts of the Tiger's body.

THE PANTHER*.

In nearly all its habits of life the Panther resembles the Tiger. Like that ferocious beast, he lurks in ambush amongst bushes or verdure, on the borders of the forests, and springs with a sudden and tremendous leap on such animals as pass by. So prompt, so rapid, and so well timed are his movements, that few escape. In vain may the wretched victim seek for refuge even in the trees: the Panther, notwithstanding the size and the weight of his body, still pursues, with an agility which seems almost incredible, and there dispatches his victim.

The Panther has none of the noble qualities of the Lion. His thirst for blood is insatiable; and his ferocity is consequently such, that even when in the power of man, and in his gentlest moments, he seems rather to be subdued than tamed.

One of these animals which was seen by the Comte de Buffon, had, he says, a ferocious countenance, and a restless eye: his motions were precipitate, and his cry similar to that of an enraged dog, but more strong and harsh. This individual, like nearly all those that are brought into Europe, was a native of Barbary; and was taken in the forests adjacent to Mount Atlas.

* DESCRIPTION. The length of the Panther is usually more than six feet, exclusive of the tail, which is about three feet long. The colour of the upper parts of the body is bright tawny-yellow, with numerous black, roundish, or somewhat annular marks, several of which have in the centre of each a black spot. The under parts of the body are white.

SYNONYMS. *Felis pardus*. *Linnaeus*.—*La Panthère*. *Buffon*.—*Shaw's Gen. Zool. Pl. 84. from Buffon*.—*Bew. Quad. p. 212*.

The mode adopted to destroy the Panther is usually this. A bait, consisting of a piece of flesh, is suspended on a tree, in the immediate neighbourhood of which the hunter has previously erected a hut for his own concealment and security. The smell of the flesh attracts the animal to the spot, and, whilst he is in the act of seizing it, the hunter shoots him, with an aim so correct as almost always to wound him mortally. On the following day, and not before, he ventures to come out from his hiding place, and, by means of a dog trained for the purpose, tracks the animal to his retreat. If he is still alive, the dog inevitably falls a sacrifice to his rage, and his cries give warning to the hunter to retreat from similar danger; but if he is dead, which most commonly is the case, the man seizes upon his prize unmolested.

An instance is recorded by Poirer, of a moor who was pursued by a wounded Panther. He says, that the man escaped only by the stratagem of throwing a part of his clothes upon a bush as he passed by it. These the animal sprang upon and tore into a thousand fragments.

THE OUNCE*, AND HUNTING LEOPARD†.

The inhabitants of several provinces of Persia, tame the Ounce, for the purpose of employing it in the chase. In

* DESCRIPTION. The Ounce is much smaller than the Panther, its body seldom exceeding the length of about three feet and a half. The hair is long and somewhat shaggy. Its colour is a tawny white, with numerous irregular black marks. The length of the tail is about three feet.

SYNONYMS. *Felis Uncia*. *Linnaeus*.—L'Once. *Buffon*.—*Shaw's Gen. Zool. Pl.* 87.

† DESCRIPTION. The Hunting Leopard is about the height of a large Greyhound; of a light tawny brown colour, marked with

the hot climates of Asia dogs are rarely to be found, unless they have been transported thither from Europe; and even in this case they soon lose not only their voice, but their faculty of hunting.

The scent of the Ounce is inferior to that of the dog, and he consequently hunts almost wholly by the eye; but so perfect are all his other faculties, that he is infinitely more expeditious in the killing of game than any number dogs could possibly be.

Some of these animals are so small, that the Persians are able to carry them behind them on horseback, upon small leathern pads made for the purpose; and they are so gentle towards those who are accustomed to attend and feed them, that they will without difficulty suffer themselves to be handled and caressed. The horseman no sooner perceives a gazelle or an antelope within proper distance, than he makes the Ounce descend; and, if the animal is at all expert in his business, he generally is enabled to seize his prey by the neck in five or six leaps. Such is his extraordinary vigour, that a ditch, or a wall several feet in height, is no impediment to his career.

The Hunting Leopard, which is an Indian animal, is likewise frequently tamed, and used in the chase of Antelopes. It is carried in a kind of small waggon, chained and hooded, lest, on approaching the herd, it should be too precipitate, or not make choice of a proper animal. When first unchained, it does not immediately spring towards its prey; but winds with the utmost caution along

numerous circular black spots. The legs and tail are long. Its form is more lengthened than that of the Tiger, and the chest is narrower.

SYNONYMS. *Felis Jubata*. *Linnaeus*.—Jaguar ou Léopard. *Buffon*.—*Shaw's Gen. Zool. Pl.* 86.

the ground, stopping at intervals, and carefully concealing itself till a favourable opportunity offers: it then darts on the herd with astonishing swiftness, and overtakes them by the rapidity of its bounds. If, however, in its first attempt, which consists of five or six amazing leaps, it does not succeed, it loses breath: and, finding itself unequal in speed, stands still for a while to recover; then giving up the point for that time, quietly returns to its keeper.

THE LEOPARD *.

The general appearance of the Leopard is ferocious and cruel. His eye is restless, his countenance forbidding, and all his motions are short and precipitate. In his general habits he resembles the Panther, lying in ambush for prey, and from thence springing upon and devouring almost every species of animal which he has the strength to overcome. Occasionally these beasts have been known to descend in great numbers from their lurking places, and commit dreadful slaughter among the numerous herds of cattle which graze in the plains.

In the year 1708, if we may believe the account recorded by Kolben, two Leopards, a male and female, with three young ones, entered a sheep-fold at the Cape. The old ones killed nearly a hundred sheep, and regaled themselves with the blood. When they were satiated, they tore a carcase into three pieces, and gave one of these to each of their young ones. They then took each a whole sheep;

* DESCRIPTION. This animal is about four feet in length; of a yellowish colour, and marked with numerous annular spots. The tail is about two feet and a half long.

It is an inhabitant of Senegal, Guinea, and most parts of Africa.

SYNONYMS. *Felis Leopardus*. *Linnaeus*.—Le Leopard. *Buffon*.—*Shaw's Gen. Zool. Pl 83*.—*Bew. Quad. 214*.

and, thus laden, began to move off. Having been observed, however, they were way-laid on their return, and the female and three young ones killed; but the male effected his escape. The same writer also informs us, that the Leopard will not eat carrion, nor deign to touch what has been killed by any other beast.

The negroes take these beasts by means of pitfalls covered slightly over with hurdles, on which a piece of flesh is placed as a bait. They are not, however, employed in the chase, like the Ounce or the Hunting Leopard.

The late Sir Ashton Lever had a Leopard, which he kept in a cage at Leicester House. It had become so tame, as always to seem highly pleased and gratified by caresses and attention, purring and rubbing its sides against the cage like a cat. Sir Ashton gave it to the royal ménagerie in the Tower; where a person, before acquainted with it, saw it after an interval of more than a year, notwithstanding which it appeared instantly to recognise him, and began as usual to renew its caresses.

The flesh, says Kolben, is white and well-tasted, eating much better than the finest veal! It is both nourishing and delicious; that of the young is as tender as chicken!—The skins are brought into Europe, where they are in great estimation; some of the most beautiful selling for more than ten guineas each.

THE PUMA, OR SOUTH AMERICAN LION*.

By the Spaniards of Peru and Chili this animal has been denominated the Lion of South America; and in its

* DESCRIPTION. The length of the body of the Puma is about five feet, and its height about two feet and a half; and the tail is about two feet long. The head is round, and the ears are short.

colour, its voice, and general shape, except that it is destitute of mane, it is not altogether unlike that animal.

The Puma inhabits the thickest forests, and the most inaccessible mountains, from whence it makes incursions into the plains to attack domestic animals, particularly horses, whose flesh it prefers to that of any other. In its mode of seizing its prey it resembles the cat: it approaches by drawing itself upon its belly; it glides softly through the shrubs and bushes, conceals itself in the ditches, or, if it shews itself, assumes a mild and fawning appearance, and, watching the favourable opportunity of seizing the animal which it has marked for its victim, at one leap fastens itself upon its back, seizes it with its left paw and teeth, in such a manner as to render it impossible for it to escape, while with the right paw, in a few minutes, it tears it to pieces. It then sucks the blood, devours the flesh of the breast, and carries the carcase into the nearest wood, where it conceals it with leaves and boughs of trees, in order to eat it at leisure.

As it is a common practice for the husbandmen to fasten two of their horses together in the fields, whenever the Puma finds them in this situation, (says Molina,) it kills one and drags it away, compelling the other to follow by striking from time to time with its paw, and in this manner almost always succeeds in getting possession of both. Its favourite haunts are the streams to which animals usually repair to drink. Here it conceals itself upon a tree, and scarcely ever fails of seizing one of them. The horses, however, have an instinctive dread of these places, and

Its colour is a pale, brownish red, somewhat darker in some parts than in others. The under parts are white.

SYNONYMS. *Felis Puma*. *Linnaeus*.—*Le Cougar*. *Buffon*.—*Puma*, by the Peruvians.—*Pagi*, by the Mexicans.—*Shaw's Gen. Zool. Pl. 89*.—*Bew. Quad. p. 209*.

even when pressed by thirst, approach them with great caution, carefully examining on every side to discover if there is danger. The Cows defend themselves well against the Puma.—As soon as he appears they range themselves in a circle around their calves, with their horns turned towards the assailant, await his attack in that position, and not unfrequently destroy him. The mares, it is said, when there are a number of them, place themselves in the same manner, though in an inverted order, around their colts; and attempt to repel their enemy with their heels, but one of them almost always becomes a victim to this proof of maternal love.

All those animals that have not young ones, attempt on the approach of the Puma to save themselves by flight. The ass alone, from his want of speed, is compelled to defend himself with his heels, and frequently proves successful. But should the Puma, notwithstanding his efforts, leap upon his back, he immediately throws himself upon the ground, and endeavours to crush him, or runs with all his force against the trunks of trees, holding his head down so as not to dislocate his neck. By these means he generally succeeds in freeing himself from his assailant.

The Puma is naturally a coward, and the appearance of even a woman or child is able to make him fly and abandon his prey. He is hunted with dogs trained for the purpose, and, when hard pressed by them, either leaps upon a tree, seeks an asylum upon a rock, or, placing himself against the trunk of some large tree, defends himself in a furious manner, killing many of his enemies, until the hunter, watching his opportunity, slips a noose around his neck and strangles him.

In captivity the Puma loses much of his savage nature, and may be rendered almost as gentle as a domestic animal. A Puma mentioned in the supplementary volumes of the Comte de Buffon, would freely suffer himself to be patted

with the hand; and children were frequently known to mount astride upon his back, without his exhibiting the slightest symptom of resentment.

THE JAGUAR, OR SOUTH AMERICAN TIGER*.

The Jaguar has most of the habits, and is endowed with nearly all the propensities of the Puma. He is so strong and voracious, that he is able to seize and carry off a sheep or deer with the utmost facility. And yet he is so cowardly, that he may sometimes be put to flight by a shout. Cows and horses are not always secure from his attack. These animals, as he is unable to drag them to his retreat in the forests, he tears to pieces upon the spot, and satiates himself with their blood. The strongest of the wild boars he is able to overthrow by a single stroke of his paw. Few of the American animals are, in point of strength, a match for the Jaguar, except the enormous serpents, which frequent the savannahs; and these, it is currently stated, by entwining themselves round his body, are able to strangle and destroy him.

The Jaguar is not by any means an indolent animal, as hath been sometimes asserted. He constantly attacks dogs; oftentimes commits great devastation among flocks; and, in the deserts, is formidable even to men. In a journey made by M. Sonnini, through the forests of Guiana, he and

* DESCRIPTION. The Jaguar is somewhat larger than the Wolf, of a brownish yellow colour, variegated on the upper parts of the body with streaks, and open oblong spots or markings of black. The thighs and legs also have black spots, but without central spaces; the breast and belly are whitish. The tail is about two feet and a half in length.

It is a native of Brazil, and several other parts of South America.

SYNONYMS. *Felis Onca*. *Linnaeus*.—*Le Jaguar*. *Buffon*.—*Brazilian Cat*. *Pennant*.—*Shaw's Gen. Zool. Pl. 87*.—*Bew, Quad. p. 217*.

his party were tormented with one of these beasts, for three successive nights; and yet the animal avoided all the attempts that were made to destroy him. But finding that large fires were constantly kept up, he at last left them, venting a dismal howl at his departure.

The power which these animals have of ascending trees, is very remarkable. M. Sonnini states, that he has seen the impressions of the talons of a Jaguar, on the smooth bark of a tree betwixt 40 and 50 feet in height, which had not a single branch except upon the very top. He says that it was easy to remark the efforts the animal had made: although he pierced through the bark, deeply into the wood, with his claws, he had evidently slipped more than once; but had surmounted every difficulty, and, attracted, no doubt, by some prey which was peculiarly alluring, had attained the summit.

THE CAPE CAT*.

These elegant animals, which, in size, are considerably larger than the Domestic Cat, are found wild in the mountains near the Cape of Good Hope. In the places adjacent to their retreat, they are very destructive to rabbits, young antelopes, lambs, and even to all the feathered race. In disposition, however, they are by no means so fierce as the generality of their tribe; but when caught young, may easily be rendered tame and domestic.

* DESCRIPTION. The colour of the Cape Cat is a bright tawny, marked on the back with oblong black streaks, and in the other parts with blotches of the same. A skin, measured by Mr. Pennant, was found to be three feet, from the nose to the tail.

SYNONYMS. *Felis Capensis*. *Linnaeus*.—Tiger Cat of the Cape of Good Hope. *Forster*.—Tiger Bush Cat. *Kolben*.—Noussi. *Labat*.—Cape Cat. *Pennant*.—*Shaw's Gen. Zool*, Pt. 88.

In the year 1795, when Dr. Forster was at the Cape, he saw one of them, which was about nine months old. He says that its manners and economy seemed perfectly analogous to those of our domestic Cats. It ate fresh raw meat, and appeared very much to attach itself to its feeders and benefactors. After Dr. Forster had fed it a few times, it followed him like a tame favourite Cat. It was fond of being stroked and caressed; rubbed its head and back against the person's clothes who fed it, and seemed very desirous of being noticed; and it purred in the same manner as our Domestic Cats do, when they are pleased.

THE WILD CAT*.

The manners of the Wild Cat are nearly allied to those of the Lynx, and to those of several others of the larger species of its tribe. It may, with propriety, be denominated the British Tiger, since it is by far the fiercest and most destructive beast that is found in our island.

These animals are sometimes caught in traps, and sometimes killed with the gun. It is, however, dangerous to merely wound them, for in this case they have frequently been known to attack the assailant; and their strength is so great as to render them no despicable enemy.—At Barnboro', a village between Doncaster and Barnsley, in Yorkshire, there is a tradition extant of a serious conflict that once took place between a Man and a Wild Cat. The

* DESCRIPTION. This animal has a larger head and stronger limbs than the Domestic Cat. Its colour is a pale yellowish-gray, with dusky stripes; those on the back running lengthwise, and those on the sides transversely and in a curved direction. The tail is shorter than in the domestic kinds, and is barred with dusky rings.

SYNONYMS. *Felis Catus*. Linn.—Common Cat. Penn.—Chat Sauvage. Buffon.—Bingley's Mem. of Brit. Quad. Pl. 11.

inhabitants say, that the fight commenced in an adjacent wood, and that it was continued from thence into the porch of the church. I do not recollect in what manner it is reported to have begun; they tell us, however, that it ended fatally to both combatants, for each died of the wounds it received. A rude painting in the church commemorates the event; and (as in many similar traditions) the accidentally natural red tinge of some of the stones, has been construed into bloody stains, which all the properties of soap and water have not been able to efface.

In Jamaica, from the sufficiency of food which is at all seasons to be procured in the woods and mountains, the Domestic Cat is very apt to become wild. In order to counteract this propensity, the country people sometimes split or cut off its ears. This is said to be generally effectual, from the circumstance of these tender organs being thus more exposed to inconvenience from the rain or dews, than otherwise they would be. In England also, the Domestic Cats will occasionally escape to the woods and become wild. In Monshalm Thrift, a large cover belonging to Sir H. P. St. John Mildmay, sixteen of these animals were killed by a pack of Fox-hounds in four days, drawing the cover for Foxes.

Wild Cats breed in hollow trees, and produce four young-ones at a litter. They are yet found in several of the mountainous districts of Scotland and Ireland; and occasionally amongst the woods that border the lakes of the North of England. In the neighbourhood of the places which they inhabit, they oftentimes make destructive havock among the lambs and poultry.

The Domestic Cat. The manners and disposition of the Cat seem to be entirely changed by education; and, although it does not exhibit towards mankind the affectionate attachment of the Dog, yet it is by no means

destitute either of gentleness or gratitude. These animals are not, like the Dog, attached to our persons : their chief attachment seems to be to the houses in which they have been brought up. Instances are very common of Cats returning, of their own accord, to the place from whence they have been carried ; though at the distance of many miles, and even across rivers, where they could not possibly have had any knowledge either of the road, or of the direction that would lead them to it. This may perhaps arise from their having been acquainted, in their former habitations, with all the retreats of the mice, and the passages and outlets of the house ; and from the disadvantage which they must experience in these particulars by changing their residence.

Few animals exhibit more maternal tenderness, or show a greater love for their offspring, than the Cat. The assiduity with which she attends them, and the pleasure which she seems to take in all their playful tricks, afford a grateful entertainment to every observer of nature. She has also been known not only to nurse with tenderness the young of different individuals of her own species, but even those of other kinds of animals.

A friend of the Rev. Mr. White of Selborne, had a little helpless *Leveret* brought to him, which the servants fed with milk from a spoon ; and about the same time his Cat kittened, and the young were dispatched and buried. The Hare was soon lost ; and was supposed to have been killed by some Dog or Cat. However, in about a fortnight, as the master was sitting in his garden, in the dusk of the evening, he observed his Cat, with tail erect, trotting towards him, and calling with little short inward notes of complacency, such as these animals use towards their kittens ; and something gamboling after her, which proved to be the *Leveret*, that the Cat had nourished with her milk, and continued to support with great affection. Thus was a granivorous animal nurtured by a carnivorous and

predacious one!—This strange affection was probably occasioned by those tender maternal feelings, which the loss of her kittens had awakened; and by the complacency and ease she derived from the procuring of her teats to be drawn, which were too much distended with milk. From habit, she became as much delighted with this foundling, as if it had been her real offspring.

“A boy (says Mr. White) had taken three young Squirrels in their nest. These small creatures he put under a Cat who had lately lost her kittens; and found that she nursed and suckled them with the same assiduity and affection as if they had been her own progeny.—So many persons went to see the little Squirrels suckled by a Cat, that the foster-mother became jealous of her charge, and in pain for their safety; and therefore hid them over the ceiling, where one died.—This circumstance showed her affection for these foundlings, and that she supposed the Squirrels to be her own young.”

Some years ago a sympathy of this nature took place, in the house of Mr. James Greenfield of Maryland, betwixt a *Cat* and a *Rat*. The Cat had kittens, to which she frequently carried Mice and other small animals for food; and among the rest she is supposed to have carried to them a young Rat. The kittens, probably not being hungry, played with it; and when the Cat gave suck to them, the Rat likewise sucked her. This having been observed by some of the servants, Mr. Greenfield was informed of it. He had the kittens and Rat brought down stairs, and put on the floor; and in carrying them off, the Cat was remarked to convey away the young Rat as tenderly as she did any of the kittens. This experiment was repeated as often as any company came to the house, till great numbers had become eye-witnesses of the preternatural affection.

Cats seem to possess something like an additional sense, by means of their whiskers, which have, perhaps, some ana-

logy to the antennæ of Moths and Butterflies. These whiskers consist not only of long hairs on their upper lips, but also of four or five long hairs standing up from each eye-brow, and also two or three on each cheek; all which, when the animal erects them, make, with their extremities, so many points in the periphery of a circle equal (at least) in extent, to the circumference of their own bodies. With this instrument, it is supposed that, by a little experience, they can at once discover whether any aperture among hedges or shrubs (in which animals of this genus live in their wild state) is large enough to admit their bodies; which to them is a matter of the greatest consequence, whether pursuing or pursued. They have likewise a power of erecting and bringing forward the whiskers on their lips; which probably is for the purpose of feeling whether a dark hole be further permeable or not.

It is generally supposed, that Cats are able to see in the dark: but, though this is not absolutely the case, it is certain that they can see with much less light than most other animals; owing to the peculiar structure of their eyes, the pupils of which are capable of being contracted or dilated in proportion to the degree of light by which they are affected. In the day-time, the pupil of the Cat's eye is perpetually contracted, and sometimes into a mere line; for it is with difficulty that this animal can see by a strong light: but in the twilight the pupil resumes its natural roundness, and it enjoys perfect vision.

In order to preserve their fur clean, these animals wash their faces, and generally quite behind their ears, every time they eat. As they cannot lick those places with their tongues, they first wet the inside of the leg with the saliva, and then repeatedly rub them over with it. This Dr. Darwin, whimsically enough, esteems an act of reasoning; "because," he says, "a means is used to produce an effect;

which means seems to be acquired by imitation, like the greatest part of human arts."

The fur of the Cat, being generally clean and dry, readily yields electric sparks when rubbed; and if a clean and perfectly dry Domestic Cat be placed, in frosty weather, on a stool with glass feet, or insulated by any other means, and rubbed for a little time in contact with the wire of a coated phial, the phial by this means will become effectually charged.

No experiment can be more beautiful than that of setting a kitten, for the first time, before a looking-glass. The animal appears surprised and pleased with the resemblance, and makes several attempts at touching its new acquaintance; and, at length, finding its efforts fruitless, it looks behind the glass, and appears highly astonished at the absence of the figure. It again views itself, and tries to touch the image with its foot, suddenly looking at intervals behind the glass. It then becomes more accurate in its observations; and begins, as it were, to make experiments, by stretching out its paw in different directions; and when it finds that these motions are answered in every respect by the figure in the glass, it seems, at length, to be convinced of the real nature of the image.

The following curious fact in the natural history of the Cat is related by Dr. Anderson, in his entertaining work, the *Recreations in Agriculture*:—A Cat belonging to Dr. Coventry, the ingenious Professor of Agriculture in Edinburgh, which had no blemish at its birth, lost its tail by accident when it was young. It had many litters of kittens; and in every one of these there was one or more that wanted the tail, either wholly or in part.

"A Cat (says Browne in his *Natural History of Jamaica*) is a very dainty dish among the Negroes."

The Angora Cat *. When M. Sonnini was in Egypt, he had an Angora Cat in his possession for a long time. It was entirely covered with long silky hairs: its tail formed a magnificent plume; which the animal elevated, at pleasure, over its body. Not one spot, nor a single dark shade, tarnished the dazzling white of its coat. Its nose and lips were of a delicate rose-colour. Two large eyes sparkled in its round head; one of which was a light yellow, and the other a fine blue.

This beautiful animal had even more loveliness of manners, than grace in its attitude and movements. With the physiognomy of goodness, she possessed a gentleness truly interesting. How ill soever any one used her, she never attempted to advance her claws from their sheaths. Sensible to kindness, she licked the hand which caressed, and even that which tormented her. On a journey, she reposed tranquilly on the knees of any of the company, for there was no occasion to confine her; and if M. Sonnini, or some other person whom she knew, was present, no noise whatever gave her the least disturbance.

In Sonnini's solitary moments, she chiefly kept by his side; she interrupted him frequently in the midst of his labours or meditations, by little caresses extremely affecting, and generally followed him in his walks. During his absence, she sought and called for him incessantly, with the utmost inquietude: and, if it was long before he reappeared, she would quit his apartment, and attach herself to the person of the house where he lived; for whom, next to himself, she entertained the greatest affection. She recognised his voice at a distance; and seemed on each

* SYNONYMS. γ *Felis Angorensis*. Linn.—Chat d'Angora. Buffon.
—Angora Cat. Penn.

fresh meeting with him to feel increased satisfaction. Her gait was frank, and her look as gentle as her character. She possessed, in a word, the disposition of the most amiable dog, beneath the brilliant fur of a cat.

"This animal (says M. Sonnini) was my principal amusement for several years. How was the expression of her attachment depicted upon her countenance! How many times have her tender caresses made me forget my troubles, and consoled me in my misfortunes! My beautiful and interesting companion, however, at length perished. After several days of suffering, during which I never forgot her, her eyes, constantly fixed on me, were at length extinguished; and her loss rent my heart with sorrow."

THE LYNX*.

This animal is proverbial for his piercing sight. The ancients even went so far as to believe that he could see through stone walls. For us, however, it is quite sufficient to know that, probably, there is no beast existing which is able to discover its prey at so great a distance as the Lynx.

Most of the northern parts of Europe, of Asia and America, are subject to the depredations of these voracious and destructive beasts. They prefer cold to temperate climates; and it is presumed that they have passed from one continent to the other, through the northern

* DESCRIPTION. The Lynx is four feet in length, exclusive of the tail, which measures about six inches. The ears are erect, and have a long pencil of black hair at the tip. The fur is long and thick. The upper parts of the body are of a pale gray colour, with a reddish tinge, and obscurely marked with small dusky spots. The under parts are white.

SYNONYMS. *Felix Lynx*. *Linnaeus*.—*Le Lynx*. *Buffon*.—*Shaw's Gen. Zool. Pl. 91, from Buffon*.—*Bew. Quad. p. 235.*

regions. They are seldom found in the open plains; but, like the tiger, leopard, and panther, conceal themselves in the thick shelter of woods and forests. Their voice is not easily distinguished from that of the wolf; and, when heard at a distance, the hunters are oftentimes deceived by it.

The Lynx is able to pursue his prey even into the branches of the highest trees. Neither the wild cat, the martin, the ermine, nor even the squirrel, can escape him. He also unrelentingly seizes upon and destroys the stag, the roe-buck, and the hare. When sheep happen to be folded in the neighbourhood of his retreat, he will scratch his way in the earth, under the doors of the fold; and, if not checked by the presence of the shepherd, will commit the most horrible devastations.

Such is the native ferocity of the Lynx, that it is considered impossible to tame and subdue him. In a state of captivity, on the slightest irritation or insult, he expresses his malignity by a kind of snarling scream.

The fur of the Lynx is thick and soft; and, when of a pale or whitish colour, with the spots tolerably distinct, the skins are extremely valuable. The Russians sell them to the Chinese at a rate of from about fifteen shillings to five or six pounds per skin, exclusive of the fore-feet, which are also valuable, and sold separately.

OF THE WEESEL TRIBE*.

These are all carnivorous animals. From their slender and lengthened bodies, short legs, and the very free motion

* These animals have, in each jaw, six sharpish cutting-teeth, with the canine-teeth somewhat longer; a long and slender body, with short legs; a sharpened visage; and, in most species, a longish tail. In some of this tribe, also, the tongue is smooth; and in others, it is furnished with prickles pointing backwards.

allowed in every direction by the loose articulations of the spine, they are well formed for pursuing their prey into the deepest recesses. Constituted by nature to subsist on animals, many of which have great strength and courage, the Weesels possess an undaunted and ferocious disposition.

The species are extremely numerous.

THE ICHNEUMON*.

The estimation in which this animal is held, by the inhabitants of Egypt, and other hot climates, is so great, that it formerly had the honour of a place among their deities. The natural enemy of serpents and other noxious reptiles that infest these countries, it unsparingly attacks them whenever it has opportunity. It combats, without dread, that most fatal of all serpents, the Cobra di Capello †. The eggs of crocodiles it digs out of the sand, and devours; and it even kills great numbers of the young of those tremendous and horrible creatures.

The Ichneumon is domesticated, and kept in houses, both in India and Egypt, where it is found more useful

* DESCRIPTION. The length of the Ichneumon, from the tip of the nose to the end of the tail, is from twenty-four to forty-two inches, of which the tail occupies nearly one-half. Its colour is pale reddish-gray, each hair being mottled with brown or mouse-colour. The eyes are of a bright red; the ears almost naked, small, and rounded; and the nose long and slender. The tail is very thick at the base; from whence it gradually tapers almost to a point, where it is slightly tufted. The hair is hard and coarse, and the legs are short.

SYNONYMS. *Viverra Ichneumon*. Linn.—Egyptian Ichneumon. Kerr.—Great Mangouste. Sm. Buffon.—Ichneumon. Penn.—Shaw's Gen. Zool. Pl. 92.—Bew. Quad. p. 261.

† *Coluber naja* of Linnæus.

than a cat in destroying rats and mice. It is easily tamed, is very active, and springs with great agility on its prey. It will glide along the ground almost like a serpent. It sits upright to eat, uses its fore-feet, and catches any thing that is flung to it. It is a great enemy to poultry, and will feign itself dead to attract them within its reach. The address with which it is able to seize a serpent by the throat, in such a manner as to avoid receiving any injury, is very remarkable. Its manner of combating the Egyptian Asp has been beautifully described by Lucan:—

*Aspidas ut Pharias cauda solertior hostis
Ludit, et iratas incerta provocat umbra :
Obliquansque caput vanas serpentis in auras
Effusæ toto comprehendit guttura morsu
Lentiferam citra saniem : tunc irrita pestis
Exprimitur, faucesque fluunt pereunte veneno.*

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 the throat the nimble seizer flies;
The gasping snake expires beneath the wound,
His gushing jaws with poisonous floods abound,
And shed the fruitless mischief on the ground.

“I had (says M. D'Obsonville, in his *Essays on the Nature of various foreign Animals*) an *Ichneumon* very young, which I brought up.—I fed it at first with milk; and afterwards with baked meat mixed with rice. It soon became even tamer than a cat; for it came when called, and followed me, though at liberty, into the country.

“One day I brought to him a small water serpent alive, being desirous to know how far his instinct would carry him against a being with which he was hitherto totally

unacquainted. His first emotion seemed to be astonishment mixed with anger, for his hair became erect; but in an instant after, he slipped behind the reptile, and with a remarkable swiftness and agility leaped upon its head, seized it, and crushed it between his teeth. This essay, and new aliment, seemed to have awakened in him his innate and destructive voracity; which, till then, had given way to the gentleness he had acquired from his education. I had about my house several curious kinds of fowls, among which he had been brought up, and which, till then, he had suffered to go and come unmolested and unregarded; but, a few days after, when he found himself alone, he strangled them every one, ate a little, and, as appeared, drank the blood of two."

In a wild state, the Ichneumon is said to frequent principally the banks of rivers; and in times of flood, to approach the higher grounds and inhabited places, in quest of prey. He is reported to swim and dive occasionally, in the manner of an otter; and to continue beneath the water for a great length of time. His voice is very soft, somewhat like a murmur; but unless the animal is struck or irritated, he never exerts it. When he sleeps, he folds himself up like a ball; and is not easily awaked.—The Ichneumons are short-lived, but grow very rapidly. In our temperate climates, they cannot, without great difficulty, be either reared or preserved. Whatever care be taken, the frosts incommode them, and they generally fall victims to the change.

THE STRIATED WEESEL, OR SKUNK*.

This is one of three or four species of Weesel, natives of America, whose only mode of defence against their enemies

* DESCRIPTION. The length of this animal, from the nose to the tail, is about 18 inches; and of the tail about 14 inches. The upper

(and it is a perfectly secure one) is to emit from their bodies a vapour so fetid, that few animals can bear to come within its influence. Cattle that are near are so alarmed, as to utter the most dreadful bellowings. Dogs are indeed sometimes trained to hunt them; but, in order to relieve themselves, they are under the necessity of frequently thrusting their noses into the earth. The odour may be smelt to an amazing distance; and so abominable is its stench, as to affect provisions in such a manner that nothing can afterwards make them eatable. When the animal is irritated or killed near a dwelling, the whole place becomes infected; the clothes, provisions, and all the rooms are, in a few minutes, so saturated with the vapour, that no one can live in or use them for a very long time. Clothes, although several times washed, soaked, and dried in the sun, retain their smell sometimes for weeks.

Professor Kalm says, that a Striated Weasel being one day perceived in its cave, a woman, unthinkingly, attacked and killed it. The whole place was in a moment filled with such a dreadful stench, that the woman was taken ill, and continued so for several days; and the provisions were so infected, that they were all thrown away.

It appears that these animals are, in some degree, attached to the society of mankind. They approach without apprehension; boldly enter the country houses to search for eggs, and pass fearlessly, even through the midst of the dogs, who, instead of attacking them, generally run away upon their approach. The husbandmen them-

parts of the body are variegated or striped with black and white. The neck and legs are very short. The tail is clad, towards its extremity, with long, whitish hair.

SYNONYMS. *Viverra putorius*. Linn.—Skunk. Fiskatta. Kalm. Catesby.—Striped Skunk. Kerr.—Conepate. Buffon.—Striated Weasel. Penn.—Shaw's Gen. Zool. Pl. 94.—Bew. Quad. p. 265.

selves are averse to shooting them on such occasions, lest they should fail of killing them outright, and be assailed by their nauseous stench. In order to free themselves from such unwelcome visitors, they have recourse to stratagem. Some of the company begin by caressing the animal, until an opportunity offers for one of them to seize it by the tail and hold it suspended. In this position it is killed without either difficulty or danger.

Strange as it may appear, these animals are sometimes domesticated; and as they never emit their fœtor except when alarmed or irritated, they are not dreaded in this state: "but (an eminent Zoologist justly observes) they ought surely to be treated with the highest attention."

THE HONEY-WEESEL, OR RATEL*.

Formed by nature to be the adversary of the bees, and the unwelcome visitor of their habitations, the Ratel is endowed with a particular faculty of discovering and attacking them within their entrenchments.—As a man placed at the mast-head, can most easily descry a sail or land at a great distance in the evening; so, probably, this time of the day is most convenient for the Ratel to look out for his food. Towards sun-set he issues from his hole: sits upright and holds one of his paws before his eyes, in order to modify the rays of the sun, and at the same time to procure a distinct view of the object of his pursuit: and when, in con-

* DESCRIPTION. From the nose to the tail, the Ratel measures about two feet. Its back is cinereous; and along the sides runs a light-gray stripe that divides this from the belly, which is black. The legs are short; and the claws long, and formed for burrowing.

SYNONYMS. *Viverra mellivora*. Linn.—Honey-Weesel. Shaw.—Ratel. Sparrman.—Bew. Quad. 275.

sequence of peering thus on each side of his paw, opposite to the sun, he sees any bees fly, he knows that they are at this time going straight to their own habitation, and consequently takes care to keep in the same direction in order to find them. He has, besides, the sagacity to follow the *Cuculus Indicator*, a little bird, which flies on, by degrees, with a peculiar and alluring note, and guides him to the bees'-nests.

The Ratel is a native of the Cape of Good Hope, and his hide is so thick and tough that there is scarcely any way of destroying him but by beating him about the head, or plunging a knife into his body.—The shortness of his legs will not permit him to make his escape by flight when pursued by the hounds. He is able, however, sometimes to extricate himself from their clutches by biting and scratching them in a most terrible manner: while, on the other hand, he is perfectly well defended from the assaults of their teeth by the toughness of his hide; for, when a hound endeavours to bite him, it can lay hold only on this part, which instantly separates from the creature's body or flesh, as it is reported to lie loose from the skin, as within a sack; so that, when any one also catches hold of him by the hind part of his neck, and that even pretty near his head, he can turn round as it were, in his skin, and bite the arm that seizes him. It is a remarkable circumstance, that such a number of hounds as would be able collectively to tear in pieces a Lion of moderate size, are said to be sometimes obliged to leave the Ratel dead in appearance only. Is it not therefore probable that Nature, which seems to have destined the Ratel for the destruction of bees, may have bestowed on it a hide so much tougher than those she has given to other animals of the *Viverra* kind, for the purpose of defending it from the stings of these insects?

Those bees'-nests that are built in trees, are in no danger

whatever from the Ratel. In the first transports of his rage at having sought after these bees in vain, he gnaws and bites the trunks of the trees; and these bites are sure marks for the inhabitants of the country, that a bees'-nest is to be found there. I should myself, says Dr. Sparrman, have entertained many doubts concerning these properties attributed to the Ratel, had I not obtained various accounts of this curious animal, exactly corresponding with each other, from many experienced farmers and Hottentots living in different parts of the Cape of Good Hope.

THE CIVET*.

There are few animals more active and nimble than the Civet; jumping about like a cat, in the most animated manner, and running with wonderful speed. It feeds on small animals, but particularly on birds, which it takes by surprise; and it sometimes commits depredations among poultry, when it can steal unperceived into a farm-yard. It is very voracious; and will often roll itself, for a minute or two, on its meat, before eating. One that Barbot had at Guadaloupe was, from the carelessness of his servant, kept without food for a whole day: the animal on the following morning, gnawed his way through the cage in which he was kept, came into the room where M. Barbot

* DESCRIPTION. The Civet is somewhat more than two feet long, and has a tail about half the length of its body. The ground colour is yellowish ash-gray, beautifully marked with large blackish or dusky spots. The hair is coarse; and, along the back, stands up, so as to form a sort of mane. The body is thickish; and the nose sharp, and black at the tip. Three black stripes proceed from each ear, and end at the throat and shoulders.

It is an inhabitant of several parts both of Africa and India.

SYNONYMS. *Viverra Civetta*. Linn.—Civet Cat. *Var.*—Civette. Buffon.—Shaw's *Gen. Zool. Pl.* 95.—Bew. *Quad.* 276.

was writing, and, staring about with sparkling eyes for a few seconds, made a leap of five or six feet at a fine American parrot, that was perched on a piece of wood put into the wall for the purpose. Before his master could run to the relief of the bird, the Civet had torn off its head, and begun to feast on his prey. Though the Civet is naturally savage, it is capable of being tamed, and rendered tolerably familiar. Its voice is stronger than that of a cat, and somewhat resembles the cry of an enraged dog.

This animal is remarkable for the production of the drug called civet, sometimes erroneously confounded with musk. This substance is a secretion formed in a large double glandular receptacle situated at some little distance beneath the tail, and which the creature empties spontaneously. The Dutch keep great numbers alive at Amsterdam, for the purpose of collecting the drug from them. When a sufficient time for the secretion has been allowed, the animal is put into a long wooden cage, so narrow that it cannot turn itself round. The cage being opened by a door behind, a small spoon, or spatula, is introduced through the orifice of the pouch, which is carefully scraped, and its contents put into a proper vessel. This operation is performed twice or thrice a-week; and the animal is said always to produce the most civet after being irritated. The quantity depends in a great measure also on the quality of the nourishment which it takes, and the appetite with which it eats. In confinement, its favourite food is boiled meat, eggs, birds, and small animals, and particularly fish.

While the French army was in Egypt, the king of Dar-fâr sent four Civets to the generals; and some information was at the same time acquired respecting the treatment of the animals in that country. Since very few of them are found there, and these few are brought from a great distance, the inhabitants have found it expedient to

adopt some modes of increasing the produce of the *civet*. They introduce into the bag a small quantity of butter or other fat; then shake the animal violently, and, by beating, irritate and enrage it as much as possible. This, they say, greatly accelerates the secretion; and the fat also by these means imbibes so much of the *civet*, that the women of Dar-für use it upon their hair. To this barbarous usage it is in a great measure owing that the animals become excessively ferocious.

A Civet is kept at present in the Museum of Natural History in Paris, which has been there more than five years. Its odour is at all times very powerful, but unusually so whenever the animal is irritated. It sleeps with its body rolled round, and its head between its legs. This posture it seldom changes either in the night or day; and it sleeps so soundly, that it cannot be roused without severe blows.

With respect to the *civet* procured from Amsterdam, it is less adulterated, and therefore held in higher estimation, than that imported from India or the Levant. Its average value in Holland is about fifty shillings an ounce; but this is subject to considerable fluctuation. The substance is accounted best when new, of a whitish colour, a good consistence, and of a strong, disagreeable smell.—This perfume is excessively powerful; but in small quantities it is more pleasant than musk, to which it bears some resemblance.

THE MEXICAN WEESEL*.

This animal, from the strength of his claws, is enabled to climb amongst the branches of trees with great facility.

* DESCRIPTION. The Mexican Weasel is about two feet and a half in length, with a long prehensile tail. The general colour is

Concealed amongst these he waits for his prey, and darts from hence upon such small animals as happen to pass beneath. The moment his hold is fixed, he entwines his tail round the body of his victim, and instantly gnaws a hole in the neck, through which he sucks the blood. Charlevoix asserts, that, in this manner, he sometimes leaps upon the neck even of the moose-deer; and, if he can only fix himself there, will cut into the jugular vein and destroy them. The only chance of escape that animals have, is to plunge into water, if such happen to be at hand. In this case the Weesel is compelled to let go his hold in order to save himself.

When in confinement, the manners of the Mexican Weesel are gentle and sprightly. During the day it generally sleeps; but awakes in the evening, and begins to climb about and search for food. It uses its tail with great dexterity, in seizing and securing such things as it cannot otherwise reach; but has been observed never to extend this till its feet are perfectly secure. It tears every thing it finds; either for amusement, or in quest of insects. This mischievous propensity alone prevented one of these animals, that was kept by M. Chaven, at Paris, from being suffered to range at liberty. Before this was discovered, he used to be let loose at night; and how far soever he might range in the dark, he was always found the next morning lying in the same place. He distinguished his master, whom he would follow and caress, though not very tractable. He ate bread, meat, vegetables, and fruit; drank milk and water, and even spirits if sweetened,

an olive-yellow, mixed with gray-brown, and lighter beneath than above.

It is found in Mexico and New Spain.

SYNONYMS. *Viverra prehensilis*. Kerr.—Kinkajou. *Buffon*.—Quincajou ou Carajou. *Charlevoix*.—Mexican Weesel. *Penn*.

with which he would so intoxicate himself, as to continue sick for several days. He was passionately fond of perfumes and sweetmeats. He frequently attacked the poultry, always seizing them under the wing; and seemed to drink their blood, but never devoured them. His voice, which was only exerted in the night, was somewhat like the barking of a dog. When he was sporting about, or when he received any injury, he uttered a cry somewhat like that of a young pigeon; and when he meant to threaten, he hissed like a goose. He always seemed extremely afraid of going into the water.

Another of these animals, that was exhibited in 1773, at the fair of St. Germain, appeared for some time of a very mild disposition, and would lick the hand of any person who invited such a mark of familiarity. But by frequent irritations of the visitors it was afterwards rendered mischievous, and always attempted to bite at the hand after licking it. This creature would often sit upright, and scratch itself with its fore-paws; was very playful, would fold its paws into each other, and perform many apish tricks. It ate from its paws. When irritated, it always endeavoured to leap on the person from whom the affront came. It laid hold of any thing it wanted with its tail, and would frequently hang by this part: when walking, the tail was always carried horizontally.

THE COMMON MARTIN AND PINE MARTIN*.

The general retreat of these animals is the hollow of some decayed tree; so high up, and in other respects so situated, as to afford them perfect security. The place adopted for the nest of a squirrel is generally preferred to

* DESCRIPTION. These animals are each about 18 inches long. They are of a dark chesnut colour on the upper parts. The Com-

any other. Of this the Martin dispossesses the ingenious architect by killing him. The new tenant now enlarges the dimensions of its habitation, lines it with softer materials, and, in that secure retreat, brings forth its young.

The courage of the Martin is so great, that it will attack animals much larger and stronger than itself. It sometimes seizes the sheep and the hare; and, if necessity obliges, will combat the fury even of the wild cat; which, though much stronger, is always worsted, and often killed.

Notwithstanding their ferocity of disposition, these animals are easily rendered docile. Gesner says, he kept a Pine Martin which was extremely playful and entertaining. It used to go to the houses of the neighbours, and always returned home when it wanted food. It was particularly fond of a dog with which it had been bred up; and would play with him as cats do, lying on its back, and pretending to bite him. Buffon had one, which, though it had lost its ferocity, did not, however, discover any marks of attachment, and continued so wild as to require being chained. It frequently escaped from its confinement. At first it returned, after some hours' absence, but without appearing pleased; the time of absence of each succeeding elopement gradually increased, and at last it took a final departure. During its confinement, it sometimes slept for two days without intermission.

These animals have a musky smell, which to many

mon Martin is white on the throat and breast; and the Pine Martin yellow.

They are natives of Great Britain; and of various parts both of the old and new continent.

SYNONYMS. *Viverra foina*. Shaw.—*Mustela foina*. Linnæus.—*La Fouine*. Buffon.—*Bingley's Mem. of Brit. Quad.*—Pl. 12.

Viverra Martes. Shaw.—*Mustela Martes*. Linnæus.—*La Marte*. Buffon.—*Bingley's Mem. of Brit. Quad. Pl.* 13.

persons is very agreeable. Their cry is sharp and piercing; but is never uttered except when in pain or distress. Their principal food consists of rats, mice, and other small quadrupeds; of poultry, and game; they are also remarkably fond of honey.

The female produces three or four young ones at a litter, which soon arrive at a state of maturity. She is able to afford them but a small quantity of milk; but she compensates for this natural defect, by bringing home to them eggs and live birds in abundance, and thus early accustoms them to a life of carnage and plunder. As soon as the young are able to leave the nest, she leads them through the woods: where they begin to seize on their prey, and to provide food for themselves.

Pine Martins are hunted in the North for the sake of their furs, which are held in great estimation: the most valuable part is that which extends along the back. In England these are used to line the robes of magistrates, and for several other purposes. They form a considerable article of commerce; above twelve thousand being annually imported into this country from Hudson's Bay, and more than thirty thousand from Canada.

THE SABLE*.

Sables frequent the banks of rivers, and the thickest parts of the woods. They live in holes under the ground,

* DESCRIPTION. This animal is about 18 inches in length; and in its general shape has a great resemblance to the Martin. The head is longish, and the muzzle somewhat sharpened. Its colour is a deep glossy brown.

It is a native of North America, Siberia, Kamtschatka, and Asiatic Russia.

SYNONYMS. *Viverra Zibellina*. Shaw.—*Mustela Zibellina*. Linn.—Sable Weasel. Penn.—Zibeline. Buffon.—Bew. *Quadr.* 258.

and especially under the roots of trees; but they sometimes make their nests (consisting of moss, small twigs, and grass) in the hollows of trees. The female brings forth in the spring, and produces from three to five young ones at a time. In winter they live on berries of different kinds; but in the summer-time, before these are ripe, they devour hares, weesels, ermines, and other small animals. They are sprightly and active creatures, oftentimes leaping with wonderful agility from tree to tree, in the pursuit of squirrels and birds.

Two of these animals which had been in some measure domesticated, are described by M. Gmelin. He says, that whenever they saw a cat, they would rise on their hind feet to prepare for combat. In the night, they were extremely restless and active; but during the day, and particularly after eating, they generally slept so sound for half an hour, or an hour, that they might be pushed, shaken, and even pricked, without being awakened.

The skin of the Sable is more valuable than that of any other animal of equal size. One of these, not above four inches broad, has sometimes been valued as high as fifteen pounds; but the general price is from one pound to ten, according to the quality. The Sable's fur is different from all others, in the hair turning with equal ease either way. The bellies of Sables, which are sold in pairs, are about two fingers in breadth; and are tied together in bundles of forty pieces, which are sold at from one to two pounds a bundle. The tails are sold by the hundred, at from four to eight pounds.

The manner in which the natives of Kamtschatka take these animals is very simple. They follow the track of the Sable, in snow-shoes, till they have detected his covert, which is generally a burrow in the earth. As soon as the little creature is aware of his pursuers, he escapes into

some hollow tree; which the hunters surround with a net, and then either cut it entirely down, or force the animal by fire and smoke to abandon his retreat, when he falls into the net and is killed. They sometimes surround the tree in which a Sable is lodged, with dogs trained for the purpose; and then, making a running noose on a pretty strong cord, find means to get the creature's head into the snare, and thus haul him down an easy prey.

In other parts of the world where these animals are less common, the contrivances to take them are more artificial. Of this kind is the Sable-trap of the Vogules, which is used in several parts of Siberia:—A place is found where two young trees stand not far asunder. These are immediately stripped of their branches about the bottom; and near one of them a post is stuck into the ground, on which a beam is placed horizontally, so fastened to both trees, that one end of it lies between the post and the tree. Over this beam another is laid, as a trap-fall; at the end of which a thin support is put, which, when the trap-fall is up, stands over the notched end of the post. At the extremity of the support is a mat-string, and another at the lower transverse beam, tied very short. Both are brought together; and a stick is put through them, having at its lower extremity a piece of flesh or wild-fowl attached, which, by its preponderance, keeps the stick down, and thus holds the two strings together. The Sable creeps cautiously along the lower beam till he can reach the bait, and pull it to him; this looses the stick to which the bait is tied, and by which the strings were held together; the stay slips its hold, and consequently the upper beam falls upon the shoulders of the animal and holds him fast.

The chase of the Sable, according to Mr. Pennant, was, during the more barbarous periods of the Russian empire, the principal task of the unhappy exiles who were banished into Siberia; and who, as well as the soldiers sent there,

were obliged to furnish, within a given time, a certain quantity of furs: but as Siberia is now become more populous, the Sables have, in a great measure, quitted it, and retired further to the north and east, into the desert forests and mountains.

THE POLECAT, OR FITCHET*.

The Polecat is not afraid of the presence of mankind, but approaches with confidence our dwellings, mounts to their roofs, and often resides in barns, hay-lofts, or other places that are not much frequented. From thence he issues, under the shadow of night, to commit his depredations on eggs and poultry. He is exceedingly agile, and runs very fast. In the act of running, his belly seems to touch the ground; but, in preparing to jump, the animal arches his back very much, by means of which the projectile force of his body is greatly increased. In farm-yards, the Polecat makes less noise, but commits more mischief than the Martin. If he cannot convey the fowls away, deterred by the narrowness of the entrance, he is said to eat the brain on the spot, and to carry off the heads to his place of concealment, leaving the bodies behind.

In Lorraine, and some of the adjacent cantons, Polecats are very numerous; and consequently there, as elsewhere, they commit great havoc in the poultry yards. Yet, says

* DESCRIPTION. The length of the Polecat, exclusive of the tail, is about 17 inches; and of the tail 3 inches. In shape it resembles the martin. The ears are short, and tipped with white. The tail is covered with longish hair. The general colour is a deep chocolate, nearly approaching to black.

SYNONYMS. *Mystela Putorius*. *Linnaeus*.—Le Putois. *Buffon*.—Foumart. *Bewick*.—*Bingley's Mem. of Brit. Quad. Pl.* 14.

Sonnini, such are the superstitious prejudices in their favour, that the inhabitants will on no account attempt to destroy them. They pretend that Polecats never commit any damage in the dwellings where they reside; thus, at the same time that they know and acknowledge their voracious disposition, they believe that the animals entertain a strangely unusual respect for hospitality.

The Polecat, during summer, generally lives in woods, thick brakes, or about rabbit-warrens. Here, if he cannot find ready made a hole that suits him, he forms for himself, in the ground, a retreat not usually more than two yards in length, which, if possible he contrives to end among the roots of some large tree. Issuing from thence, he often commits surprising depredations on game and rabbits. A single family of Polecats, left undisturbed, it is said, are sometimes sufficient to destroy a whole warren. It is asserted that these animals are so fond of honey, that in winter, when the bees are weakened by the rigours of the season, they have been known to attack the hives, and voraciously to devour their contents.

That the Polecat will sometimes prey upon fish is a circumstance that was known to several of the old writers on natural history, and is noticed both by Aldrovandus and Jonston. A curious fact, illustrative of this propensity, is recorded in Bewick's History of Quadrupeds. During a severe storm, a Polecat was tracked in the snow, from the side of a rivulet to its hole, at some distance. On examining this hole, it was found to contain eleven fine eels, the fruits of some of the animal's lately-performed nocturnal excursions.

The smell of the Polecat is proverbially fetid, the animal being furnished, like several others of its tribe, with certain receptacles for secreting a thickish fluid, which has a peculiarly strong and offensive odour. When the animal is heated or enraged, the stench is sometimes perceptible to

a very considerable distance. The fur, notwithstanding, is both beautiful and valuable. It is said, however, that the skins taken from such animals as are killed in winter, are the most valuable, from their being far less fetid than those of Polecats caught at any other season of the year.

The females produce their young ones, from three to six in number, in the beginning of summer. This is usually done either in or near the outhouse of some farm; and they continue with their offspring whilst the males are gone out to reside in the fields or woods. Like the Martins, they do not suckle them long, but soon accustom them to animal food*.

THE FERRET†.

Great as is the general resemblance, in their manners and habits, betwixt the Ferret and the Polecat, it is evident that they are perfectly distinct. The Ferret is a native of Africa, and has been imported into Europe for the purpose of being employed in the driving of rabbits from their burrows. Although easily tamed and rendered docile, these animals are exceedingly irascible; and, if at all provoked, will inflict very severe wounds with their teeth. Their smell is strong and offensive.

Ferrets are generally kept in casks or chests, well supplied with hay or straw: on this they sleep almost throughout the whole day. The females go with young six weeks,

* The preceding account of the Polecat, is extracted (with some omissions) from the Memoirs of British Quadrupeds.

† DESCRIPTION. The Ferret is somewhat smaller than the polecat. The eyes are red; and the general colour of the body a dingy but pale yellow.

SYNONYMS. *Viverra furo*. Shaw.—*Mustela furo*. Linnæus.—*Le Furet*. Buffon.—*Shaw's Gen. Zool. Pl. 98.*—*Bew. Quad. p. 248.*

and usually produce six or seven at a litter. These are blind for a month; and, after two months, are sufficiently old to be employed in the rabbit warrens. They ought not to be fed immediately before they are used in the burrows; because in this case they become indolent and will not hunt. It is also necessary that, in this operation, they should be muzzled in order that they may not satiate their appetite in the holes; for, after having sucked the blood of the rabbits, they will oftentimes fall asleep, and continue underground for hours.

A mixed breed, betwixt the Ferret and the polecat, is sometimes used by the warreners, and considered in some respects preferable to the whole bred Ferret.

THE COMMON WEESEL*.

The Weesel is a beautiful and active little animal, well known to the husbandmen and farmers in almost every part of Great Britain. There can be no creature of its size, more destructive to young birds, poultry, or rabbits, than this. It also sucks eggs with great avidity. In this latter operation, it begins by making a small hole at one end, from which it licks out the yelk, leaving the shell behind; whereas rats, and some other animals, drag the egg out of the nest, and either make a large hole in it or break it to pieces. By this circumstance the

* DESCRIPTION. The length of the Weesel, exclusive of the tail, is about seven inches; and its height not above two and a half. The colour of its upper parts is a pale reddish brown; and its breast and belly are white: but on each side, below the corners of the mouth, is a brown spot. The ears are small and rounded, and the eyes black.

SYNONYMS. *Viverra vulgaris*. Shaw.—*Mustela vulgaris*. Linn.—Weesel, Whitret, or Whitred, in Scotland.—*Bingley's Mem. of Brit. Quad. Pl.* 15.

attacks of the Weesel may always be distinguished.—Its form is elegant, but, like some others of this genus, it has an unpleasant smell. It lives chiefly in cavities under the roots of trees, and in the banks of rivulets; from whence it sallies out on the approach of evening, to commit its devastations.

The Comte de Buffon supposed the Weesel to be untamable; but Mademoiselle de Laistre, in a letter on this subject, gives a very pleasing account of the education and manners of a Weesel which she took under her protection*. This she fed with fresh meat and milk, the latter of which it was very fond of. It frequently ate from her hand, and seemed to be more delighted with this manner of feeding than any other. “If I pour (says this lady) some milk into my hand, it will drink a good deal; but if I do not pay it this compliment, it will scarcely take a drop. When it is satisfied, it generally goes to sleep. My chamber is the place of its residence; and I have found a method of dispelling its strong smell by perfumes. By day, it sleeps in a quilt, into which it gets by an unsewn place which it had discovered on the edge: during the night, it is kept in a wired box or cage; which it always enters with reluctance, and leaves with pleasure. If it be set at liberty before my time of rising, after a thousand little playful tricks, it gets into my bed, and goes to sleep in my hand or on my bosom. If I am up first, it spends a full half-hour in caressing me; playing with my fingers like a little dog, jumping on my head and on my neck, and running round on my arms and body, with a lightness and elegance which I never found in any other animal. If I

* In general, however, when in confinement, these animals are in perpetual agitation, appear much disturbed by the sight of man, and refuse to eat in the presence of any person; and usually, if not allowed some place where they can hide themselves, they soon die.

present my hands at the distance of three feet, it jumps into them without ever missing. It shows a great deal of address and cunning in order to compass its ends, and seems to disobey certain prohibitions merely through caprice. During all its actions, it seems solicitous to divert, and to be noticed; looking, at every jump, and at every turn, to see whether it is observed or not. If no notice be taken of its gambols, it ceases them immediately, and betakes itself to sleep; and even when awaked from the soundest sleep, it instantly resumes its gaiety, and frolics about in as sprightly a manner as before. It never shows any ill humour, unless when confined, or teased too much; in which case it expresses its displeasure by a sort of murmur, very different from that which it utters when pleased.

“In the midst of twenty people, this little animal distinguishes my voice, seeks me out, and springs over every body to come at me. His play with me is the most lively and caressing; with his two little paws he pats me on the chin, with an air and manner expressive of delight. This, and a thousand other preferences, show that his attachment to me is real. When he sees me dressed for going out, he will not leave me, and it is not without some trouble that I can disengage myself from him; he then hides himself behind a cabinet near the door, and jumps upon me as I pass, with so much celerity that I often can scarcely perceive him.

“He seems to resemble a squirrel in vivacity, agility, voice, and his manner of murmuring. During the summer, he squeaks and runs about all night long; but since the commencement of the cold weather I have not observed this. Sometimes, when the sun shines while he is playing on the bed, he turns and tumbles about and murmurs for a while.

“From his delight in drinking milk out of my hand, into which I pour a very little at a time, and his custom of

sipping the little drops and edges of the fluid, it seems probable that he drinks dew in the same manner. He very seldom drinks water, and then only for want of milk, and with great caution, seeming only to refresh his tongue once or twice, and to be even afraid of that fluid. During the hot weather, it rained a good deal. I presented to him some rain water in a dish, and endeavoured to make him go into it, but could not succeed. I then wetted a piece of linen cloth in it, and put it near him; when he rolled upon it with extreme delight.

“One singularity in this charming animal is his curiosity; it being impossible to open a drawer or a box, or even to look at a paper, but he will examine it also. If he gets into any place where I am afraid of permitting him to stay, I take a paper or a book, and look attentively at it; when he immediately runs upon my hand, and surveys with an inquisitive air whatever I happen to hold. I must further observe, that he plays with a young cat and dog, both of some size; getting about their necks, backs, and paws, without their doing him the least injury.”

The method of taming these creatures is, according to M. de Buffon, to stroke them gently over the back; and to threaten, and even to beat them, when they attempt to bite. Aldrovandus tells us, that their teeth should be rubbed with garlic, which will take away all their inclination to bite!

The last-mentioned author quotes from Strozza the following part of an elegy on the death of a tame Weesel:

Nil poterat puero te gratius esse; nec illi
Morte tua quicquam tristius esse potest.
Tu digitos molli tentabas improba morsu,
Porrecto ludens semisupina pede;
Et mollen e labiis noras sorbere salivam,
Et quiddam exiguo murmure dulce queri.

Loving and lov'd! thy master's grief!

Thou couldst th' uncounted hours beguile;

And, nibbling at his fingers soft,

Watch anxious for th' approving smile;

Or stretching forth the playful foot,

Around in wanton gambols rove;

Or gently sip the rosy lip,

And in light murmurs speak thy love.

The motion of the Weesel consists of unequal leaps; and, on occasion, it has the power of springing some feet from the ground. It is remarkably active, and will run up a wall with such facility that no place is secure from it.—It is useful to the farmer in ridding him of rats and mice, which it will pursue into their holes and there kill; but its depredations are not altogether confined to these pernicious animals, as it also very frequently destroys young poultry and pigeons. It seizes its prey near the head, and but seldom eats it upon the spot, generally carrying it away to its retreat.—It often destroys the moles in their habitations; as is proved by its being at times caught in the traps laid for those animals. We are told that when it pursues the hare, that timid creature is terrified into a state of absolute imbecility; and gives itself up without the least resistance, making, at the same time, the most piteous outcries.

A story is related, that an eagle, having seized a Weesel, mounted into the air with it, and was soon after observed to be in great distress. His little enemy had so far extricated himself, as to be able to bite him very severely in the neck; which presently brought the bird to the ground, and gave the Weesel an opportunity of escaping.

The female brings forth in the spring, and generally produces four or five young-ones at a litter. She prepares for them a bed of moss, leaves, and straw. Aldrovandus tells us, that when she suspects they will be stolen from her, she carries them in her mouth from place to place,

changing her retreat even several times a-day.—M. de Buffon informs us, that, in his neighbourhood, a Weesel with three young-ones was taken out of the body of a wolf, that had been hung on a tree by the hind feet. The wolf was in a state of putrefaction; and the Weesel had made a nest of leaves and herbage in the thorax.

Among other curious particulars respecting this animal, it has been observed, that, when asleep, its muscles are in a state of such extreme flaccidity, that it may be taken up by the head, and swung backwards and forwards like a pendulum several times, before it will awake.

The Stoat or Ermine *. In northern climates this animal is brown in summer, and white in the winter; and in the former of these states is denominated *Stoat*, and in the latter *Ermine*. The tip of its tail continues always black. Its habits of life are, in almost every respect, the same as those of the Weesel.

OF THE OTTERS IN GENERAL†.

There are about eight ascertained species of Otters. These animals differ much from the Weesels in their habits. They live almost constantly in the water; from whence they principally derive their food, which consists of fish. Their bodies are very long, and their legs short. They burrow and form their dwellings in the banks of

* SYNONYMS. *Viverra Erminea*. Shaw.—*Mustela erminea*, Linnaeus.—*Hermine*, ou *Roselet*. Buffon.—*Bingley's Mem. of Brit. Quad. Pl.* 16.

† They have, in each jaw, six sharpish cutting teeth; the lower ones of which do not stand in an even line with the rest, but two are placed somewhat within. The canine-teeth are rather longer than the others. The animals of this tribe have all webbed feet.

rivers and lakes, in the neighbourhood of the situations where they find their prey.

THE COMMON OTTER *.

The habitation of the Otter is almost always made in the bank of a river or brook, in the immediate neighbourhood of which he can be furnished with a plentiful supply of food. In the forming of his habitation, says Mr. Pennant, the animal shews great sagacity. He burrows underground in the bank, and always makes the entrance of his hole under water, working upwards to the surface of the earth; and, before he reaches the top, he provides several *holts*, or lodges, that in case of high floods he may have a retreat, (for no animal seems desirous of lying drier,) and then makes a minute orifice for the admission of air. It is further observed, that this animal, the more effectually to conceal his retreat, contrives to make this little air-hole in the midst of some thick bush.

In some parts of North America, Otters are seen in winter at a distance from any apparent open water, both in woods and on plains; but it is not known what leads them to such situations. If pursued, when among the woods where the snow is light and deep, they immediately dive,

* DESCRIPTION. This animal is about two feet in length, from the nose to the insertion of the tail; and the length of the tail is nearly sixteen inches. Its legs are short, but strong and muscular. The head is broad, oval, and flat on the upper part; and the body is long and round. The legs are so placed as to be capable of being brought into a line with the body, and of performing the office of fins. The toes are connected by webs. The general colour of the body is a deep brown.

SYNONYMS. *Lutra vulgaris*. Shaw.—*Mustela lutra*. Linnaeus.—*Le Loutre*. Buffon.—Greater Otter. Pennant.—*Bingley's Mem. of Brit. Quad. Pl.* 17.

and make considerable way under it; but they are easily traced by the motion of the snow above them, and soon overtaken. The Indians track them in the snow, and kill numbers of them with clubs.

These creatures are sometimes very frolicsome and playful: and one of their favourite pastimes is, to get on a high ridge of snow, bend their fore-feet backward, and slide down the side of it, sometimes to the distance of twenty yards or upwards.

Otters, though naturally of a ferocious disposition, may, if taken young and properly educated, be completely tamed. The training of them, however, requires both assiduity and perseverance: but their activity and use, when taught, sufficiently repay this trouble; and few animals are more beneficial to their masters. The usual method is first to teach them to fetch, in the same way as dogs are taught; but, as they have not an equal docility, so it requires more art and experience to instruct them. It is usually performed by accustoming them to take in their mouths a truss made of leather, and stuffed with wool, of the shape of a fish; to drop it at a word of command; to run after it when thrown forward, and to bring it to their master. Real fish are next employed; which are thrown dead into the water, and which they are taught to fetch from thence. From dead fish they are led to living ones, till at last they are perfectly instructed in the whole art of fishing. An Otter thus educated is very valuable; he will catch fish enough to sustain not only himself but a whole family. "I have seen (says Dr. Goldsmith, from whom this information is taken) an Otter go to a gentleman's pond at the word of command, drive the fish into a corner, and, seizing upon the largest of the whole, bring it off, in his mouth, to his master."

A person of the name of Collins, who lived at Kilmers-ton, near Wooler, in Northumberland, had a tame Otter,

which followed him wherever he went. He frequently took it to fish in the river; and when satiated, it never failed to return to its master. One day, in the absence of Collins, the Otter being taken out to fish by his son, instead of returning as usual, refused to come at the accustomed call, and was lost. The father tried every means to recover it; and, after several days' search, being near the place where his son had lost it, and calling it by its name, to his inexpressible joy it came creeping to his feet, and showed many marks of affection and firm attachment.

Some years ago, James Campbell, near Inverness, had a young Otter, which he brought up and tamed. It would follow him wherever he chose; and, if called on by its name, would immediately obey. When apprehensive of danger from dogs, it sought the protection of its master, and would endeavour to spring into his arms for greater security. It was frequently employed in catching fish, and would sometimes take eight or ten salmon in a day. If not prevented, it always made an attempt to break the fish behind the fin next the tail; and, as soon as one was taken away, it immediately dived in pursuit of more. When tired, it would refuse to fish any longer; and was then rewarded with as much as it could devour. Having satisfied its appetite, it always coiled itself round, and fell asleep; in which state it was generally carried home. The same Otter fished as well in the sea as in fresh water, and took great numbers of young cod and other fish there.

Another person who kept a tame Otter, suffered it to follow him with his dogs. It was very useful to him in fishing; by going into the water, and driving trout and other fish towards the net. It was remarkable, that dogs accustomed to Otter-hunting were so far from giving it the least molestation, that they would not even hunt any Otter

while this remained with them; on which account the owner was under the necessity of disposing of it*.

The method of fishing with a tame Otter is mentioned in the *Prædium Rusticum* of Vaniere, in a passage which has been thus translated:

“ Should chance within this dark recess betray
The tender young, bear quick the prize away.
Tam'd by thy care, the useful brood shall join
The wat'ry chase, and add their toils to thine;
From each close lurking-hole shall force away,
And drive within thy nets, the silver prey:
As the taught hound the timid stag subdues,
And o'er the dewy plain the panting hare pursues.”

M. Poissonnier, considering the account of Vaniere as fabulous, procured a young Otter, which he tamed, in order to put it to the test; and, to his great surprise, found that after a little instruction it would run to a small river, about a hundred yards from his house, and very seldom returned without a live fish in its mouth. He also brought it to such a state of domestication, that, to whatever distance it went, it always returned with the utmost punctuality to its kennel.

This writer contradicts an assertion frequently made, that the Otter is amphibious; for his never plunged into the water but in search of prey, and it then always returned as speedily as possible to the bank, where it shook itself like a water-spaniel. When it was obliged to continue in the water for any length of time, it frequently raised its head to the surface to breathe; and he believes it would have been killed had it been forced to remain under water for half an hour.

When the Otter, in its wild state, has caught a fish, it

* Bewick's *Quadrupeds*, p. 489, 490.

immediately drags it ashore, and devours the head and upper parts, leaving the remainder: and when domesticated, it will eat no fish except such as are perfectly fresh; but will prefer bread, milk, &c. It generally hunts against the stream; and when more than one are fishing at the same time, they are frequently heard to utter a sort of loud whistle to each other, as if by way of signal. When two of them (as sometimes happens) are hunting a salmon, one stations itself above, and the other below the place where the fish is; and they continue to chase it, till, becoming perfectly wearied out, it surrenders itself a quiet prey. The Otter, when it hunts singly, has two modes of taking its prey. The first is by pursuing it from the bottom upwards: this is principally done with the larger fish; whose eyes being placed so as not to see under them, the animal attacks them by surprise from below, and seizing them by the belly, drags them away. The other mode is by hunting them into some corner of the pond or lake, and there seizing them. The latter, however, can only be practised in water where there is no current, and on the smaller fish; for it would be impossible to force the large ones out of deep water. The Otter is as noxious in a fish-pond, as the polecat in a hen-roost; he frequently kills more fish than he can eat, and then carries off but one in his teeth.

The female produces four or five young-ones at a birth, and these in the spring of the year. Where there have been ponds near a gentleman's house, instances have occurred of their littering in cellars or drains.—The male utters no noise when taken, but the pregnant females emit a shrill squeak.—Otters are generally caught in traps placed near their landing-places, and carefully concealed in the sand. When hunted with dogs, the old ones defend themselves with great obstinacy. They bite severely, and do not readily quit their hold where they have once

fastened. An old Otter will never yield while he has life. Nor will he make the least complaint, though wounded ever so much by the dogs, or even when transfixed with a spear.

In the northern parts of America, these animals change their colour in winter to white, like most of the other Arctic animals; and it is not till very late in the spring that they resume their brown summer dress.

The flesh is exceedingly rank and fishy; so much so, that the Romish Church permitted the use of it on maigre-days. In the kitchen of the Carthusian convent near Dijon, Mr. Pennant saw one of them cooking for the dinner of the religious of that rigid order; who by their rules are prohibited, during their whole lives, the eating of flesh.

THE SEA OTTER*.

In their general habits of life these animals are perfectly harmless and inoffensive; and towards their offspring they exhibit a degree of attachment which is extremely interesting. They will never desert them; they will even starve themselves to death on being robbed of them, and strive to breathe their last on the spot where their young have been destroyed. The female produces only a single young-one at a time; which she suckles almost a whole year, and till

* DESCRIPTION. The whole length of the Sea Otter is generally about four feet, of which the tail occupies thirteen inches. The fur is extremely soft, and of a deep glossy black. The ears are small and erect, and the whiskers long and white. The legs are short and thick, the hinder ones somewhat resembling those of a Seal. The weight of the largest Sea Otters is from seventy to eighty pounds.

SYNONYMS. *Lutra marina*. Shaw.—*Mustela Lutris*. Linnæus.—Sea Otter. Penn.—*Shaw's Gen. Zool. Pl.* 101.—*Bew. Quad.* 491.

it takes to itself a mate.—The Sea Otters pair, and are very constant. They often carry their young between their teeth, and fondle them, frequently flinging them up and catching them again in their paws. Before these can swim, the old ones will take them in their fore-feet, and swim about with them upon their backs.

The Sea Otters swim sometimes on their sides; at other times on their backs, or in an upright position. They are very sportive, embrace each other, and seem to kiss.—When attacked they make no resistance, but endeavour to save themselves by flight: if, however, they are closely pressed, and can see no means of escape, they scold and grin like an angry cat. On receiving a blow, they immediately lie on their side, draw up their hind legs together, cover their eyes with their fore paws, and thus seem to prepare themselves for death. But if they are fortunate enough to escape their pursuer, they deride him as soon as they are safe in the sea, with various diverting tricks; at one time keeping themselves on end in the water, and jumping over the waves, holding their fore-paw over the eyes, as if to shade them from the sun while looking out for their enemy; then lying flat on their back, and stroking their belly; then throwing their young down into the water and fetching them up again. In their escape they carry the sucklings in their mouths, and drive before them those that are full-grown.

The skins of the Sea Otters are of great value, and have long formed a considerable article of export from Russia. They are disposed of to the Chinese at the rate of eighty or a hundred rubles each. The trade for this fur at Nootka had, not many years ago, nearly produced a war between Great Britain and Spain.

These animals are found on the coast of Kamtschatka, and in the adjacent islands, as well as on the opposite coasts

of America; but they are confined within a very few degrees of latitude.

OF THE BEAR TRIBE*.

These are animals, for the most part, of large size, and great muscular powers. They are seldom found in any other than mountainous or thinly inhabited countries. During the winter, several of the species lie concealed in holes in the ground, and in a torpid state.

Some of the species are able to use their fore-feet as hands, in conveying food to their mouth, or in seizing hold of objects. From the length and sharpness of their claws, huge and unwieldy as they may seem, these animals are able to climb trees in search of prey, or to escape the pursuit of their enemies.

THE COMMON BEAR†.

The Bear is a savage and solitary animal, living in the most retired and unfrequented parts of the forests. He passes the greatest part of the winter in his den, in a state of repose and abstinence. During this period it is that the females bring forth their young-ones, which are generally two in number. When the animals retire into their places

* The Bears have six front teeth in each jaw. The two lateral ones of the lower jaw are longer than the rest, and lobed with smaller or secondary teeth at their internal bases. There are five or six grinders on each side; and the canine teeth are solitary. The tongue is smooth, and snout prominent. The eyes are furnished with a nictitating or winking membrane.

† SYNONYMS. *Ursus Arctos*. Linn.—Ours. Buffon.—Common or Brown Bear. Penn.—Shaw's Gen. Zool. Pl. 102.—Bew. Quad. 288.

of concealment, they are always fat and in high condition; and when they make their first appearance in the spring, they are, on the contrary, excessively lean and emaciated. In consequence of this, a general, though at the same time very absurd, notion prevails, that they are enabled to live through the winter by sucking their paws. Thomson has admirably described the retreat of the Bears in the frozen regions of the North:

There through the piny forest half absorpt
Rough tenant of those shades, the shapeless Bear,
With dangling ice all horrid, stalks forlorn:
Slow-pac'd, and sourer as the storms increase,
He makes his bed beneath th' inclement drift;
And, with stern patience, scorning weak complaint,
Harden's his heart against assailing want.

These animals, which are not only inhabitants of Europe, but of various parts of the East Indies, vary much in colour. Some are brown, others black, and others grey. The Brown Bears live chiefly on vegetables; and the Black ones, in a great measure, on animal food, as lambs, kids, and even cattle, which they destroy, sucking the blood in the manner of the Weesel tribe. We are informed that the latter are so remarkably attached to each other, that the hunters never dare to fire at a young one, while the dam is on the spot; for, if the cub happens to be killed, she becomes so enraged, that she will either avenge herself, or die in the attempt. If, on the contrary, the mother should be shot, the cubs will continue by her side long after she is dead, exhibiting the most poignant affliction. A man nearly lost his life, a few years ago, in Hungary, by firing at a young Bear, in the presence of its dam, who had been concealed from his sight by some bushes; for, at one blow with her paw, she brought off a great part of his scalp.

These animals are so numerous in Kamtschatka, that they are often seen roaming about the plains in great companies; and they would infallibly have long since exterminated all the inhabitants, were they not here much more tame and gentle than the generality of Bears in other parts of the world. In spring, they descend in multitudes from the mountains (where they have passed the winter) to the mouths of the rivers, for the purpose of catching fish, which swarm in all the streams of that peninsula. If there be plenty of this food, they eat nothing but the heads of the fish; and when, at any time, they find the fishermen's nets, they dexterously drag them out of the water, and empty them of their contents.

When a Kamtschadale espies a Bear, he endeavours to conciliate its friendship at a distance, accompanying his gestures by courteous words. The Bears are indeed so familiar here, that the women and girls, when gathering roots and herbs, or turf for fuel, in the midst of a whole drove of Bears, are never disturbed by them in their employment; and if any one of these animals comes up to them, it is only to eat something out of their hands. They have never been known to attack a man, except when roused on a sudden from sleep; and they very seldom turn upon the marksman, whether they be hit or not.—This humane character of the Kamtschadale Bear, who herein differs so remarkably from his brethren of most other countries, procures him, however, no exemption from the persecutions of mankind. His great utility is a sufficient instigation to the avarice of man, to declare eternal war against him. Armed with a spear, or club, the Kamtschadale goes in quest of the peaceful animal, in his calm retreat; who, meditating no attack, and intent only on defence, gravely takes the faggots which his persecutor presents to him, and, with them, himself chokes up the entrance to his den. The mouth of the cavern being

thus closed, the hunter breaks a hole through the top, and from thence transfixes his defenceless foe.

The modes that are adopted by the inhabitants of different countries, for the taking or destroying of Bears, are very various. Of these, the following appear to be the most remarkable. In consequence of the well-known partiality of these animals for honey, the Russians sometimes fix to those trees where bees are hived, a heavy log of wood, at the end of a long string. When the unwieldy creature climbs up to get at the hive, he finds himself interrupted by the log; he pushes it aside, and attempts to pass it; but, in returning, it hits him such a blow, that in a rage he flings it from him with greater force, which makes it return with increased violence; and he sometimes continues this, till he is either killed, or falls from the tree.

The method adopted by the inhabitants of the mountainous parts of Siberia, to make the animal become his own destroyer, is still more extraordinary. They fasten a very heavy block to a rope, that terminates at the other end with a loop. This is laid near a steep precipice, in the path on which the Bear is accustomed to go. On getting his neck into the noose, and finding himself impeded by the clog, he takes it up in a rage, and, to free himself from it, throws it down the precipice: it naturally pulls the Bear after it, and he is killed by the fall. Should this, however, accidentally not prove the case, he drags the block again up the mountain, and reiterates his efforts; till, with increasing fury, he either sinks nerveless to the ground, or ends his life by a decisive plunge.

It would be difficult to name a species of animals, except the sheep, so variously serviceable to man after its death, as the Bear is to the Kamtschadales. Of the skin they make beds, covertures, caps and gloves, and collars for their sledge-dogs. Those who go upon the ice for the

capture of marine animals, make their shoe-soles of the same substance, which thus never slip upon the ice. The fat of the Bear is held in great estimation by all the inhabitants of Kamtschatka, as a very savoury and wholesome nourishment; and, when rendered fluid by melting, it supplies the place of oil. The flesh is esteemed a great delicacy. The intestines, when cleansed and properly scraped, are worn by the *fair sex*, as masks to preserve their faces from the effects of the sun-beams; which here, being reflected from the snow, are generally found to blacken the skin: but by this means the Kamtschadale ladies preserve a fine complexion. The Russians of Kamtschatka make of these intestines window panes, which are as clear and transparent as those made of Moscovy-glass. Of the shoulder-blades are made sickles for cutting grass; and the heads and haunches are hung up by these people, as ornaments or trophies, on the trees about their dwellings.

The Kamtschadales also owe infinite obligations to the Bears, for the little progress they have hitherto made, as well in the sciences, as even in the *polite arts*. They confess themselves indebted to these animals for all their knowledge of physic and surgery: by observing what herbs the Bears apply to the wounds they have received, and what methods they pursue when languid and disordered, this people have acquired a knowledge of most of those simples which they have recourse to, either as external or internal applications. But the most singular circumstance of all is, that they admit the Bears to be their *dancing-masters*; and, in what they call the *Bear-dance*, every gesture and attitude of that animal is so faithfully portrayed, as to afford sufficient indications to what they are indebted for this acquirement. They represent the Bear's sluggish and stupid gait: and its different feelings and situations; as the young-ones about the dam, the amorous sports of

the male with the female, and its agitation when pursued.—The tune to one of these dances I shall insert:—this is always sung by the dancers to a jumble of words that are frequently devoid of any meaning.



All their other dances are similar to the Bear-dance, in many particulars; and those attitudes are always thought to approach nearest to perfection, which most resemble the motions of the Bear.

If the uses of the Bear be so various to the Kamtschadales, not less general is the wear of his fine and warm fur to persons of the higher classes in Russia. A light black Bear-skin is one of the most comfortable and costly articles in the winter wardrobe of a man of fashion, at Petersburg or Moscow.

It is well known that the Bear, though not without some difficulty, may be rendered tame and docile; and he has then, at least, the appearance of being mild and obedient to his master. He may be taught to perform various tricks, to entertain the multitude. Sometimes we observe the rugged beast compelled to walk in an upright posture, with a pole betwixt his paws, a monkey on his shoulder, and surrounded by a number of dancing dogs, ridiculously dressed, all moving to some tune played on a pipe and tabor. The cruelties that are practised on the wretched beast, in training him for the purpose of this exhibition, are said to be such as would make sensibility shudder. That there should be numbers of unthinking people, who will crowd around to see the animal's rude attempts to imitate human actions, and will reward the exhibition, is not to be wondered at. But it is much to be wished that

the timely interference of the magistrate would prevent every exhibition of the kind; that in England, at least, we might not be reproached with tolerating practices so disgraceful to humanity.—Thanks to the improving taste of the times! the inhuman custom of *Bear-baiting* is nearly at an end in our country. This was once a diversion in such esteem, that the nobility and others of the highest rank in the kingdom were the encouragers, the patrons, and the supporters of it. Many of the nobility had their *Bear-ward*; and the baiting of these animals served very essentially to enliven their Christmas gambols. Even the British sovereign has sometimes been known to sanction the *Bear Garden* by his personal attendance.

In the supplementary writings of the Comte de Buffon, and the notes of M. Sonnini, there is an interesting account of some Bears brought up in a semi-domestic state at Berne, in Switzerland. These animals were kept in large square places, dug out of the earth, and lined at the sides and the bottom with stones. Dens of masonry were formed in them, under the ground of the sides, having their pavement on a level with that of the open space. These dens were each divided by a wall, and an iron grate, the latter of which was let down from above. In the middle of each square was left in the pavement, a hole sufficiently large to admit a tree of considerable size being placed upright in it. There was likewise, in each square, a large trough filled with fresh water.

It was in the year 1740, that two Bears, very young, were first brought here from Savoy. One of these, the male, broke his back, and was killed, in August 1771, by falling from the top of the tree. The female, in the month of October following, when the first part of the subsequent account was written, continued still alive.

When these animals had been here about six years, the female began to produce young ones. At the first litter,

she had only one; and afterwards she produced from one to three, but never more than this number. When the young ones come into the world, although they are by no means ugly animals, they are very unlike their parents both in shape and colour. Their body is nearly round, and their snout is somewhat sharp-pointed: they are of a yellow colour, with a white neck. No person who was a stranger to the animals, could even conjecture that they were the offspring of the Bear. They continue blind for four weeks. At first they are about eight inches long from the muzzle to the base of the tail: by the end of three months, they measure fourteen or fifteen inches; and their hair is then about an inch long. Before they are full grown, they cast all their white and yellow hair, and assume a perfectly brown coat.

The squares in which these animals were first kept, having been in the middle of the town, it was found necessary to fill them up, and to place the Bears in others that were made between the ramparts. The above-mentioned two animals were consequently separated, whilst they were conveyed into their new apartment. When they again met, they appeared to be quite in raptures; they raised themselves upright and embraced each other with the greatest delight.

After the death of the male, by his fall from the tree, the female was so much affected, that, for several days, she refused to take any food.

These animals were very fond of climbing into their tree, which was a green larch, placed there every year in the month of May. They would frequently amuse themselves by breaking pieces off the branches, particularly after the tree was newly planted. Their food was generally rye-bread, cut into large pieces, and soaked in warm water. They were also fond of all kinds of fruit; and whenever the country people, which was sometimes the

case, brought unripe fruit to the market, the officers of the police had orders to seize such, and throw it to the Bears. The animals, however, seemed on the whole to prefer greens and other esculent vegetables to most kinds of food.

Whenever the female had young ones, the male was removed from her, lest he should destroy them. These were allowed to continue with their mother for ten weeks; after which they were separated, and fed for some time, on milk and biscuits. The last litter that she produced was when she was thirty-one years old.

Two of the Bears brought up in one of these open squares, at Berne, were carried into France, and placed in one of the narrow lodges in the Menagerie of the Museum at Paris, where they had scarcely space enough to turn themselves round. The animals, thus cooped up, were fed on bread, fruit, and vegetables; but they appeared to suffer much from the confined space, which till then they had been entirely unused to. When they were first brought to this Menagerie, it was found very difficult to make them leave the cage in which they had been carried. They obstinately persisted in remaining there. To no purpose were various forcible means attempted; and in vain were numerous living animals placed before them, in the hope of enticing them out. They continued immoveable; and it was not till after many hours of useless trial, that a living duck, placed at a little distance, tempted them to come forth.

The natural disposition of these Bears was gross; but they were by no means either mischievous or savage animals. They knew the voice of their keeper; and, at all times, shewed sufficient docility and obedience to his commands.

THE AMERICAN BEAR *.

In several of the northern districts of America these Bears are found in considerable numbers; occasionally migrating southward in quest of food. They usually arrive in Louisiana, about the end of autumn, driven thither by the snows of the more northern climates. At this time they are always very lean; as they do not leave the north until the earth is covered with snow, when their subsistence of course becomes very scanty.

In the country near the Mississippi, they seldom venture to any great distance from the banks of that river; but, on each side, have in winter such beaten paths, that persons unacquainted with them would mistake them for the tracks of men. Du Pratz says he was once (though at a distance of nearly two hundred miles from any human dwelling) for a while deceived by one of them, which appeared as though thousands of men had been walking along it bare-footed. Upon inspection, however, he found that the prints of the feet were shorter than those of a man, and that at the end of each toe there was the impression of a claw. "It is proper (he says) to observe, that in those paths the Bear does not pique himself upon politeness, and will yield the way to nobody; therefore, it is prudent for a traveller not to fall out with him for such a trifling affair."

About the end of December, from the abundance of

* DESCRIPTION. The American Bear differs from the European species, principally in being smaller; and in having a more lengthened head, more pointed nose, and longer ears. The hair is also more smooth, black, soft, and glossy. The cheeks and throat are of a yellowish-brown colour.

SYNONYMS. *Ursus Americanus*. *Linnaeus*.—Ours noir de l'Amérique. *Buffon*.—Black Bear. *Pennant*.

fruits they find in Louisiana and the neighbouring countries, the Bears become so fat and lazy that they can scarcely run. At this time, when the animals are also in a condition to furnish a large quantity of oil, they are hunted by the American Indians. The nature of the chase is generally this: the Bear chiefly adopts for his retreat the hollow trunk of an old cypress; which he climbs, and then descends into the cavity from above. The hunter, whose business it is to watch him into his retreat, climbs by means of hooks a neighbouring tree, where he seats himself opposite to the hole. In one hand he holds his gun: and in the other a torch, which he darts into the cavity. Frantic with rage and terror, the Bear makes a spring from his station; but the hunter seizes the instant of his appearance, and shoots him through the head or shoulder.

Some of the Indian tribes adopt such singular ceremonies in their chase of the Bear, that I shall transcribe the curious account of them inserted in Charlevoix's *Travels in North America*:

“The chase of these animals is a matter of the first importance, and is never undertaken without abundance of ceremony. A principal warrior first gives a general invitation to all the hunters. This is followed by a most strict fast of eight days, a total abstinence from all kinds of food; notwithstanding which, the day is passed in continual song. This is done to invoke the spirits of the woods to direct the hunters to the places where there are abundance of Bears. They even cut the flesh in divers parts of their bodies, to render the spirits more propitious. They also address themselves to the manes of the beasts slain in the preceding chases, as if these were to direct them in their dreams to plenty of game. One dreamer alone cannot determine the place of the chase; numbers must concur: but, as they tell each other their dreams,

they never fail to agree. This may arise either from contrivance; or from a real agreement in their dreams, on account of their thoughts being perpetually turned on the same thing.—The chief of the hunt now gives a great feast, at which no one dares to appear without first bathing. At this entertainment they eat with great moderation, contrary to their usual custom. The master of the feast alone touches nothing; but is employed in relating to the guests ancient tales of the wonderful feats in former chases; and fresh invocations to the manes of the deceased Bears conclude the whole.

“They then sally forth amidst the acclamations of the village; equipped as if for war, and painted black. Every able hunter is on a level with a great warrior: but he must have killed his dozen great beasts before his character is established; after which his alliance is as much courted as that of the most valiant captain.—They now proceed on their way in a direct line; neither rivers, marshes, nor any other impediments, stop their course; driving before them all the beasts they find. When they arrive at the hunting-ground, they surround as large a space as they can with their company; and then contract their circle, searching at the same time every hollow tree, and every place fit for the retreat of a Bear; and they continue the same practice till the time of the chase is expired.

“As soon as a Bear is killed, a hunter puts into his mouth a lighted pipe of tobacco, and blowing into it, fills the throat with the smoke, conjuring the spirit of the animal not to resent what they are going to do to its body, nor to render their future chases unsuccessful. As the beast makes no reply, they cut out the string of the tongue, and throw it into the fire. If it crackles and shrivels up, (which it is almost sure to do,) they accept it as a good omen; if not, they consider that the spirit of the beast is

not appeased, and that the chase of the next year will be unfortunate.

“The hunters live well during the chase, on provisions which they bring with them. They return home with great pride and self-complacency; for to kill a Bear forms the character of a complete man. They give a great entertainment, at which they make it a point to leave nothing uneaten. The feast is dedicated to a certain Genius, (apparently that of Gluttony,) whose resentment they dread, if they do not eat every morsel, and even sup up the melted grease in which the meat was dressed. They sometimes eat till they burst, or bring on themselves some violent disorders. The first course is the greatest Bear they have killed; without even taking out the entrails, or skinning it; contenting themselves with singeing the skin, as is practised with hogs.”

It is common with the Southern Indians of America, to tame and domesticate the young cubs of the Bear; and these are frequently taken so young that they cannot eat. On such occasions the Indians sometimes oblige their wives to suckle them; and one of the Company's servants at Hudson's Bay, whose name was Isaac Batt, willing to be as great a brute as his Indian companions, absolutely forced one of his wives, who had recently lost her infant, to suckle a young Bear.

Lawson, Catesby, and Brickell, all relate a very surprising circumstance respecting this animal: they say that neither European nor Indian ever killed a Bear with young. In one winter, upwards of five hundred were killed in Virginia; among which were only two females, and these not pregnant. The cause is, that the male has the same dislike to his offspring that the males of some other animals have; and therefore the females, before the time of their parturition, retire into the depth of the woods and rocks, to elude the search of their savage mates.

The flesh of the American Bears is said to taste like pork, Dr. Brickell ate part of a loin of it at a planter's house in North Carolina, and mistook it for excellent pork; but such are the prejudices to which mankind are subject, that the next day, being undeceived, and invited to eat of another, he felt so much disgust, that he was not able to taste it.

THE WHITE, OR POLAR BEAR*.

The immense numbers of these animals, in the polar regions, are truly astonishing. They are not only seen on the land, but often on ice-floats several leagues at sea. They are sometimes transported in this manner to the very shores of Iceland; where they no sooner land, than all the natives are in arms to receive them. It occasionally happens, that when a Greenlander and his wife are paddling out at sea, by coming too near an ice-float, a White Bear unexpectedly jumps into their boat; and, if he does not upset it, sits calmly where he first alighted, and like a passenger suffers himself to be rowed along. It is probable that the Greenlander is never very fond of his unwieldy guest: however, he makes a virtue of necessity, and hospitably rows him to shore.

The Polar Bears are animals of tremendous fierceness.

* DESCRIPTION. The length of this animal is sometimes nearly twelve feet. It differs from the Common Bear, in having its head and neck of a more lengthened form, and the body longer in proportion to its bulk. The ears and eyes are small; and the teeth extremely large. The hair is long, coarse, and white; and its limbs of great strength. The tips of the nose and claws are perfectly black.

SYNONYMS. *Ursus maritimus*. Linn.—White Bear. *Var.*—White Sea Bear. *Martens.*—Ours blanc. *Buffon.*—Polar Bear. *Penn.*—*Shaw's Gen. Zool. Pl.* 103.—*Bew. Quad.* 295.

Barentz, in his voyage in search of a North East Passage to China, had the most horrid proofs of their ferocity in the island of Nova Zembla; where they attacked his seamen, seizing them in their mouths, carrying them off with the utmost ease, and devouring them even in the sight of their comrades.

Not many years ago, the crew of a boat belonging to a ship in the Whale-fishery shot at a Bear at a little distance, and wounded it. The animal immediately set up a dreadful howl, and ran along the ice towards the boat. Before he reached it, a second shot was fired, which hit him. This served but to increase his fury. He presently swam to the boat, and, in attempting to get on board, placed one of his fore feet upon the gunnel; but a sailor, having a hatchet in his hand, cut it off. The animal still, however, continued to swim after them till they arrived at the ship; and several shots were fired at him, which took effect: but on reaching the ship, he immediately ascended the deck; and the crew having fled into the shrouds, he was pursuing them thither, when a shot laid him dead upon the deck.

The usual food of these animals consists of seals, fish, and the carcasses of whales; but when on land they prey on deer and other animals. They likewise eat various kinds of berries, which they happen to find. They go on the flakes of ice in search of seals; and also attack the arctic walrus: but this creature makes a noble defence with its long tusks, and sometimes comes off victorious. They are said to be frequently seen in Greenland in great droves, allured by the smell of the flesh of seals: and they will sometimes surround the habitations of the natives, and attempt to break in; when, it is added, the most successful method of repelling them is by the smoke of burnt feathers.

The following story of the sagacity of these animals in searching for prey, is inserted from the works of the Hon. Robert Boyle: "An old sea captain told me that the White Bears in or about Greenland, notwithstanding the coldness of the climate, have an excellent nose; and that sometimes, when the fishermen had dismissed the carcase of a whale, and left it floating on the waves, three or four leagues from the shore, whence it could not be seen, these animals would stand as near the water as they could, and, raising themselves on their hind legs, loudly snuff in the air, and with the two paws of their fore legs drive it as it were against their snouts; and when they were (as my relater supposed) satisfied whence the odour came, they would cast themselves into the sea, and swim directly towards the whale; as this person and others observed, who had sometimes the curiosity to row at a distance after them, to see whether their noses would serve them for guides when their eyes could not."

During the summer, they reside chiefly on the ice-islands; and frequently swim from one to another, though six or seven leagues asunder*. They lodge in dens formed in the vast masses of ice; where they breed, producing one or two young at a time. About the end of March they bring these out, and immediately bend their course towards the sea. At this time their young ones are not larger than a white fox; and their steps on the snow not bigger than a crown-piece, while those of the dam will measure near fifteen inches in length, and nine in breadth.

* There seems to be considerable difference in opinion on this subject. Buffon says, that they never swim more than a league at a time; that in Norway they are followed in small boats, and are soon fatigued: that also they sometimes dive, but this is only for a few seconds; and lest they should be drowned, they suffer themselves to be killed on the surface of the water.

—When the masses of ice are detached by strong winds or currents, the Bears allow themselves to be carried along with them; and as they can neither regain the land, nor abandon the ice on which they are embarked, they often perish in the open sea.

The affection between the parent and the young is so great, that they will sooner die than desert each other in distress. I shall relate an instance; one which probably the reader will recollect. “While the *Carcase Frigate*, which went out some years ago to make discoveries towards the North Pole, was locked in the ice, early one morning the man at the mast-head gave notice that three Bears were making their way very fast over the frozen ocean, and were directing their course towards the ship. They had, no doubt, been invited by the scent of some blubber of a sea-horse that the crew had killed a few days before; which had been set on fire, and was burning on the ice at the time of their approach. They proved to be a she Bear and her two cubs; but the cubs were nearly as large as the dam. They ran eagerly to the fire; and drew out of the flames part of the flesh of the sea-horse, that remained unconsumed, and ate it voraciously. The crew from the ships threw great lumps of the flesh of the sea-horse, which they had still remaining, upon the ice. These the old Bear fetched away singly, laid every lump before her cubs as she brought it, and dividing it, gave to each a share, reserving but a small portion to herself. As she was fetching away the last piece, the sailors levelled their muskets at the cubs, and shot them both dead; and in her retreat they wounded the dam, but not mortally. It would have drawn tears of pity from any but unfeeling minds, to have marked the affectionate concern expressed by this poor beast in the last moments of her expiring young. Though she was herself dreadfully wounded, and could but just crawl to the place where

they lay, she carried the lump of flesh she had fetched away, as she had done others before; tore it in pieces, and laid it before them; and when she saw that they refused to eat, she laid her paws first upon one, and then upon the other, and endeavoured to raise them up: all this while it was pitiful to hear her moan. When she found she could not stir them, she went off, and when she had got to some distance, looked back and moaned; and that not availing her to entice them away, she returned, and, smelling round them, began to lick their wounds. She went off a second time as before; and, having crawled a few paces, looked again behind her, and for some time stood moaning. But still her cubs not rising to follow her, she returned to them again; and, with signs of inexpressible fondness, went round, pawing them, and moaning. Finding at last that they were cold and lifeless, she raised her head towards the ship, and uttered a growl of despair, which the murderers returned with a volley of musket-balls. She fell between her cubs, and died licking their wounds."

The males, says Mr. Hearne, are, at a certain time of the year, so much attached to their mates, that he has often seen one of them, when a female was killed, come and put his paws over her, and in this position suffer himself to be shot rather than quit her.

During the winter these animals retire and bed themselves deep in the snow, or under the fixed ice of some eminence; where they pass, in a state of torpidity, the long and dismal Arctic night, and re-appear only with the return of the sun.

Of all quadrupeds, the Polar Bear is one that has the greatest dread of heat. One of them described by Professor Pallas, would not stay in its house in the winter; although at Krasnojarsk in Siberia, where the climate is very cold. It seemed to experience great pleasure in rolling itself on the snow.—A Polar Bear that was kept in the Museum of Natural History, in Paris, suffered greatly during the hot

weather. The keepers, throughout the year, were obliged to throw upon it sixty or seventy pails of water a-day, to refresh it. This animal was fed only with bread, of which it daily consumed no more than about six pounds, notwithstanding which it became very fat.—It is not known to what age these animals live. One specimen has been in the Museum seven years, and it was full-grown when first brought. It is now blind, and appears to have many other infirmities.

White Bears are sometimes found in Iceland; but not being natives of the island, they are supposed to have floated from the opposite coast of Greenland, on some of the huge masses of ice that are detached from those shores. After so long an abstinence as they must necessarily have undergone in the voyage, they are reduced by hunger to attack even men, if they should come in their way. But Mr. Horrebow informs us, that the natives are always able to escape their fury, if they can only throw in their way something to amuse them. “A glove (he says) is very proper for this purpose; for the Bear will not stir till he has turned every finger of it inside out; and as these animals are not very dexterous with their paws, this takes up some time, and in the mean while the person makes off.

In Madox's History of the Exchequer, I find an order, in the year 1253, to the sheriffs of London, to provide an iron chain and cord for the king's White Bear in the Tower of London, then lately sent from Norway. It is directed that the cord be of sufficient length, and so strong as to hold the Bear while fishing in the Thames.

THE GLUTTON*.

The most material circumstance relative to the economy of these animals, is the stratagem which they adopt in order

* DESCRIPTION. The length of the Glutton is three feet; exclusive of the tail, which measures about one foot. The top of the head,

to allure and seize upon their prey. We are informed that they climb into trees in the neighbourhood of the herds of deer, and carry along with them a considerable quantity of a kind of moss to which the deer are partial. As soon as any one of the herd happens to approach the tree, the Glutton throws down the moss. If the deer stops to eat, he instantly darts upon its back; and, after fixing himself firmly between the horns, tears out its eyes: which torments the animal to such a degree, that either to put an end to its torments, or to get rid of its cruel enemy, it strikes its head against the trees till it falls down dead. The Glutton divides the flesh of the deer into convenient portions, and conceals them in the earth for future provisions.—When the voracious animal has once firmly fixed himself by his claws and teeth, it is impossible to remove him. In vain does the unfortunate stag seek its safety in flight: and if it does not, as has been asserted, kill itself, its enemy soon brings it to the ground by sucking its blood, and gradually devouring its body.

The Gluttons feed also on hares, mice, birds, and even on putrid flesh; and it is said by the Norwegians (though certainly without foundation) that they carry their voracity to such a degree, as to be obliged to relieve themselves by squeezing their over-swollen bodies between two trees; by this means exonerating their stomachs of that food which has not time to digest. If this creature seizes a carcase, even bigger than himself, he will not desist from eating so long as there is a mouthful left.

and the whole of the back, as well as the muzzle and feet, are of a blackish brown. The sides are dusky, and the tail is the colour of the body.

SYNONYMS. *Ursus Gulo*. *Linn.*—*Gulo*. *Var.*—*Vielfrass*, *Jarf*, *Jæerven*. *Genberg.*—*Glouton*. *Buffon.*—*Glutton*. *Penn.*—*Shaw's Gen. Zool. Pl.* 104.

He is so strong an animal, that three stout greyhounds are scarcely able to overcome him. One that was put into the water had two dogs let loose at him. The Glutton soon fixed his claws into the head of one of them, and had the sense to keep the animal under water till it was suffocated.—When the Glutton is attacked, he makes a stout resistance; for he will tear even the stock from a gun with his teeth, or break the trap in pieces in which he is caught. He is, notwithstanding, capable of being rendered tame, and of learning many entertaining tricks.

In a state of nature, he suffers men to approach him without exhibiting the least signs of fear, and even without any apparent wish to avoid them. This may be the effect of living in desert countries; generally out of the sight, and consequently removed from the attacks of man.—He sometimes goes in quest of snares laid for other animals, but has too much sagacity to suffer himself to be taken. In countries where these animals are at all numerous, the hunters complain heavily of their voracity in devouring the game from the traps.

The Glutton is hunted only for his skin, which is very valuable. The Kamtschadales esteem it so much, that they say the heavenly Beings wear garments made of no other fur than this; and they would describe a man as most richly attired, if he had on the skin of a Glutton. The women ornament their hair with the white paws of this animal, which they esteem an elegant addition to their dress; and for the two fore paws they will sometimes give a couple of sea otters. No Kamtschadale can make his wife or mistress a more valuable present than by giving her one of these skins.

Gluttons are found in all the countries bordering upon the northern ocean. They are also natives of various parts of Canada, and of the country around Hudson's Bay.

THE WOLVERINE*.

The pace of these animals is very slow; but their wonderful sagacity, strength, and acute scent, make to them ample amends for this defect. They burrow in the ground; and are said to be very fierce and savage, so much so, as even to be a terror to the wolves and bears. They are also possessed of great courage and resolution. One of them has been known to seize on a deer that an Indian had killed; and though the Indian advanced within twenty yards, he still refused to abandon his capture, and even suffered himself to be shot on the fallen animal. They have also been frequently seen to take a deer from a wolf, before the latter had time to begin his repast after killing it. Indeed their amazing strength, and the length and sharpness of their claws, render them capable of making a strong resistance against every other animal of their own country.

As a proof of their surprising strength, there was one at Churchill, on Hudson's Bay, some years since, that overset the greatest part of a pile of wood which measured upwards of seventy yards round, and contained a whole winter's firing, to get at some provisions that had been hidden there by the Company's servants when going to the factory to spend the Christmas holidays. This animal

* DESCRIPTION. The Wolverine resembles the wolf in size, and the glutton in the figure of its head. The upper parts and the belly are of a reddish brown: the sides are yellowish brown; and a band of this colour crosses the back near the tail, which is long and of a chesnut colour. The face is black. The legs are very strong, thick, short, and black; and the soles of the feet are covered with hair.

These animals are not uncommon in the northern regions of America.

SYNONYMS. *Ursus Luscus*. *Linnaeus*.—Quickhatch. *Edwards*.—Wolverine. *Pennant*.—*Shaw's Gen. Zool. Pl.* 106.

had for many weeks been lurking about the neighbourhood of their tent; and had committed many depredations on the game caught in their traps and snares, as well as eaten many of the foxes that were killed by guns set for the purpose; but he was too cunning to take either trap or gun himself. The people thought they had adopted the most effectual method to secure their provisions, by tying them up in bundles, and placing them on the top of the wood pile. They could not suppose the Wolverine would even have found out where they were; and much less that he could get at them if he did discover them. To their astonishment, however, when they returned, they found the greatest part of the pile thrown down, notwithstanding some of the trees with which it was constructed were as much as two men could carry. The wood was very much scattered about; and it was imagined, that in the animal's attempting to carry off his booty, some of the small parcels of provisions had fallen down into the heart of the pile, and, sooner than lose half his prize, he was at the trouble of doing this. The bags of flour, oatmeal, and peas, though of no use to him, he tore all to pieces, and scattered the contents about on the snow; but every bit of animal food, consisting of beef, pork, bacon, venison, salted geese, and partridges, in considerable quantities, he carried away.

The Wolverines are great enemies to the beavers, which they sometimes seize as they come from their houses; but the manner of life of the latter renders them more difficult to come at than many other animals. They commit vast depredations on the foxes during the summer, while the young-ones are small. Their quick scent directs them to the dens; and if the entrance be not large enough, their strength enables them to widen it; when they go in, and kill both the mother and her cubs. They are, in short,

nearly the most destructive animals of the country they inhabit.

THE RACCOON*.

The Raccoon is a native of North America, and of several of the West India islands, where it inhabits the hollows of trees. Its food consists principally of maize, sugar-canes, and various sorts of fruits. It is also supposed to devour birds, and their eggs. When near the shores, the Raccoons live much on shell-fish, and particularly on oysters. We are told that they will watch the opening of the shell, dexterously put in their paw, and tear out the contents: sometimes, however, the oyster suddenly closes, catches the thief, and detains him till he is drowned by the return of the tide. They feed likewise on crabs; in the taking of which they exhibit much cunning. Brickell, who relates these circumstances, says, that the Raccoon will stand on the side of a swamp, and hang its tail over into the water; which the crabs, mistaking for food, lay hold of; and as soon as the beast feels them pinch, he pulls them out with a sudden jerk. He then takes them to a little distance from the water's edge; and, in devouring them, is careful to get them cross-ways in his mouth, lest he should suffer from their nippers. A species of land

* DESCRIPTION. The colour of this animal is gray; and its head is shaped somewhat like that of a fox. The face is white; and the eyes, which are large, are surrounded with a black band, from which a dusky stripe runs along the nose. The tail is very bushy, and is annulated with black. The back is somewhat arched; and the fore-legs are shorter than the others. The length of the Raccoon is about two feet, from the nose to the tail; and the tail is about a foot long.

SYNONYMS. *Ursus Lotor*. *Linnaeus*—*Mapach*. *Var.*—*Le Raton*. *Buffon*.—*Raccoon*. *Penn.*—*Shaw's Gen. Zool. Pl.* 105.—*Bew. Quad.* p. 279.

crab, found in holes of the sand in North Carolina, are frequently the food of the Raccoon. He takes them by putting one of his fore-paws into the ground, and hauling them out. These animals feed chiefly by night: as, except in dull weather, they sleep during the greatest part of the day.

The Raccoon is an active and sprightly animal, but has a singularly oblique gait in walking. His sharp claws enable him to climb trees with great facility, and he ventures to run even to the extremities of the branches.—He is easily tamed, and is then good-natured and sportive; but is almost constantly in motion, and as unlucky and inquisitive as a monkey,—examining every thing with his paws, which he uses as hands to lay hold of whatever is given to him, and to carry the meat to his mouth. He sits up to eat; and is very fond of sweet things, and strong liquors, with which latter he will even get excessively drunk. He washes his face with his feet, like a cat.

M. Blanquart des Salines had a Raccoon, of which he has given the following particulars:—Before it came into his possession, it had always been chained. In this state of captivity it was very gentle, but had little inclination to fondness. His chain sometimes broke, and on such occasions liberty rendered him insolent. He took possession of an apartment, which he would allow none to enter; and it was with some difficulty that he could again be reconciled to bondage. When permitted to be loosed from his confinement, however, he would express his gratitude by a thousand caressing gambols. But this was by no means the case when he effected his own escape. He would then roam about, sometimes for three or four days together, upon the roofs of the neighbouring houses; descend, during the night, into the court-yards; enter the hen-roosts, strangle all the poultry, and eat their heads. His chain rendered him more circumspect, but by no means more

humane. When he was in confinement, he employed every artifice to make the fowls grow familiar with him: he permitted them to partake of his victuals; and it was only after having inspired them with the greatest notions of security that he would seize one, and tear it in pieces. Some young cats met with the same fate.

He used to open oysters with wonderful dexterity. His sense of touch was exquisite; for, in all his little operations, he seldom used either his nose or his eye. He would pass an oyster under his hind paws; then, without looking at it, search with his fore-paws for the weakest part; there sinking his claws, he would separate the shells, and leave not a vestige of the fish.

He was extremely sensible of ill-treatment.—A servant, one day, gave him several lashes with a whip; but the man ever afterwards endeavoured, in vain, to accomplish a reconciliation. Neither eggs, nor fish, of which he was exceedingly fond, could appease his resentment. At the approach of this servant, he always flew into a rage; his eyes kindled, he endeavoured to spring at the man, uttered the most dolorous cries, and rejected every thing presented to him, till the disagreeable object disappeared.—He never allowed hay or straw to remain in his nest; but chose rather to lie upon wood. When litter was put in, he instantly threw it out.

Every thing he ate, he used (as indeed the whole species do) to soften, or rather dilute, in water, by immersing it in the vessel that contained the water given him for drink. The defect of saliva, or having but a small quantity of it, is most probably the cause of his adopting this mode. This immersion he only practised with dry food; for fresh meat, peaches, and raisins, he ate without it.

He disliked children; their crying irritated him, and he made every effort to spring upon them.—A small bitch, of which he was fond, he chastised severely when she barked

too loud.—According to Linnæus, the Raccoon has a wonderful antipathy to hogs' bristles; and is much disturbed at the sight of a brush.—The female produces two young-ones at a birth, which commonly takes place about May.

The animal is hunted for the sake of his fur; which is used by the hatters, and is considered as next in value to that of the beaver: it is used also in linings for garments. The skins, when properly dressed, make good gloves, and upper-leathers for shoes.—The Negroes frequently eat the flesh of the Raccoon, and are very fond of it.

THE BADGER *.

Although in itself a harmless and inoffensive animal, living principally on roots, fruit, and other vegetable food, the Badger has been provided by nature with such weapons, that few creatures can attack it with impunity. The address and courage with which it defends itself against beasts of prey, have caused it to be frequently baited with dogs, as a popular amusement. Though naturally of an indolent disposition, he now exerts the most vigorous efforts, and very frequently inflicts desperate wounds on his

* DESCRIPTION. The general length of the Badger is about two feet and a half; and of the tail, six inches. Its body and legs are thick. The eyes and ears are small; and the claws of the fore-legs long and straight. It is of an uniform gray colour above, and on the under parts entirely black. The face is white; and along each side of the head runs a black pyramidal stripe, which includes the eyes and ears. The hair is coarse, and the teeth and claws peculiarly strong.

The Badger is not only well known in England, but is occasionally found in all the temperate parts of Europe.

SYNONYMS. *Ursus Meles*. Linnæus.—Common Badger. Penn.—Brock. Grey-pate. Ray.—Blaireu. Buffon.—Bingley's Mem. of Brit. Quad. Pl. 13.

adversaries. The skin is so thick and loose, as not only to resist the impressions of the teeth, but also to suffer him, even when within their gripe, to turn round upon and bite them in the most tender parts. In this manner does he resist repeated attacks, both of men and dogs, from all quarters; till, overpowered with numbers, and enfeebled by wounds, he is at last compelled to submit.

The Badger inhabits woody places, in the clefts of rocks, or in burrows which he forms in the ground. He is a very cleanly animal, keeping his subterraneous mansion exceedingly neat. He continues in his habitation during the day, and does not make his appearance abroad till the evening. At times, from indulging in indolence and sleep, he becomes excessively fat. During the severe weather of winter he remains in a torpid state in his den, sleeping on a commodious bed formed of dried grass. Under the tail there is a receptacle, in which is secreted a white fetid substance, that constantly exudes through the orifice, and thus gives him a most unpleasant smell.

These animals are not known to do any other mischief to mankind, than by scratching and rooting up the ground, in search of food; which is always performed during the night. From this circumstance arises one of the modes usually practised of taking them. Their den is discovered; and when they are abroad in the night, a sack is fastened at the mouth. One person remains near the hole to watch; while another beats round the fields with a dog, in order to drive them home. As soon as the man at the hole hears that one has run in for refuge, he immediately seizes the mouth of the sack, ties it, and carries it off. This mode, in many parts of the country, is called "sacking the Badger." Sometimes they are caught by means of steel traps, placed in their haunts.

They live in pairs; and produce, in the spring of the year, four or five young-ones. If caught before they are

grown up, they may be tamed.—The skin, dressed with the hair on, is used for various purposes; and the hairs are made into brushes for painters. The flesh, when the animals are well fed, makes excellent hams and bacon.

OF THE OPOSSUMS IN GENERAL*.

We now come to a race of quadrupeds, so singular in their conformation, as, at their first discovery, to have excited the general surprise and admiration of mankind. The females of most of the species are furnished with abdominal pouches, for the protection and preservation of their young. In some of these there are two, in others three, distinct cavities; which can be shut or opened at pleasure, being provided with two bones for that purpose. In these pouches the young remain, hanging to the nipples, till they are large enough to run about.—The Opossums are principally confined to the New Continent, and only one species has yet been discovered as a native of Europe.

THE VIRGINIAN OPOSSUM†.

From the formation of the feet of these animals, which, in some respects, are like those of the monkies, it is evident that their motions, on the ground, must be constrained and awkward. In recompence, however, for this apparent

* These animals are furnished with an external abdominal pouch. They have ten front-teeth in the upper, and eight in the lower jaw; in the former of which the two middle ones are the longest, but in the latter are broader and very short. The canine-teeth are long, and the grinders indented. The tongue is somewhat rough, being furnished with pointed papillæ.

† DESCRIPTION. The Virginian Opossum is about the size of a small cat: from the upright growth of its fur, it, however, appears to be much thicker. Its general colour is a dingy white. The head

defect, they are able to ascend trees with wonderful agility. Here, by the help of their tail, which is so muscular and flexile as to admit of being coiled firmly round the branches, they are more active than most other quadrupeds. Sometimes they will continue for a considerable while together with their bodies suspended, and on the watch for prey. At other times, like monkeys and squirrels, they will leap from tree to tree, in pursuit of food, or to escape from their enemies.

If an Opossum be pursued and overtaken, it will feign itself dead, till the danger is over; and, says M. du Pratz, it will not, when seized in this condition, exhibit signs of life, though even placed on a red-hot iron; and when there are any young in the pouch of a female, she will suffer both herself and them to be roasted alive rather than give them up. These creatures never move till their assailant is either gone to a distance, or has concealed himself; on which they endeavour to scramble, with as much expedition as possible, into some hole or bush.—They are so very tenacious of life, that, in North Carolina, there is a well-known adage, “If a Cat has nine lives, the Opossum has nineteen.”

Although, says the Comte de Buffon, these animals are carnivorous, and even greedy of blood, which they suck with avidity, they also feed upon reptiles, insects, sugar-canes, potatoes, roots, and even leaves and the bark of

is long, and sharpened; and the mouth wide. The tail is about a foot long; prehensile; hairy at its origin, but afterwards covered with a scaly skin, which gives it somewhat the appearance of a snake. The legs are short, and blackish; and all the toes (except the two interior ones, which are flat and rounded, with nails like those of the monkey tribe) are armed with sharp claws.

SYNONYMS. *Didelphis opossum*. *Linnaeus*.—*Didelphis Virginiana*. *Shaw*.—*Le Sarigue, ou l'Opossum*. *Buffon*.—*Shaw's Gen. Zool. Pl.* 107.

trees. Being neither wild nor ferocious, they are easily tamed; and, in a domestic state, are by no means nice with respect to their food. Their smell is offensive, somewhat resembling that of a fox. When two or more are kept in the same place, they are almost continually employed in licking each other; and whenever they are fondled by any person, they make a purring noise not unlike that of a cat.

In a wild state, when the female is about to litter, she chooses a place in the thick bushes, at the foot of some tree. Assisted by the male, she there collects together a quantity of fine, dry grass; this is loaded upon her belly, and the male drags her and her burthen to the nest, by her tail. She produces from four to six young-ones at a time. As soon as these come into the world, they retreat into her pouch or false belly, blind, naked, and exactly resembling little foetuses; and fasten themselves to the teats. Some travellers assert, that, at this period of their existence, they are not bigger than a large fly; a fact, says the Comte de Buffon, not so much exaggerated as might be imagined, since he had himself seen in an animal, of a species resembling the Opossum, young-ones sticking to the teats that were not larger than beans. They fasten as closely to the teats as if they grew there; and they continue to adhere apparently inanimate, till they arrive at some degree of perfection in shape, and obtain their sight, strength, and hair; after which they undergo a sort of second birth. From that time they use the pouch merely as an asylum from danger. The mother carries them about with the utmost affection, and they may frequently be seen sporting in and out of this secure retreat. Whenever they are surprised, and have not time to retire into the pouch, it is said, they will adhere to the tail of the parent, and thus still endeavour to escape with her.

The American Indians spin the hair of the Opossum, and dye it red; then weave it into girdles, and other parts of their dress. The flesh is white, and well-tasted, and is preferred by the Indians to pork: that of the young eats very much like sucking pig.

OF THE KANGUROOS IN GENERAL*.

In the circumstance of their being furnished with an abdominal pouch for the protection of their offspring, these animals are allied to the Opossums. But in other respects, both of structure and appearance, they are widely different. The tail of the Kanguroos is so strong and muscular, as occasionally to serve almost the purpose of an additional leg.

Only three species have as yet been ascertained, all of which are natives of New Holland.

THE GREAT KANGUROO†.

It was in the year 1770 that this very singular species of quadruped was originally discovered, in New Holland, by some of the persons who accompanied Captain Cook in his first circumnavigation of the world. From the general

* The Kanguroos have six front teeth in the upper jaw, emarginated; and two in the lower, very large, long, and sharp, pointing forwards. There are five grinders on each side in both jaws, distant from the other teeth. The fore-legs are short, and the hinder ones very long; and in the female there is an abdominal pouch, containing the teats.

† DESCRIPTION. These animals have frequently been known to measure as much as nine feet in length, from the tip of the nose to the end of the tail; and to weigh a hundred and fifty pounds: and this is by no means the largest size to which they will attain. The greatest circumference of the animal is round the bottom of the

form and structure of the Kangaroo, there can be little doubt that its chief progressive motion must be by leaps; in these exertions it has been seen to exceed twenty feet at a time, and this so often repeated as almost to elude the swiftness of the fleetest greyhound; besides which, it will frequently bound over obstacles of nine feet or more in height, with the greatest ease. M. Labillardiere, however, states that one of his crew shot a young Kangaroo upon the shore, and he was much surprised to observe that it used all its four feet in running, and did not support itself on the hinder feet only.

The Kangaroos have vast strength in their tail, which they occasionally use as a weapon of defence; for with it they can strike with such astonishing force as even to break the leg of a man. The colonists for some time considered this as the animal's chief defence; but having of late hunted them with greyhounds, it was soon discovered that they use both their claws and teeth. On the hound's seizing them, they turn, and, catching hold with the nails

belly and hips; being very small about the head and neck, and increasing gradually downwards. The fore-legs of the largest are about nineteen inches in length; the hinder ones three feet seven inches. The hind legs, which are perfectly bare and callous beneath, are very strong; and, when sitting erect, the animal rests on the whole of their length, its rump being elevated several inches from the ground. The claws are only three in number, the middle one exceeding the others greatly in length and strength: but the inner one is of a peculiar structure; at first sight appearing single, though on further inspection it is seen to be really divided down the middle, and even through the ball of the toe belonging to it, and appearing as if separated by a sharp instrument

SYNONYMS. *Macropus major*. Shaw.—*Macropus giganteus*. *Nat. Miscell.*—*Didelphis gigantea*. Linn.—Gigantic Jerboa. Zimmerman.—Kanguru. Var.—Great Kangaroo. Shaw.—Shaw's Gen. Zool. Pl. 115.—Bew. Quad. 439.

of the fore paws, strike the dog with the claws of their hind feet, which are wonderfully strong, and tear him in such a manner, that the hunters are frequently under the necessity of carrying him home on account of the severity of his wounds.—The native dogs of the country hunt and kill the Kangaroo; but these are more stout and ferocious than our greyhounds. In the year 1788, one of them was seen, by one of the colonists, in this pursuit; and the person, till he had shot the dog, mistook them both for Kangaroos.

The Kangaroo generally feeds standing on its four feet, in the manner of other quadrupeds. It drinks by lapping. In a state of captivity, it has a trick of sometimes springing forwards and kicking with its hind feet in a very forcible manner; during which action it rests or props itself on the base of its tail.

The female has two mammæ, or breasts, in the abdominal pouch, on each of which are two teats: yet, so far as hath been hitherto observed, she produces but one young-one at a birth: and so exceedingly diminutive is this at its first exclusion from the uterus, that it scarcely exceeds an inch in length, and weighs but twenty-one grains. At this early period of its growth, the mouth is merely a round hole, just large enough to receive the point of the nipple; but it gradually extends with age, till capable of receiving the whole nipple, which then lies in a groove, formed in the middle of the tongue, and well adapted to that purpose. It seems probable that in the first state it is attached to the teat by a viscid gelatinous substance, which is always found in the uterus. At this time, feeble as it may appear in other respects, the fore-paws are, comparatively, large and strong, and the claws extremely distinct, to facilitate the motion of the little animal during its residence in the large pouch; while the hind legs, which are afterwards to become very long and stout, are now both shorter

and smaller than the others. The young-one continues to reside in the pouch till it has attained its full maturity, occasionally running out for exercise or amusement; and even after it has quitted this maternal retreat, it oftentimes runs into it for shelter, on the least indication of danger.

The Kanguroos live entirely on vegetable substances, and chiefly on grass. In their native state they are said to feed in herds of thirty or forty together; and one is generally observed to be stationed, apparently on watch, at a distance from the rest. According to Labillardiere, they seem to be nocturnal animals. They have the eye furnished with nictitating or winking membranes, situated at the interior angle, and capable of being extended at pleasure entirely over the ball.—They live in burrows which they form in the ground.

One of the most remarkable peculiarities of this animal, is the extraordinary faculty which it has of separating, to a considerable distance, the two long fore teeth in the lower jaw. This, however, is not absolutely peculiar to the Kanguroo; but takes place also in an animal of a very different and distinct genus, the *Mus maritimus*, or African Rat.

The flesh of the Kanguroo is said to be somewhat coarse; and, as such, is eaten rather from want of food, than as an article of luxury. Mr. Hunter, however, calls it good mutton; but owns it is not quite so delicate as what he has sometimes seen bought in Leadenhall-market.

The Kanguroo may now be considered as in a great degree naturalized in England; several having been kept for some years in the royal domains at Richmond, which, during their residence there, have produced young, and apparently promise to render this most elegant animal a permanent acquisition to our country; though it must, no doubt, lose, by confinement and alteration of food, several of its natural habits, and exhibit somewhat less of that

bounding vivacity which so much distinguishes it in its native wilds of New Holland.

OF MOLES IN GENERAL*.

The animals which constitute the present tribe are easily distinguished from all other quadrupeds. Their body is thick, and somewhat cylindrical; and their snout formed like that of the hog, for rooting in the ground in search of worms and the larvæ of insects, their principal food. The fore-feet are strong, and well calculated for digging those subterraneous retreats in which they entirely reside. They have no external ears; and the eyes are very small, and completely hidden in the fur. There are *seven* species.

THE COMMON MOLE†.

Destined by its Creator to seek a subsistence under the surface of the ground, the fore-legs of the Mole, which are very short, and excessively strong and broad, are situated outwards, and furnished with large claws, by means of which it is enabled to work away the earth from before it with the utmost ease. Its hind feet, which are much smaller, are calculated for throwing back the mould during its subterraneous progress. The snout is also slender,

* In the upper jaw the Moles have six unequal front teeth, and in the lower jaw eight. There is one canine-tooth on each side, in both jaws, the upper ones of which are the largest; with seven grinders above, and six below.

† The Mole is an animal so well known, that any particular description of its shape and dimensions is unnecessary.

SYNONYMS. *Talpa Europea*. Linn.—European Mole. Penn.—Mole, Mold-warp, or Want. Ray.—Taupe. Buffon.—Bingley's Mem. of Brit. Quad. Pl. 19.

strong, and tendinous; and there is no appearance of a neck. Its general length is between five and six inches.

The eyes of the Mole are exceedingly small; so much so, that many persons have doubted whether they were intended for distinct vision, or only to afford the animal so much sensibility of the approach of light, as sufficiently to warn it of the danger of exposure. They have, however, been proved to contain every property necessary to distinct sight. The faculty of hearing is said to be possessed by the Mole in a very eminent degree; and if at any time it emerges from its retreat, it is by this means enabled instantly to disappear on the approach of danger.

The females bring forth, about the month of April, four or five young-ones; and the habitations in which these are deposited, are constructed with peculiar care and intelligence. The parent animals begin their operations by raising the earth and forming a tolerably high arch. They leave partitions, or a kind of pillars, at certain distances; beat and press the earth; interweave it with the roots of plants; and render it so hard and solid, that the water cannot penetrate the vault, on account of its convexity and firmness. They then elevate a little hillock under the principal arch; upon which they lay herbs and leaves, as a bed for their young. In this situation they are above the level of the ground, and consequently above the reach of ordinary inundations. They are at the same time defended from the rains by the large vault that covers the internal one, upon the summit of which last they rest along with their young. The internal hillock is pierced on all sides with sloping holes; which descend still lower, and serve as subterraneous passages for the mother to go out in quest of food for herself and her offspring. These by-paths are beaten and firm; they extend about twelve or fifteen paces, and issue from the principal mansion like rays from a centre. Under the superior vault we likewise find remains

of the roots of the meadow-saffron, which seem to be the first food given to the young.

In summer, the Mole descends to the low hillocks and flat land; and, above all, makes choice of meadows for the place of its residence, because it finds the earth there fresher, and softer to dig through. If the weather continues long dry, it repairs to the borders of ditches, the banks of rivers and streams, and places contiguous to hedges.

It seldom forms its hole more than five or six inches under the surface. In the act of doing this, it scrapes the earth before it on one side, till the quantity becomes too great for it to labour onwards with ease; it then works towards the surface, and by pushing with its head, and the assistance of its nervous paws, gradually raises the mould which incommodes it,—and thus produces those small hills so common in our fields. After getting rid of the earth in this manner, it proceeds forward, and continues its labour as before; and a person may easily discover how many Moles are contained in a certain space of ground, by counting the newly-raised Mole-hills, which have no communication with each other.

Moles, like the Beavers and some other quadrupeds, live in pairs; and so lively and reciprocal an attachment subsists between them, that they seem to disrelish all other society. In their dark abodes, they enjoy the placid habits of repose and of solitude; they also have the art of securing themselves from injury, of almost instantaneously making an asylum or habitation, and of obtaining a plentiful subsistence without the necessity of going abroad. They shut up the entrance to their retreats; and seldom leave them, unless compelled by the admission of water, or when their mansions are demolished.

The Mole is chiefly found in grounds where the soil is loose and soft. During the summer time, these animals run in search of food, in the night, among the grass; and thus

frequently become the prey of owls. They exhibit a considerable degree of art in skinning the worms, which they always do before they eat them; stripping the skin from end to end, and squeezing out all the contents of the body.

When Moles are first caught, either by digging or otherwise, they utter a shrill scream, and prepare for defence by exerting the strength of their claws and teeth. They are said to be very ferocious animals; and however contented they may be together underground, yet when above they will sometimes tear and eat one another. In a glass case, in which a Mole, a Toad, and a Viper were enclosed, the Mole has been known to dispatch the other two, and to devour a great part of each.

The following is a very remarkable instance, related by Arthur Bruce, Esq. in the Transactions of the Linnean Society, of the exertions which the Mole makes towards crossing even broad waters: "On visiting (says this gentleman) the Loch of Clunie, which I often did, I observed in it a small island at the distance of one hundred and eighty yards from the nearest land, measured to be so upon the ice. Upon the island, Lord Airly, the proprietor, has a castle and a small shrubbery. I remarked frequently the appearance of fresh mole-casts or hills. I for some time took them for those of the water-mouse; and one day asked the gardener if it was so. No, he said, it was the Mole; and that he had caught one or two lately. Five or six years ago he caught two in traps; and for two years after this he had observed none. But about four years ago, coming ashore one summer's evening in the dusk, he and another person (Lord Airly's butler) saw, at a short distance, upon the smooth water, some animal paddling to, and not from, the island. They soon closed with this feeble passenger; and found it to be our Common Mole; led by a most astonishing instinct, from the nearest point

of land, (the Castle-hill,) to take possession of this desert island.—It had been, at the time of my visit, for the space of two years quite free from any subterraneous inhabitant; but the Mole has, for more than a year past, made its appearance again, and its operations I have since been witness to.”—The depth of water in this lake is seldom less, either in summer or winter, than six feet in the shallowest, and from thirty to forty in the deepest parts.

People in general are not aware of the great mischief occasioned in fields and gardens by these animals. We are, however, informed by M. de Buffon, that in the year 1740 he planted about sixteen acres of land with acorns, the greater part of which were in a very short time carried away by the Moles to their subterraneous retreats. In many of these were found half a bushel, and in some even a bushel. Buffon, after this circumstance, caused a great number of iron traps to be constructed; by which, in less than three weeks, he caught 1300 Moles.—To this instance of devastation we may add the following: In the year 1742 they were so numerous in some parts of Holland, that one farmer alone caught between five and six thousand.

I shall conclude this article with Dr. Darwin's description of the habitations of Moles; and an account of the methods in which they are to be taken.—“The Moles (says this writer) have cities underground; which consist of houses, or nests, where they breed and nurse their young. Communicating with these are wider and more frequented streets, made by the perpetual journeys of the male and female parents; as well as many other less frequented alleys or by-roads, with many diverging branches, which they daily extend, to collect food for themselves or their progeny.

“This animal is most active in the vernal months, during the time of its courtship; and many more burrows are

at this time made in the earth for their meeting with each other. And though they are commonly esteemed to be blind, yet they appear to have some perception of light, even in their subterraneous habitations; because they begin their work as soon as it is light, and consequently before the warmth of the sun can be supposed to affect them.—Hence one method of destroying them consists in attending to them early, before sunrise; at that time the earth or the grass may frequently be seen to move over them; and with a small light spade their retreat may be cut off by striking it into the ground behind them, and they may be immediately dug up.”

If a fresh Mole-hill, says another writer, be found by itself, that appears to have no communication with any other, (which is always the case when the Mole has worked from the surface downwards, as it frequently does in endeavouring to procure a more convenient habitation;) after the hill has been turned up by a spade, a bucket of water should be poured over the mouth of the passage. By these means the animal, which is at no great distance, will be obliged to come forth, and may be easily caught with the hand.—It is easy to discover whether a hill has any communication with another, by applying the ear to it, and then coughing or making a loud noise: if it has no communication, the terrified animal may be heard by its motion. It will then be almost impossible for it to escape; and water may either be poured into the hole, or the earth may be turned up with a spade till the Mole is found; for it does not often go deeper into the earth than from fifteen to eighteen inches.

In the moist beds of a garden the Mole frequently makes a passage at the depth of scarcely an inch below the surface. In this case it is easily caught. When seen at work here, it is only necessary to tread behind the animal

with the foot, on the passage, to prevent its retreat, and then to turn it up with a spade.

"The Mole (continues Dr. Darwin, whose account I resume) suckles four or five, and sometimes six young ones; which are placed considerably deeper in the ground than the common runs; and the mole-hills near them are consequently larger, and generally of a different colour. These nests are to be dug up; having first intercepted the road between them and the mole-hills in the vicinity, to cut off the retreat of the inhabitants.

"The next important circumstance is, to discover which are the frequented streets, and which the by-roads; for the purpose of setting subterraneous traps. This is effected by making a mark on every new mole-hill, by a light pressure of the foot; and the next morning, observing whether a Mole has again passed that way and obliterated the foot-mark. This is to be done for two or three successive mornings. These foot-marks should not be deeply impressed; lest the animal be alarmed on his return, and thus induced to form a new branch of road rather than open the obstructed one.

"The traps are then to be set in the frequented streets, so as to fit nicely the divided canal. They consist of a hollow semi-cylinder of wood; with grooved rings at each end, in which are placed nooses of horsehair, fastened loosely by a peg in the centre, and stretched above ground by a bent stick. When the Mole has passed half-way through one of the nooses, and removes the central peg in his progression, the bent stick rises by its elasticity, and strangles him."

OF URCHINS IN GENERAL*.

Urchins are animals usually of small size. There are seven known species. Of these one is a native of South America, four are found in the East Indies, one in Siberia, and the other, the Common Hedgehog, is a native of Europe. They feed, for the most part, on roots, worms, and the larvæ of insects, which they dig out of the ground by means of their muzzle or snout. None of the species are carnivorous.

THE COMMON HEDGEHOG†.

The usual residence of these animals, which are natives of most of the temperate parts both of Europe and Asia, is in hedge-rows or thickets. During the day-time they lie concealed in their holes, and at night wander about in search of food, which consists chiefly of fallen fruit, roots, and insects. Naturalists have alledged that they enter gardens; where they mount trees, and descend with pears, apples, or plums, stuck upon their bristles. This, however, is a mistake: for, when kept in a garden, they never attempt to climb trees; nor even to stick fallen fruit upon their bristles, but lay hold of their food with the mouth.—

* These animals have two front teeth above and below; of which those in the upper jaw are distant, and those of the lower are placed near together. On each side there are canine teeth; in the upper jaw five, and in the lower three. There are also four grinders on each side, both above and below; and the body is covered on the upper parts with spines. The tail and feet are very short; and the snout is somewhat cartilaginous.

† SYNONYMS. *Erinaceus Europæus*. Linn.—Common Hedgehog. Common Urchin. Penn.—Hérisson. Buffon.—Shaw's Gen. Zool. Pl. 121.—Bew. Quad. 484.

They also are undeservedly reproached with sucking cattle and injuring their udders; for the smallness of their mouths renders this altogether impossible.

Mr. White says, that the manner in which the Hedgehogs ate the roots of the plantain in his grass-walks was very curious. With their upper jaw, which is much longer than the lower, they bored under the plant; and gnawed the root off upwards, leaving the tuft of leaves untouched. In this respect they were serviceable, as they destroyed a very troublesome weed; but they in some measure defaced the walks, by digging in them small round holes.

The Hedgehog has a very uncommon method of defending itself from the attacks of other animals. Being possessed of but little strength or agility, he neither attempts to fly from, nor to assail his enemies; but erects his bristles, and rolls himself up like a ball, exposing no part of his body that is not covered with these sharp weapons. He will not unfold himself unless thrown into water; and the more he is frightened or harassed, the closer he shuts himself up. While in this state, most dogs, instead of biting him, stand off and bark, not daring to seize him; and, if they attempt it once, their mouths are so pricked with his bristles, that it is with difficulty they can be prevailed upon to do it a second time. He is easily taken; for he neither attempts to fly, nor to defend himself by any other means than this.

The Hedgehog may be rendered in a considerable degree domestic; and it has been frequently introduced into houses for the purpose of expelling those troublesome insects, the *Blattæ*, or Cock-roaches, which it pursues and devours with great avidity. In the huts of the Calmuc Tartars these animals are kept instead of cats.—There was a Hedgehog, in the year 1799, in the possession of a Mr. Sample, of the Angel-inn at Felton in Northumberland,

which performed the duty of a turn-spit, as well, in every respect, as the dog of that denomination. It ran about the house as familiarly as any other domestic quadruped, and displayed an obedience till then unknown in this species of animals.

In the winter the Hedgehog wraps itself up in a warm nest of moss, dried grass, and leaves; and sleeps out the rigours of that season. It is frequently found so completely encircled with herbage, that it resembles a ball of dried leaves; but when taken out, and placed before a fire, it soon recovers from its torpidity.—It produces four or five young-ones at a birth; which are soon covered with prickles, like those of the parent animal. The nest formed for the young is large, and is composed principally of moss.

The Hedgehog is occasionally an article of food, and is said to be very delicate eating. The skin was used by the ancients for the purpose of a clothes-brush.

This animal differs very materially from the porcupine, (which at first sight it seems much to resemble,) both in the structure of its teeth, and in the shortness of its spines or quills.

Olires*.

OF THE PORCUPINES IN GENERAL†

To a superficial observer, the animals belonging to this tribe would seem entitled to a place with the Hedgehogs; but they have no further similitude than in the spiny covering of their bodies. None of the species are supposed to be carnivorous.

THE COMMON PORCUPINE‡.

The strong and sharp spines with which the upper parts of the body of the Porcupine are covered, and which measure from nine to fifteen inches in length, are complete

* In this order the animals are furnished with two remarkably large and long front teeth in each jaw; but have no canine teeth. Their feet have claws, and are formed both for bounding and running.

† The Porcupines have two front teeth, cut obliquely, in each jaw; and eight grinders. They have four toes on the fore, and five on the hinder feet; and the body is covered with spines intermixed with hair.

‡ DESCRIPTION. The general length of the Porcupine is about two feet from the head to the extremity of the tail. The upper parts of the body are covered with strong spines, each of which is variegated with black and white rings. The head, belly, and legs are covered with strong dusky bristles, intermixed with softer hairs: on the top of the head, these are very long, and curved backwards, somewhat like a crest.

SYNONYMS. *Hystrix cristata*. Linn.—Crested Porcupine. *Pennant*.—Porc-epic. *Buffon*.—*Shaw's Gen. Zool. Pl.* 122.—*Bew. Quad.* 180.

quills, and want only the vane to constitute real feathers. The animal has the power of elevating or depressing them at will; and when he walks they make a rattling noise by striking against each other.

Whenever these animals are irritated or offended, they stamp forcibly on the ground with their hind feet, somewhat in the manner of rabbits. In this act they shake all their quills, but more particularly those about the tail; and at the same time exert their voice, which is a kind of grunting noise.

It has been asserted by many credulous travellers, that Porcupines, when much provoked, dart their quills at the object by which they are enraged. This opinion, however, has been fully refuted by many accurate naturalists, who have taken pains to enquire into the matter. The usual method of defence adopted by these animals, is to recline themselves on one side; and, on the approach of their enemy, to rise up quickly, and gore him with the erected prickles of the opposite side*. It is also stated, that when the Porcupine meets with serpents, against whom he carries on a perpetual war, he closes himself up like a ball, concealing his head and feet, and then rolls upon and kills them with his bristles, without running any risk of being wounded himself.—M. Le Vaillant says, that, owing to some pernicious quality in the quills, one of his Hottentots, who had received a wound in the leg from a Porcupine, was ill for upwards of six months. He also informs us, that a gentleman at the Cape of Good Hope, in teasing one of these animals, received a wound in the leg, which nearly occasioned his loss of the limb; and not-

* The keeper of the animals in the Tower informed me, that whenever a Porcupine attempts to injure any person who disturbs him in his cage, he turns round and runs backward upon the intruder.

withstanding every possible care, he suffered severely from it for more than four months, during one of which he was confined to his bed.

When the animal is moulting, or casting its quills, it sometimes shakes them off with so much force, that they will fly to the distance of a few yards, and even bend their points against any hard substance they happen to strike.—It may have been this circumstance which gave rise to the report of its darting its quills against an enemy.—Claudian is the most ancient writer who has been cited for this strange opinion. The following is a translation of his lines:

Arm'd at all points, in Nature's guardian mail,
See the stout Porcupine his foes assail;
And urg'd to fight, the ready weapons throw,
Himself at once the quiver, dart, and bow.

The Porcupine is a native of Africa, India, and the Indian Islands; and is said sometimes to be found even in Italy and Sicily. It inhabits subterraneous retreats; which it is believed to form into several compartments; leaving two holes, one for an entrance, and the other, in case of necessity, to retreat by. It sleeps during the day, and makes its excursions for food (which consists principally of fruits, roots, and vegetables) in the night. Although able to support hunger for a great length of time, and apparently without inconvenience, it always eats with a voracious appetite. In the gardens near the Cape of Good Hope, these creatures do much damage. When they have once made a path through a fence, they always enter by the same, so long as it continues open; and this gives the inhabitants an opportunity of destroying them. When a breach is discovered, they place a loaded gun in such a manner that the muzzle will be near the animal's breast, when he is devouring a carrot or turnip that is connected by a string with the trigger.

In its manners the Porcupine is very harmless and inoffensive, never itself becoming the aggressor; and, when pursued, it climbs the first tree it can reach, where it remains till the patience of its adversary is exhausted. If, however, it is roused to self-defence, even the lion dares not venture to attack it.—In confinement, none of these animals appear to have any particular attachment to their keeper. They will eat bread or roots out of his hand, or suffer him to lead them about by a string fastened to their collar. One that was in the Tower of London some years ago would even allow its keeper to take it up under his arm: to do this without wounding himself with its spines, required, however, considerable dexterity, since it was first necessary to close these to the animal's body, by sweeping his arm along the direction in which they grew.

Porcupines usually sleep in the day time, and become awake and active towards the evening. Their teeth are peculiarly sharp and strong; and they gnaw the woodwork of their dens so much, that if there was not much iron about the sides and corners, they would soon escape. M. Bosman, when on the coast of Guinea, put a Porcupine into a strong tub, in order to secure him; but in the course of one night he ate his way through the staves, even in a place where they were considerably bent outwards, and escaped.

The late Sir Ashton Lever had a live Porcupine; which he frequently turned out on the grass behind his house, to play with a tame hunting leopard and a large Newfoundland dog. As soon as they were let loose, the leopard and dog began to pursue the Porcupine, who always at first endeavoured to escape by flight; but, on finding that ineffectual, he would thrust his head into some corner, making a snorting noise, and erecting his spines; with which his pursuers pricked their noses, till they quarrelled between themselves, and thus gave him an opportunity to escape.

The period of gestation in the female is about seven months, at the end of which time she produces one or two young ones at a birth, which she suckles about a month. These she defends with the utmost resolution against all assailants, and will rather be killed than suffer herself to be deprived of them.

In the stomach of the Porcupine, bezoar stones are frequently found. These are composed of a very fine hair, which has concreted with the juices of the stomach: they have one layer over another, so that they consist of several rings of different colours. Professor Thunberg says, he has seen them as large as a hen's egg, and that they are generally blunt at one end; but one that he saw was as big as a goose's egg, of a brown colour, and perfectly globular.

The quills of the Porcupine are used by the Indians to adorn many curious articles of dress and furniture; the neatness and elegance of which would not disgrace more enlightened artists. They dye them of various beautiful colours, cut them into slips, and embroider with them their baskets, belts, &c. in a great variety of ornamental figures. — The flesh is said to be excellent eating, and is frequently introduced at the politest tables at the Cape.

OF THE CAVY TRIBE*.

These animals seem to hold a middle place between the murine quadrupeds and the hares. Nearly all the species, which are *seven* in number, have a slow, and some of them a leaping pace. Their habitations are burrows; which they form beneath the roots of trees, or in the ground.

* The Cavies have, in each jaw, two wedge-shaped front teeth, and eight grinders. They have likewise four or five toes on the fore-feet, and from three to five on the hinder. The tail is either very short, or altogether wanting; and they have no collar bones.

They live entirely on vegetable food, and are all natives of America: two or three of the species, however, are found also on the Old Continent.

THE GUINEA FIG*.

There are few of the foreign quadrupeds more generally known than this. It is a native of Brasil and of some other parts of South America, but is supposed to have been originally imported from Guinea into England. In a state of domestication it feeds on bread or grain, fruit and vegetables; but it has a decided preference for parsley. — This little creature is easily rendered tame, and is very cleanly and harmless. In its disposition it is timid: and it appears totally void of attachment, not only to its benefactors, but even towards its own young; which it will suffer to be taken away, and even devoured, without discovering the least concern, or attempting any resistance.

When kept in a room, it seldom crosses the floor, but generally creeps round by the wall. Its motions are, in a great measure, similar to those of the rabbit: it strokes its head with its fore feet, and sits on its hind legs, like that animal. The male usually compels the female to go before him, and follows exactly in her footsteps. They are fond of dark and intricate retreats, and seldom venture out when danger is near. When about to quit their hiding-places, they spring forward to the entrance, stop to listen, and look round; and if the road is clear, they sally forth in search of food; but on the least alarm they run instantly back again.

* SYNONYMS. *Cavia Cobaya*. Linn. Gmel.—*Mus porcellus*. Linn. Syst. Nat. ed. xii.—*Cochon d'Inde*. Buffon.—*Restless Cavy*. Penn.—*Guinea Pig*. Edwards.—*Shaw's Gen. Zool. Pl.* 126.—*Bew. Quad.* 377.

In their habits they are so exceedingly clean, that if the young ones, by any accident, are dirtied, the female takes such a dislike to them, as never again to suffer them to approach her. They may frequently be observed in the act of smoothing and dressing their fur, somewhat in the manner of a cat. The principal employments of the male and female seem to consist in smoothing each other's hair: after this office has been mutually performed, they turn their attention to the young, whose hair they take particular care to keep unruffled and even; and they bite them whenever they are in the least refractory.

They repose flat on their belly; but, like the dog, turn several times round before they lie down. They sleep with their eyes half open, and are very watchful. It is observed that the male and female seldom sleep at the same time, but seem alternately to watch each other. They are exceedingly delicate, and impatient of cold or moisture. Their usual voice is a kind of grunting, like a young pig; but their notes of pain are shrill and piercing.

Their manner of fighting is very singular, and seems extremely ridiculous. One of them seizes the neck of its antagonist with its teeth, and attempts to tear the hair from it. In the mean time, the other turns his posteriors to his enemy, kicks up behind like a horse, and, by way of retaliation, scratches the sides of his opponent with his hinder claws, in such a manner that both are frequently covered with blood.

The female goes with young about five weeks, and breeds nearly every two months. Though furnished with only two teats, she usually produces three or four, and sometimes so many as twelve young ones, at a birth. And as these have been known to breed when only two months old, the produce of a single pair may amount to upwards of a *thousand* in the year.—In the space of twelve hours after their birth, the young ones are able to run about with as much agility as their parents.

OF THE BEAVER TRIBE*.

Belonging to the present tribe, there are but *two* species that have hitherto been discovered, the Common and the Chili Beavers; and even of these, it seems doubtful whether the latter ought not to be arranged with the Otters.

THE COMMON BEAVER†.

There is good reason to suppose that this animal was once an inhabitant of Great Britain; for Giraldus Cambrensis says, that Beavers frequented the river Tiewi in Cardiganshire, and that they had, from the Welsh, a name signifying "the Broad-tailed animals." Their skins were valued by the Welsh laws, in the tenth century, at the enormous sum of a hundred and twenty pence each; and they seem to have constituted the chief finery and luxury of those days. Beavers are at present natives of

* The Beavers have the front teeth in their upper jaw truncated, and excavated with a transverse angle; and those of the lower jaw are transverse at the tips. There are four grinders on each side. The tail is long, depressed, and scaly; and there are collar bones in the skeleton.

† DESCRIPTION. The general length of the Beaver is about three feet. The tail is oval, nearly a foot long, and compressed horizontally, but rising into a convexity on its upper surface: it is perfectly destitute of hair, except at the base, and is marked out into scaly divisions, like the skin of a fish. The hair is very fine, smooth, glossy, and of a chestnut colour, varying sometimes to black; and instances have occurred in which these animals have been found white, cream-coloured, or spotted. The ears are short, and almost hidden in the fur.

SYNONYMS. *Castor Fiber*. Linn.—*Fiber*. Belon.—*Castor Beaver*. Penn.—*Castor*. Buffon.—*Shaw's Gen. Zool. Pl.* 128.—*Bew.* Quad. 417.

most of the northern parts of Europe and Asia, but are principally found in North America.

No other quadrupeds seem to possess so great a degree of natural sagacity as these. Yet when we consider that their history, as hitherto detailed, has been principally taken from the reports of the Beaver-hunters—whose object it is, not to study the nature or manners of the animals, but merely to seize upon them as articles of commerce, and whose accounts are often in themselves contradictory—it is necessary that we should not give implicit faith to every thing that has been written even by the most respectable authors concerning them, where these authors themselves have not witnessed the facts they relate.—Captain George Cartwright, who resided above fourteen years on the coast of Labrador, in order to collect the different furs of that dreary climate, saw more of the manners of the Beaver, than nearly all other writers put together. To his work, therefore, and to that of M. du Pratz, who in Louisiana was an eye-witness to their labours, I have principally had recourse, in endeavouring to give to the reader as faithful an account as possible of the habits of life and economy of these wonderful animals.

Beavers generally live in associated communities, consisting of as many as two or three hundred individuals; and inhabiting extensive dwellings, which they raise to the height of six or eight feet above the surface of the water. They select, if possible, a large pond; in which they raise their houses on piles, forming them either of a circular or oval shape, with arched tops; thus giving them, on the outside, the appearance of a dome, while within they somewhat resemble an oven. The number of houses is, in general, from ten to thirty. If the animals cannot find a pond to their liking, they fix on some flat piece of ground, with a stream running through it; and in making this a suitable place for their habitations, a degree of sagacity and intelligence, of intention and memory,

is exhibited, approaching, in an extraordinary degree, to the faculties of the human race.

The first object is, to form a dam. To do this, it is necessary that they should stop the stream, and of course that they should know in which direction it runs. This seems a very wonderful exertion of intellect; for they always do it in the most favourable place for their purpose, and never begin at a wrong part. They drive stakes, five or six feet long, into the ground, in different rows, and interweave them with branches of trees; filling them up with clay, stones, and sand; which they ram so firmly down, that though the dams are frequently a hundred feet long, Capt. Cartwright says, he has walked over them with the greatest safety. These are ten or twelve feet thick at the base; gradually diminishing towards the top, which is seldom more than two or three feet across. They are exactly level from end to end; perpendicular towards the stream; and sloped on the outside, where grass soon grows, and renders the earth more united.

The houses are constructed, with the utmost ingenuity, of earth, stones, and sticks, cemented together, and plastered in the inside with surprising neatness. The walls are about two feet thick; and the floors so much higher than the surface of the water, as always to prevent them from being flooded. Some of the houses have only one floor; others have three*. The number of Beavers in each house is from two to thirty. These sleep on the floor, which is strewn with leaves and moss; and each individual is said to have its own place. When they form a new settlement, they begin to build their houses in the summer; and it costs them a whole season to finish the work, and lay in their winter provisions,—consisting principally of bark and

* Du Pratz says, that in one which he examined, he found no fewer than fifteen different cells.

the tender branches of trees, cut into certain lengths, and piled in heaps under the water *.

The houses have each no more than one opening, which is under the water, and always below the thickness of the ice. By this means they are secured from the effects of frost.

The Beavers seldom quit their residence unless they are disturbed, or their provisions fail. When they have continued in the same place three or four years, they frequently erect a new house annually; but sometimes merely repair their old one. It often happens that they build a new house so close to the former dwelling, that they cut a communication from one to the other; and this may have given rise to the idea of their having several apartments.

During the summer time, they quit their houses, and ramble about from place to place, sleeping under the covert of bushes, near the water-side. On the least noise, they betake themselves into the water for security; and they have sentinels, who, by a certain cry, give notice of the approach of danger. In the winter they never stir out, except to their magazines under the water; and during that season they become excessively fat.

In one of his excursions into the northern parts of Louisiana, M. du Pratz gives us an account of a colony of Beavers, to many of whose operations he was himself a witness. This is, in some respects, contradictory to that of Captain Cartwright: I have, therefore, no alternative but to give the sense of the writer, and leave the matter undecided †.

* The Indians observe the quantity that the Beavers lay up; as a guide in judging what will be the mildness or severity of the approaching season.

† Du Pratz was settled sixteen years as a planter in Louisiana, and therefore must have had sufficient means of ascertaining the manners of these animals.

At the head of one of the rivers of Louisiana, in a very retired place, M. du Pratz found a Beaver dam. Not far from it, but hidden from the sight of the animals, he and his companions erected their hut, in order to watch the operations at leisure. They waited till the moon shone bright; and then, carrying in their hands branches of trees in order to conceal themselves, they went with great care and silence to the dam. Du Pratz ordered one of the men to cut, as silently as possible, a gutter, about a foot wide, through it; and retire immediately to the hiding-place.

"As soon as the water through the gutter began to make a noise (says this writer) we heard a Beaver come from one of the huts and plunge in. We saw him get upon the bank, and clearly perceived that he examined it. He then, with all his force, gave four distinct blows with his tail; when immediately the whole colony threw themselves into the water, and arrived upon the dam. As soon as they were assembled, one of them appeared, by muttering, to issue some kind of orders; for they all instantly left the place, and went out on the banks of the pond in different directions. Those nearest to us were between our station and the dam, and therefore we could observe their operations very plainly. Some of them formed a substance resembling a kind of mortar; others carried this on their tails, which served as sledges for the purpose. I observed that they put themselves two and two, and that each of a couple loaded his fellow. They trailed the mortar, which was pretty stiff, quite to the dam, where others were stationed to take it; these put it into the gutter, and rammed it down with blows of their tails.

"The noise of the water soon ceased, and the breach was completely repaired. One of the Beavers then struck two blows with his tail; and instantly they all took to the water without any noise, and disappeared."

M. du Pratz and his companions afterwards retired to their hut to rest, and did not again disturb these industrious animals till the next day. In the morning, however, they went to the dam, to see its construction; for which purpose it was necessary that they should cut part of it down. The depression of the water in consequence of this, together with the noise they made, roused the Beavers again. The animals seemed much agitated; and one of them, in particular, was observed several times to approach the labourers, as if to examine what passed.—As M. du Pratz apprehended that they might run into the woods, if further disturbed, he advised his companions again to conceal themselves.

“One of the Beavers then ventured (continues our observer) to go upon the breach, after having several times approached and returned like a spy. He surveyed the place; and then struck four blows, as he did the preceding evening, with his tail. One of those that were going to work, passed close by me; and as I wanted a specimen to examine, I shot him. The noise of the gun made them all scamper off with greater speed than a hundred blows of the tail of the overseer could have done.”—By firing at them several times afterwards, they were compelled to run with precipitation into the woods. M. Du Pratz then examined their habitations.

Under one of the houses he found fifteen pieces of wood; with the bark in part gnawed off, apparently intended for food. And round the middle of this house, which formed a passage for them to go in and out at, he found no less than fifteen different cells.—These habitations were made by posts fixed, slanting upwards to a point; and in the middle was the floor, resting firmly on notches in the posts.

Beavers bring forth their young-ones towards the end of June; and generally have two at a time, which are, in nine instances out of ten, a male and a female. These con-

time with their parents till they are full three years old ; when they pair off, and form houses for themselves. If, however, they are undisturbed, and have plenty of provisions, they remain with the old ones, and thus form a double society.

Instances have occurred of Beavers having been perfectly domesticated. Major Roderfort, of New York, related to Professor Kalm, that he had a tame Beaver about half a year in his house, which was suffered to run about, quite loose, like a dog. The Major gave him bread ; and sometimes fish, of which he was very greedy. As much water was put into a bowl as he wanted. All the rags and soft things he could lay hold of, he dragged into the corner where he was accustomed to sleep, and made a bed of them. The cat in the house, having kittens, took possession of his bed ; and he did not attempt to prevent her. When the cat went out, the Beaver often took one of the kittens between his paws, and held it to his breast to warm it, and seemed to dote upon it : as soon as the cat returned, he always restored to her the kitten. Sometimes he grumbled ; but never attempted to bite.

In the year 1806, there were in the upper room at Exeter 'Change, London, two male Beavers, which had been there about three years. They were very tame, and would suffer themselves to be handled by the visitors ; but most persons were alarmed, on approaching them, by the animals uttering their small and plaintive cry. This noise they also frequently emitted during their play with each other. At times they were exceedingly gay and frolicsome, wrestling and playing with each other, as far as the limits of their small apartment would admit. They often sat upright to look about them, or sometimes to eat ; and, if any thing moveable was given them to play with, they would drag it about, and seem highly pleased with it. They were in no instance observed to drag any thing about

on their tails, or to make any attempts to do so. In all their manners these animals were extremely cleanly. They were fed with the bark of trees, and on bread; and such was their propensity to gnaw wood, that it was considered by no means safe, notwithstanding the natural gentleness of their disposition, to allow them the full range of a room, for they would soon have eaten their way out, and escaped.

The skin of the Beaver has hair of two kinds: the lower, immediately next to the hide, is short, implicated together, and as fine as down; the upper hair grows more sparingly, and is both thicker and longer. The former is of little value; but the flax or down is wrought into hats, stockings, caps, and other articles of dress.

The Beaver's flax

Gives kindest warmth to weak enervate limbs,
When the pale blood slow rises through the veins.

The skins of Beavers form a considerable article of traffic, both with the northern countries of Europe and with America. Above fifty-four thousand have been sold by the Hudson's Bay Company at one sale: and in the year 1798, a hundred and six thousand skins were collected in Canada, and sent into Europe and China. Those of a black colour are preferred; and such as are taken during winter; especially if they have been worn for some time by the Indians, by which the long hairs fall off, leaving the fine downy fur perfectly free, and better suited to every purpose of manufacture.

The medicinal substance called *castor* is produced in the inguinal glands of these animals; and each individual, both male and female, has usually about two ounces. That produced by the Russian Beavers is more valuable, and sells at a much higher price, than what is imported from America. The flesh is good eating.

It frequently happens that single Beavers live, separate from the general community, in holes, which they make in the banks of rivers, considerably under the surface of the water, working their way upward to the height of many feet. These are called by the hunters *Hermits*, or *Terriers*. Like the rest, they lay up a store of provisions for the winter. It is supposed by Captain Cartwright, that their separation from society originates in attachment and fidelity; that, having by some accident lost their mate, they will not readily pair again. Whatever may be the causes, it has been remarked, that they have invariably a black mark on the skin of their backs; which is called a saddle, and by which they are easily distinguished from the others.

OF THE RAT TRIBE*.

This tribe contains all those animals which go under the denomination of Murine Quadrupeds; and although the term Rat has been adopted, it includes not only the species that we know by the peculiar name of Rats, but also the Mice, and others called Beaver-rats.

These animals, in general, live in holes in the ground; and are very swift, and able to climb trees. Their food is chiefly vegetable; which most of them seek in the night, keeping in their retreats during the day. They feed in a somewhat upright position, carrying the food to their mouth in their fore paws. They are very prolific.

* The front teeth are wedge-shaped. There are generally three grinders on each side, but sometimes only two. All the species have clavicles, or collar-bones, in the skeleton.

THE MUSK RAT*.

In the general form of their body, as well as in many of their habits of life, the Musk Rats have a considerable resemblance to the Beaver. They construct their habitation of dry plants, but particularly of reeds, cement it with clay, and cover it with a dome. At the bottom and sides of this there are several pipes, through which they pass in search of food; for they lay up no provisions for winter. They have also subterraneous passages, into which they retreat whenever their houses are attacked.

Their habitations, which are intended only for the winter, are rebuilt annually. At the approach of this season they begin to construct them, as places of retirement from the inclemencies of the weather. Several families occupy the same dwelling, which is frequently covered many feet deep with snow and ice: the animals, notwithstanding, contrive to creep out, and feed on the roots that are also buried beneath. They feed too on the fresh-water muscles; and, when the season permits it, on fruit. Kalm, in his American Travels, says that apples are used as baits for

* DESCRIPTION. This animal is about the size of a small rabbit.—Its head is thick and short, and somewhat resembles that of the Water-rat. The eyes are large; the ears short, rounded, and covered both inside and outside with hair. Its fur is soft, glossy, and of a reddish-brown colour; and beneath this is a much finer fur, or thick down, which is very useful in the manufacture of hats. The tail is flattened laterally, and covered with scales.

It is a native of nearly all parts of America, from Hudson's Bay as far south as Carolina.

SYNONYMS. *Mus Zibethicus*. *Linn.* *Gmel.*—*Castor Zibethicus*. *Linn. ed. xii.*—*Ondatra*, or Canadian Musk-rat. *Sm. Buff.*—Musk-beaver. *Penn.*—Musquash. *Kerr.*—Musk-rat. *La Hontan.*—*Shaw's Gen. Zool. Pl.* 129.—*Bew. Quad.* 415.

them in traps. In winter, the male and female are seldom seen far from each other.

During the summer they wander about, generally in pairs, feeding voraciously on herbs and roots. They walk and run in an awkward manner, like the Beaver; and cannot swim well, their feet being unfurnished with webs.

The Musk-rats, as well as the Beavers, seem to have their drones or terriers, which are at no trouble in the common operation of building houses. These burrow like Water-rats, in banks adjacent to lakes, rivers, and ditches; and often do much damage, by admitting the water through the embankments of meadows.

They are remarkable for a strong musky smell: whence they have their specific name.—Their nests are formed of sticks, lined on the inside with some soft materials; and the females produce from three to six young-ones at a time. When taken young, they are easily tamed; they are then very playful and inoffensive, and never bite.

The flesh is sometimes eaten; and the fur is used in the manufacture of hats.

THE BROWN RAT*, AND BLACK RAT†.

The Brown and the Black Rat are both of them species much too well known in most countries where they are found. The former, which was first introduced among us from Norway, has greatly diminished the number of the

* SYNONYMS. *Mus decumanus*. Linn.—Le Surmulot. Buffon.—Norway Rat. Brown Rat. Penn.—Bingley's Mem. of Brit. Quad. Pl. 24.

† SYNONYMS. *Mus rattus*. Linn.—Le Rat. Buffon.—Bingley's Mem. of Brit. Quad. Pl. 25.

others; but has itself multiplied so excessively, and is so strong and voracious, as to form no very acceptable substitute.

In Ireland the Brown Rats have very nearly destroyed even the whole race of frogs; which the inhabitants were somewhat anxious to preserve, in order to clear their fields of insects, and render their waters more healthful. While the frogs continued in great numbers, the Rats also multiplied; but since the latter are deprived of this considerable part of their subsistence, they also are become much less numerous.

During summer, the Brown Rats reside chiefly in holes within the banks of rivers, ditches, and ponds; but at the approach of winter they come to the farm-houses, and enter the corn-ricks and barns, where they devour much of the corn, but damage infinitely more than they eat. They have haunts in the walls and about the floors of old houses, where they frequently destroy the furniture; and they have even been known to gnaw the extremities of infants while asleep. They are also excessively destructive to eggs, poultry, pigeons, rabbits, and game of every description. They swim with ease, and even dive in pursuit of fish.

Their produce is enormous; as they bring from ten to twenty young-ones at a litter, and this thrice a-year. Thus, their increase is such, that it is possible for the descendants of a single pair (supposing food to be sufficiently plentiful, and that they had no enemies to lessen their numbers) to amount, at the end of about two years, to upwards of a *million*. But this baneful increase is counteracted, not only by numerous enemies among the other animals, but by their destroying and eating each other. A large and strong Rat is as much dreaded by its own species, as the whole species is dreaded by other creatures that are their prey. Thus has Providence kindly interfered in keeping them within due bounds.

Dogs and cats destroy, but do not eat them. The weasel is in perpetual enmity with them; and will pursue them into their holes, and fight with them there. This little creature endeavours to fix itself on their bodies, and suck their blood; which it very often effects. They are, however, so bold as to attack a small dog, seize him by the mouth, and holding fast there, they make a wound very difficult to be healed on account of its depth and laceration.

In the Isle of France, Rats are found in such prodigious swarms, that it is said the place was entirely abandoned by the Dutch on account of their number. In some of the houses they are so numerous, that 30,000 have been known to be killed in a year. They make immense hoards underground, both of corn and fruit; and climb up trees to devour young birds. They pierce the very thickest rafters. At sun-set they may be seen running about in all directions; and in a single night they will frequently destroy a whole crop of corn. M. de St. Pierre says, he has seen a field of maize, in which they had not left a single ear. They are supposed to have been originally brought to that island in some of the European vessels.

On the return of the Valiant man of war from the Havannah, in the year 1766, its Rats had increased to such a degree, that they destroyed a hundred-weight of biscuit daily. The ship was at length smoked between decks, in order to suffocate them. This had the desired effect; and six hampers were, for some time, filled every day with the Rats that had thus been killed.

In Egypt, as soon as the Nile, after having fertilized the land, leaves it free for cultivation, multitudes of Rats and Mice are seen to issue in succession from the moistened soil. The Egyptians hence believe that they are generated from the earth itself. Some of these people assert, and even

maintain with the utmost effrontery, that they have seen the Rats in their formation, one half of the bodies flesh, and the other half mud.

Rats swarm in Otaheite, where they feed on the fruits of the country; and they are there so bold, as even sometimes to attack the natives when asleep. The inhabitants hold them in abhorrence as unclean; and will even avoid killing them, lest they should be polluted by the touch.

A gentleman travelling through Mecklenburgh about thirty years ago, was witness to a very singular circumstance respecting one of these animals, in the post-house at New Hargard. After dinner, the landlord placed on the floor a large dish of soup, and gave a loud whistle. Immediately there came into the room a mastiff, a fine Angora cat, an old raven, and a remarkably large Rat with a bell about its neck. They all four went to the dish, and, without disturbing each other, fed together; after which the dog, cat, and rat, lay before the fire, while the raven hopped about the room. The landlord, after accounting for the familiarity which existed among these animals, informed his guest that the Rat was the most useful of the four; for the noise he made had completely freed the house from the Rats and Mice with which it was before infested.

THE COMMON OR DOMESTIC MOUSE*.

Although of naturally timid and fearful disposition, this little animal sometimes becomes confident and sociable. Its sight and hearing are extremely acute; and as soon as it observes the least motion, or hears the slightest noise, it listens attentively, sitting erect on its hinder feet; and, if

* SYNONYMS. *Mus musculus*. *Linnaeus*.—*La Souris*. *Buffon*.—*Bingley's Mem. of Brit. Quad. Pl.* 27.

the alarm continues, it runs in haste to its retreat. But if it be gradually encouraged, and nourishment and security are afforded, it will, by degrees, lose these fears. Schreber relates an instance of a Mouse that made its appearance every day at the table of its benefactor, and there waited until it had received its usual portion of food, which it devoured and then ran away.

The Mouse is much more adapted to serve as the companion of mankind, than to be an object of aversion. Its tenderness and timidity ought to incite and receive our compassion. Schreber saw a Mouse fall into convulsions through fear, whilst holden in the hand.

This little creature is now known in nearly all parts of the habitable world. It forms its place of concealment in walls, under the floors, or behind the waiscotting of houses; and in this it sometimes stores a considerable magazine of provisions for future subsistence. Its food is various; and, as it is able to pass through a very small hole, there are few places that are secure from its approach. A trap, in which one of its own species has been putrefied, it almost always avoids, unless impelled by excessive hunger.

The increase of these animals is very rapid. The females produce their young-ones, generally from five to eight in number, at all times of the year. They provide for their offspring with great care, particularly with regard to the softness and warmth of the nest. The young-ones grow so quickly, that, by the expiration of two or three months, they are themselves capable of breeding.

Many methods have been invented for the purpose of destroying Mice. Amongst other things, sponge, fried in fat, has been found a deadly poison to them,

THE LONG-TAILED FIELD-MOUSE*, AND SHORT-TAILED
FIELD-MOUSE†.

These animals are found only in fields and gardens. They live in burrows, a foot or more under-ground, where they lay up great quantities of acorns, nuts, and beech-mast: according to the Comte de Buffon, as much as a bushel of such substance has been sometimes found in a single hole. These habitations are frequently divided into two apartments; the one for living in with their young, and the other for their provisions.

Often the little Mouse
Illudes our hopes; and, safely lodg'd, below
Hath form'd his granaries.

The nests of these diminutive creatures may be discovered by the small heaps of mould thrown up at the entrance of their runs, which lead by winding paths to their magazine.

A very remarkable instance of sagacity in a Long-tailed

* DESCRIPTION. The general length of this Mouse is about four inches and a half; and the tail is nearly four inches more. Its colour is yellowish-brown above, and whitish on the under parts.

SYNONYMS. *Mus sylvaticus*. *Linnaeus*.—Wood Mouse. *Shaw*.—Long-tailed Field Mouse. *Sm. Buff.*—Bean Mouse, in some parts of England.—*Mulot. Buffon*.—Field Mouse. *Penn.*—*Bingley's Mem. of Brit. Quad. Pl. 28.*

† DESCRIPTION. This species is larger than the last, measuring about six inches from the nose to the origin of the tail. The tail is seldom more than an inch and half in length. Its fur, which is very close and compact, is of a dark ferruginous colour.

SYNONYMS. *Mus arvalis*. *Linnaeus*.—Le Campagnol. *Buffon*.—Meadow Mouse. *Pennant. Shaw.*—*Bingley's Mem. of Brit. Quad. Pl. 30.*

Field-Mouse, occurred to the Rev. Mr. White, one day, as his people were pulling off the lining of a hot-bed, in order to add some fresh dung. From out of the side of this bed leaped something with great agility, that made a most grotesque appearance, and was not without much difficulty taken; when it proved to be a large Field-Mouse, with three or four young-ones clinging to her teats by their mouths and feet. It was amazing that the desultory and rapid motions of the dam did not oblige her litter to quit their hold, especially when it appeared that they were so young as to be both naked and blind.

Field-Mice are very prolific; breeding more than once a-year, and often producing litters of eight or ten at a time. They generally make the nest for their young very near the surface of the ground, and often in a thick tuft of grass.

THE HARVEST MOUSE*.

The Rev. Gilbert White seems to have been the first person who ascertained and examined this diminutive and slender species of Mouse. And it hitherto appears to have been found only in Hampshire, and a few of the adjacent counties.

A nest of one of these little animals he procured. It was most artificially platted, and composed of the blades of wheat; perfectly round, and about the size of a cricket-

* DESCRIPTION. The length of the Harvest Mouse is seldom more than two inches and a half; and of the tail, about two inches. The weight is sometimes not more than the sixth part of an ounce. Its general colour is nearly that of the Squirrel or Dormouse. The belly is white.

SYNONYMS. *Mus messorius.* Kerr. Shaw.—Less Long-tailed Field Mouse. Harvest Mouse. Pennant.—*Bingley's Mem. of Brit. Quad. Pl. 29.*

ball; with the aperture so ingeniously closed, that there was no discovering to what part it belonged. It was so compact and well filled, that it would roll across the table without being discomposed, though it contained eight young Mice that were naked and blind. As this nest was perfectly full, how could the dam come at her litter respectively, so as to administer a teat to each? Perhaps she opens the different places for that purpose, adjusting them again when the business is over; but she could not possibly be contained herself in the ball with her young, which moreover would be daily increasing in bulk. This wonderful procreant cradle, an elegant specimen of the efforts of instinct, was found in a wheat-field, suspended in the head of a thistle.

Mr. White remarked, that though the Harvest Mice hang their nests above the ground, yet in winter they burrow deep in the earth, and make warm beds of grass; but their grand rendezvous seems to be in corn-ricks, into which they are carried at harvest.—This gentleman measured some of them; and found that from nose to tail they were two inches and a quarter, and their tails were two inches long. *Two* of them in a scale weighed down just one copper halfpenny, about the third of an ounce avoirdupois! whence he supposes them to be the smallest quadrupeds in the island. A full-grown domestic Mouse would weigh at least six times as much as one of these.

THE LEMMING RAT*.

These animals feed entirely on vegetables. In summer they form shallow burrows under the surface of the ground, and in winter they make long passages under the snow in

* DESCRIPTION. The Lemming Rats vary much both in size and colour, those of Norway being almost equal to Water Rats, while

search of food; for, as they lay up no winter store, they are reduced to the necessity of hunting for it during all the rigours of the cold season.

They seem to be endowed with a power of distinguishing the approach of severe weather; for before the setting in of a cold winter, they leave their haunts in the above countries, and emigrate in immense multitudes southwards towards Sweden, always endeavouring to keep a direct line. These emigrations take place at uncertain intervals, though generally about once every ten years; and, exposed as the travellers are to attack, they of course become the food of all the predacious animals. Multitudes also are destroyed in endeavouring to swim over the rivers or lakes. From these different causes, very few of them live to return to their native mountains; and thus a check is put to their ravages, as an interval of several years is necessary to repair their numbers sufficiently for another invasion. They are bold and fierce, and will even attack men and animals if they meet them in their course; and they bite so hard, as to allow themselves to be carried to a considerable distance hanging by their teeth, before they will quit their hold.

If they are disturbed or pursued while swimming over a lake, and their phalanx is separated by oars or poles, they will not recede; but keep swimming directly on, and soon get into regular order again. They have sometimes been

those of Lapland are scarcely as large as Mice. The former are elegantly variegated with black and tawny in the upper parts, having the sides of the head and the under parts white. The legs and tail are grayish; and the under parts of the body a dull white. The head of the Lemming is large, short, and thick. The body is also thick; the neck short, and the limbs stout and strong. The tail is very short.

SYNONYMS. *Mus Lemmus*. *Linnaeus*.—*Lemmus Rat*. *Lapland Marmot*. *Pennant*.—*Leming*. *Buffon*.—*Lemming*. *Pontoppidan*.—*Shaw's Gen. Zool. Pl.* 135.—*Bew. Quad.* 409.

known even to endeavour to board or pass over a vessel. This army of Rats moves chiefly by night, or early in the morning; and makes such destruction among the herbage, that the surface of the ground over which they have passed, appears as if it had been burned. Their numbers have at times induced the common people of Norway to believe that they had descended from the clouds; and the multitudes that are sometimes found dead on the banks of rivers or other places, corrupt by their stench the whole atmosphere around, and thus produce many diseases. They are even thought to infect the plants which they gnaw; for cattle turned into pastures where they have been, are said frequently to die in consequence.

They never enter dwellings, of any description, to do mischief; but always keep in the open air. When enraged, they raise themselves on their hind feet, and bark like little dogs. Sometimes they divide into two parties, attack each other, and fight like hostile armies. From these battles, the superstitions of the inhabitants of Lapland pretend to foretel not only wars, but also their success, according to the quarters the animals come from, and the side that is defeated. The Lemming Rats are natives chiefly of the mountainous parts of Lapland, Sweden, and Norway.

The females breed several times in the year, and produce five or six young ones. It has been observed, that they have sometimes brought forth during their migrations; and they have been seen carrying some of their young ones in their mouths, and others on their backs.

THE ECONOMIC RAT*.

The migrations of the Economic Rats, are not less extraordinary than those of the Lemmings. In the spring

* DESCRIPTION. The length of the Economic Rat is about four inches; and that of its tail, one inch. The limbs are strong; the

of the year they collect together in amazing numbers, and proceed in a course directly westward; swimming with the utmost intrepidity over rivers, lakes, and even arms of the sea. Many of them are drowned, and many destroyed by water-fowl or rapacious fish. Those that escape, on emerging from the water, rest awhile to bask, dry their fur, and refresh themselves. The Kamtschadales, who have a kind of superstitious veneration for these little creatures, whenever they find any of them thrown upon the banks of the rivers, weak and exhausted, render them every possible assistance. As soon, says Dr. Grieve, as they have crossed the river Penschinska, at the head of the gulph of the same name, they turn in a south-westerly direction; and, about the middle of July, generally reach the rivers Ochotska and Judoma—a distance of about a thousand miles! The flocks are also so numerous, that travellers have sometimes waited above two hours for them to pass. The retirement of these animals is very alarming to the Kamtschadales; but their return, which is generally in October, occasions the utmost joy and festivity, a successful chase and fishery being always considered as its certain consequence.

The Kamtschadales never destroy the hoards of these Rats. They sometimes take away part of their store; but, in return for this, they invariably leave either some caviare, or other food, to support them in its stead.

The Economic Rats construct burrows, with the utmost skill, immediately below the surface of a soft turfy soil.

ears short, naked, and almost hidden beneath the fur of the head. The general colour of the fur is tawny, somewhat whiter beneath than on the back.

These animals are natives of Siberia and Kamtschatka.

SYNONYMS. *Mus economicus*. Linn.—Economic Mouse. Penn. Tegoulitchek. Grieve.—Shaw's Gen. Zool. Pl. 134.

They form a low chamber of a flattish arched form, about a foot in diameter, to which they sometimes add as many as thirty small passages or entrances. Near the chamber they often construct other caverns, in which they lodge their winter stores. These consist of plants; which they gather in summer, harvest and bring home; and even, at times, they bring them out of their cells to give them a more thorough drying in the sun. The chief labour is performed by the females.—They associate in pairs; and except during the summer time, (when the male leads a solitary life in the woods,) the male and female are generally both to be found in the same nest.

THE HAMSTER RAT*.

These, the only species of Rats with pouches in their cheeks, that are found in Europe, are natives of Austria, Silesia, and many parts of Germany. They live under the surface of the ground, burrowing obliquely downwards. At the end of their passage, the male sinks one perpendicular hole; and the female several, sometimes seven or eight. At the extremity of these are formed various vaults; either as lodges for themselves and young,

* DESCRIPTION. The Hamster is about the size of the Brown or Norway Rat; but much thicker, and its tail only about three inches long. Its colour is reddish brown above, and black beneath; but on each side of the body there are three large, oval, white spots. The ears are rather large. On each side of the mouth there are two receptacles for food; which, when empty, are so far contracted, as not to appear externally; but when filled they resemble a pair of tumid bladders; with a smooth veiny surface which is concealed by the fur of the cheeks.

SYNONYMS. *Mus Cricetus*. Linn.—German Marmot. Hamster Rat. Penn.—German Hamster. Kerr.—Hamster. Buffon.—Shaw's *Gen. Zool.* Pl. 137.—Bew, *Quadr.* 404.

or as store-houses for their food. Each young one has its separate apartment; and each sort of grain its appropriate vault: the former are lined with straw or grass. The vaults are of different depths, according to the age of the animals. A young Hamster makes them scarcely a foot deep; an old one sinks them to the depth of four or five feet. The whole diameter of the habitation, with all its communications, is sometimes eight or ten feet.

The Hamsters feed on grain, herbs, and roots; and, at times, even eat flesh. Their pace is extremely slow; but in burrowing into the ground they exhibit great agility. In order to facilitate the transportation of food to their magazines, Nature has furnished them with pouches in their cheeks. These are each of sufficient capacity to hold about two ounces of grain; which the animal empties into its store house, by pressing its two fore feet against its cheeks. When its cheeks are full, a Hamster may easily be caught with the hand, without the risk of being bitten; as it has not, in this condition, the free motion of its jaws. If, however, a short time is allowed, it soon empties its pouch, and stands on the defensive.

On dissecting one of these animals, Dr. Russel found the pouch, on each side of its mouth, stuffed with young French beans, arranged lengthways, so exactly and close to each other, that it appeared strange by what mechanism this had been effected; for the membrane which forms the pouch, though muscular, is extremely thin, and the most expert fingers could not have packed the beans in more regular order. When they were laid loosely on the table, they formed a heap three times the bulk of the animal's body.

What these creatures lay up, is not for their winter's support, (since during that season they always sleep,) but for their nourishment, previously to the commencement, and after the conclusion, of their torpid state. The quan-

tity in the burrows depends upon the size and sex of the inhabitants; the old ones frequently amassing upwards of a hundred-weight of grain, but the young and the females providing a quantity much smaller.

At the commencement of the cold season, the Hamsters retire into their hiding-places, the entrances to which they close up. Here they repose for some months; and they are often dug up by the peasantry, who at this season of the year employ much of their time in hunting for their retreats. These are easily known by the small mounds of earth raised at the end of the galleries.

When the Hamster is found in a torpid state, his head is bent under his belly, between the two fore legs; and the hind legs rest upon his muzzle. The eyes are closed; and when the eye-lids are forced open, they instantly shut again. The members are all stiff, and the body feels as cold almost as ice. It has been satisfactorily ascertained, that this animal, in order to become torpid, must be excluded from all communication with the external air. If a Hamster be put into a cage filled with earth and straw, and exposed to a degree of cold sufficient to freeze water, he will continue awake and active; but if the cage be sunk four or five feet under the surface of the ground, he will soon be as torpid as if in his own burrow.

The life of a Hamster is divided between eating and fighting. He seems to have no other passion than that of rage; which induces him to attack every animal that comes in his way, without in the least attending to the superior strength of the enemy. Ignorant of the art of saving himself by flight, rather than yield he will allow himself to be beaten to pieces with a stick. If he seizes a man's hand, he must be killed before he will quit his hold. The magnitude of the horse terrifies him as little as the address of the dog, which last is fond of hunting him. When the Hamster perceives a dog at a dis-

tance, he begins by emptying his cheek-pouches, if they happen to be filled with grain: he then blows them up so prodigiously, that the size of the head and neck greatly exceeds that of the rest of the body. He raises himself on his hind legs, and thus darts upon the enemy. If he catches hold, he never quits it but with the loss of his life. But the dog generally seizes him from behind, and strangles him. This ferocious disposition prevents the Hamster from being at peace with any animal whatever. He even makes war against his own species, not excepting the females. When two Hamsters meet, they never fail to attack each other, and the stronger always devours the weaker. A combat between a male and female commonly lasts longer than that between two males. They begin by pursuing and biting each other; then each of them retires aside, as if to take breath. After a short interval they renew the combat, and continue to fight till one of them falls. The vanquished uniformly serves for a repast to the conqueror.

The females bring forth twice or thrice in the year; each litter consisting of six or eight young ones; and their increase in some years is excessively rapid. In about three weeks after their birth, the young are able to seek their own provisions, which the dam compels them to do; and in fifteen or sixteen days they begin to dig the earth.

In some seasons, the Hamsters are so numerous that they occasion a dearth of corn. In one year, about 11,000 skins, in a second 54,000, and in a third year 80,000, were brought to the Town-house of Gotha, as vouchers of claims to the rewards allowed for the destruction of the animals.

OF THE MARMOT TRIBE*.

This tribe does not differ, in many particulars, from that of the Rats. The animals have thick cylindrical bodies, and large roundish heads. The fore feet have each four claws, and a very small thumb; and the hind feet five claws. They reside in subterraneous holes, and pass the winter in sleep. Only eight species have as yet been discovered.

THE ALPINE MARMOT*.

Being natives chiefly of the highest summits of the Alps and the Pyrenean Mountains, these singular quadrupeds delight in the regions of frost and snow, and are seldom found on the plains, or in the champain country. Their holes are constructed with much art; each of them forming a kind of gallery in the form of the letter Y, with an aperture at each upper extremity, and terminating below in a capacious apartment, where several of the animals lodge together. This apartment is well lined with moss and hay, of which they lay up a great store during the summer.

* The Marmots have two wedge-shaped front teeth in each jaw; and five grinders on each side in the upper, and four in the lower jaw. They have collar bones in the skeleton.

† DESCRIPTION. This animal is about sixteen inches in length, has a short tail, and bears some resemblance both to the rat and the bear. The colour is brownish above, and bright tawny on the under parts. The head is rather large, and flattish; the ears short, and hid in the fur; and the tail thick and bushy.

SYNONYMS. *Arctomys Marmota*. Linn. Gmel.—*Mus Marmota*. Linn. Syst. Nat. ed. xii.—Common Marmot. Kerr.—Marmotte. Buffon.—Alpine Marmot. Penn.—Shaw's Gen. Zool. Pl. 143.—Bew. Quad. 399.

It is affirmed that the labour of collecting the materials for their nest, is carried on by the animals in concert; that some of them cut the finest herbage, which is collected by others; and that they transport it to their dens in the following manner: One, it is said, lies down on his back, allows himself to be loaded with hay, and extends his limbs; and others trail him, thus loaded, by the tail, taking care not to overset him. The task of thus serving as a vehicle, is divided alternately among the number. "I have often (says M. Beauplau) seen them practise this, and have had the curiosity to watch them at it for days together." The repeated frictions arising from sustaining a passive part in the operation, are assigned as the reason why the hair is generally rubbed off from their backs. But it is more probable that this effect is produced by their frequent digging of the earth, which alone is sufficient to peel off the hair. However this may be, it is certain that they dwell together, and work in common in their habitations, where they pass three-fourths of their lives. Thither they retire during rain, or on the approach of danger; and never go out but in fine weather, and even then to no great distance.

One of them stands sentinel upon a rock, while the others gambol about upon the grass, or are employed in cutting it in order to make hay. If the sentinel perceives a man, an eagle, a dog, or other dangerous animal, he instantly alarms his companions by a loud whistle, and is himself the last that enters the hole*.

The old Marmots, at break of day, come out of their

* Beauplau's Description of Ukraine.—This writer seems either to have mistaken the Marmot for the next following species, or to have confounded the two. The animals he describes, he calls Bobaques.

holes to feed; afterwards they bring out their young ones. The latter scamper on all sides; chase each other; sit on their hind feet; and remain in that posture, facing towards the sun, with an air expressive of satisfaction. They are all particularly fond of warmth; and, when they think themselves secure, will bask in the sun for several hours successively.

The Marmot has a quick eye, and discovers an enemy at a considerable distance. He never does the least injury to any other animal, and attempts to escape when attacked. In fact, when apprehensive of being followed, whole families of them quit their dwellings, and wander from mountain to mountain, although they have in consequence new habitations to construct. But, if flight is impossible, they defend themselves with spirit against even men and dogs, and assail, both with their teeth and claws, all those who approach them.

In countries where the rhubarb* grows, it is said that the Marmots generally fix their residence near those plants; and that, if ten or twenty of the plants are adjacent to each other, there are always several of their burrows immediately under the shade and protection of the leaves.

About the end of September, or the beginning of October, the Marmots retire to their holes, in which they become torpid, and from which they do not again come abroad until the beginning of April. When they feel the first approach of the sleeping season, they shut up both of the passages to their residence; and they perform this operation with such labour and solidity, that it is more difficult to dig the earth in the parts they have thus fortified, than in any adjacent spot. At this time they are very fat, weighing sometimes twenty pounds each; and they

* *Rheum palmatum* of Linnæus.

continue so for three months; but afterwards gradually decline, and by the end of winter become extremely emaciated. When found in their winter retreats, they appear rolled up like a ball, and are covered with hay.

If caught when young, the Marmot may be easily domesticated. It will walk on its hind feet, sit upright, and carry food to its mouth with its fore feet. It will dance with a stick between its paws, and perform various tricks to please its master.—This animal has a singular antipathy to dogs, and will maintain an attack from even the most formidable of them. Though small, it is extremely stout, and, in addition to this, peculiarly dexterous; and notwithstanding it is able to bite most cruelly, it attacks no one unless previously irritated.

In the winter season these animals are sought after with great eagerness by the inhabitants of the countries where they are found; and are killed in immense numbers, both on account of their flesh, and for their skins.

THE BOBAC *.

The burrows which the Bobacs form in the ground, are constructed obliquely, and are of the depth of two, three, or four yards. They comprise a number of galleries which have one common entrance from the surface, each gallery terminating in a nest for some of its inhabitants. Some-

* DESCRIPTION. The Bobac is about the size of the Alpine Marmot. Its colour is gray above, and beneath fulvous or ferruginous. The tail is short, somewhat slender, and very hairy.

It is a native of the mountainous parts of Poland, Russia, and some other countries of Europe.

SYNONYMS. *Arctomys Bobac*. Linn. Gmel.—Boback. Buffon.—Shaw's Gen. Zool. Pl. 144.

times, however, the burrows consist of but one passage. Though these burrows are found in the greatest numbers where the earth is lightest, yet they are very common even in the strata of the mountains. In hard and rocky places, from twenty to forty of the animals join together to facilitate the work; and they live in society, each with its nest at the end of its respective gallery.—Into their nests they collect (especially towards autumn) the finest hay they can procure; and in such plenty, that sufficient is often found in one of them for a night's food for a horse.

During the middle or sunny part of the day, they sport about the entrance of their holes; but seldom go far from them. At the sight of man, they retire with a slow pace; and sit upright near the entrance, giving a frequent whistle, and listening to the approach. In places where they live in large families, they always place a sentinel to give notice of any danger, during the time when the rest are employed in feeding.

They are mild, good-natured, and timid. They feed only on vegetables; which they go in search of in the morning, and about the middle of the day. They sit on their hams when they eat, and carry the food to their mouth with their fore paws; and in this posture it is that they defend themselves when attacked. When they are irritated, or when any one attempts to lay hold of them, they bite desperately, and utter a shrill cry.—In the summer time they eat voraciously; but remain torpid all winter, except when kept in very warm places;—and even then they eat but little, and will, if possible, escape into some comfortable place, in which to pass this dreary season; but they return to their master in the spring. They soon become tame, even when taken of full age; and the young ones are familiar from the moment they are caught.

The flesh is eatable; and, except that it is somewhat

rank, resembles that of the hare. The fat is used in the dressing of leather and furs; and the skins are employed by the Russians for clothing.—The female brings forth early in the spring, and usually produces six or eight young ones at a litter.

OF THE SQUIRRELS IN GENERAL*

The Squirrels are for the most part light, nimble, and elegant animals, climbing trees with the utmost agility, and springing, with astonishing security, from one branch to another. Some of them are provided with hairy membranes, extending from the fore to the hind legs; which, when spread out, by rendering them more buoyant, enable them to leap through considerable distances from tree to tree. Some of the species form their nests, and live almost entirely, in the trees; and others burrow under the ground. None of them are carnivorous. Many of the Squirrels may, with care, be rendered docile; but when they are in the least irritated, they attempt to bite. In confinement they are generally very frolicsome. When they are on the ground, they advance by leaps; and in eating they sit erect, and hold the food in their fore paws.

THE COMMON SQUIRREL†.

This elegant little animal is equally admired for the neatness of its figure, and the activity and liveliness of its

* They have two front teeth in each jaw; the upper ones wedge-shaped, and the lower sharp: five grinders on each side of the upper jaw, and four on each side of the under one. They have also collar-bones in the skeleton; and in most of the species, the tail spreads towards each side.

† SYNONYMS. *Sciurus vulgaris*. *Linnaeus*.—*L'Ecureuil*. *Buffon*.—*Bingley's Mem. of Brit. Quad. Pl.* 31.

disposition. Though naturally wild and timid, it is soon reconciled to confinement, and easily taught to receive with freedom the most familiar caresses from the hand that feeds it.

In the spring season these creatures seem peculiarly active; pursuing each other among the trees, and exerting various efforts of agility. During the warm summer nights they may also be observed in a similar exercise. They seem to dread the heat of the sun; for during the daytime, they commonly remain in their nests, and make their principal excursions by night.

The nest of the Squirrel is, in its construction, exceedingly curious. It is generally formed among the large branches of a great tree, where they begin to fork off into small ones. After choosing the place where the timber begins to decay, and where a hollow may the more easily be formed, the Squirrel begins by making a kind of level between these forks; and then bringing moss, twigs, and dry leaves, it binds them together with such art as to resist the most violent storm. This is covered up on all sides; and has but a single opening at the top, just large enough to admit the little animal; and this opening is itself defended from the weather by a kind of canopy, formed like a cone, so as to throw off the rain, however heavy it may fall. The nest thus formed, is very commodious and roomy below; soft, well knit together, and every way convenient and warm. The provision of nuts and acorns is seldom found in its nest; but in the hollows of the tree, carefully laid up together, and where it is never touched by the animals but in cases of necessity, when no food is to be had abroad. Thus a tree serves both for a retreat and a storehouse; and without leaving it during the winter, the Squirrel possesses all those enjoyments that his nature is capable of receiving.

This little animal is extremely watchful: and it is said,

that if the tree in which it resides is but touched at the bottom, it takes the alarm, quits its nest, at once flies off to another tree, and thus travels with great ease along the whole forest, until it finds itself perfectly out of danger. In this manner it continues for some hours at a distance from home, until the alarm is past; and then it returns by paths that, to nearly all quadrupeds but itself, are utterly impassable. Its usual way of moving is by bounds; these it takes from one tree to another at a very great distance; and if it is at any time obliged to descend, runs up the side of the next tree with astonishing facility.

It seldom makes any noise, except when it experiences either pain or pleasure: in the former case it emits a sharp piercing note; and in the latter it makes a noise not unlike the purring of a cat.—The tail of the Squirrel is its greatest ornament; and serves as a defence against the cold, being large enough to cover the whole body; it is likewise of use to the animal in taking its leaps from one tree to another.

In northern climates the Squirrels change their red summer coat, on the approach of winter, to grey; and it is singular that this alteration will take place in those climates, even within the warmth of a stove. Dr. Pallas had one, entirely red, brought to him on the 12th of September. It was placed in a stove. About the 4th of October many parts of its body began to grow hoary: and when it died, which was just a month afterwards, the whole body had attained a grey colour; the legs, and a small part of the face, alone retaining a reddish tinge.

THE GREY SQUIRREL*.

Both in their form and habits of life, these animals very much resemble the Common Squirrels. They are found

* DESCRIPTION. This animal is about the size of a young rabbit; and, except on the inside of the limbs and the under

not only in the northern parts of the continent of Europe, but also in several districts of America. They occasionally migrate to immense distances, so that sometimes there is not one of them to be seen, during a whole winter, in places where there were millions in the preceding year. In their journeys from one part of the country to another, when it becomes necessary to pass a lake or river, it is stated that they lay hold of a piece of pine or birch bark, which they draw to the edge of the water, and mounting upon it, abandon themselves to the waves. They erect their tails, to catch the wind; but, if it blows too strong, or the waves rise high, the pilot and the vessel are both overturned. This kind of wreck, which often consists of three or four thousand sail, generally enriches some Laplanders, who find the dead bodies on the shore; and, if these have not lain too long on the sand, they prepare the furs for sale. But when the winds are favourable, the adventurers make a happy voyage, and arrive in safety at their destined port*.

In North America these animals sometimes commit great havoc in the plantations, but particularly among the maize; for they climb up the stalks, tear the ears in pieces, and eat only the loose and sweet kernel which lies quite in the inside. They sometimes come by hundreds upon a maize-field, and thus destroy the whole crop of a farmer in one night. In Maryland, therefore, some years ago, every person was compelled to procure and exhibit annually four Squirrels; the heads of which, to prevent deceit, were

parts of the body, which are white, its colour is an elegant pale grey.

SYNONYMS. *Sciurus cinereus*. Linn.—Petit Gris. Buffon.—Gray Squirrel. Catesby. Penn.—Shaw's Gen. Zool. Pl. 147.—Bew. Quad. p. 387.

* Scheffer, 338, who quotes Olaus Petri as a witness to one of these migrations.

given to the surveyor. In other provinces, every one who killed a Squirrel received from the public treasury two-pence on delivering up its head. Pennsylvania alone paid, from January 1749 to January 1750, no less a sum than *eight thousand pounds*, currency, in rewards for the destruction of these animals; consequently, in that year, as many as 640,000 must have been killed.

The Grey Squirrels reside principally among the trees, in the hollows of which they form their nests, of moss and straw, and line them with softer materials. They feed on acorns, and all the various kinds of nuts with which the woods abound; and of these they collect great stores for their winter subsistence, carefully laying them up in holes which they dig for the purpose, beneath the roots of trees, or in other secure places.

When these animals are sitting on a bough, and perceive a man approach, they instantly move their tails backward and forward, and make a chattering noise with their teeth. This renders them peculiarly odious to sportsmen, who often lose their game by the alarm which they thus create. It is a difficult matter to kill them with guns, since they change their places on the trees with such extreme agility, as generally to elude the shot of even the most expert marksman. —If caught young they are easily tamed; and in this state will readily associate with other domestic animals.

The skins of the Grey Squirrels are used in America for ladies' shoes; and are often imported into England as furs.

THE STRIPED OR GROUND SQUIRREL*.

The Striped Squirrels subsist upon corn and nuts of every description; and, like the common species, collect

* DESCRIPTION. The length of the Striped Squirrel is about six inches; its tail, which is rather more, is not curved and bushy, but

great quantities of provisions in autumn, for their subsistence during the winter, and store them in their holes.

They are natives of America, and dig burrows in the ground, which serve for their habitations, and to which they fly for shelter whenever danger is near. These burrows are deep; and commonly divided into many branches, from one of which they have an opening to the surface of the ground. The advantage they derive from this is, that when they ramble abroad for food, and are prevented from entering the hole at which they went out, they may not expose themselves to their pursuers, but immediately retreat into the other. But in autumn, when the leaves are falling from the trees, it is very diverting to observe their consternation when pursued:—for their holes being covered with leaves, they have then some difficulty in finding them: they run backward and forward, as though they had lost their way; and seem to know where their subterraneous haunts lie, but cannot discover the entrances. If they are pursued, and any sudden or loud noise is made, they are constrained to take refuge in the trees; but this they never do unless in cases of necessity.

Their subterraneous dwellings are formed with much art; being worked into long galleries, with branches on each side, and each terminating in an enlarged apartment, in which they hoard their stock of winter provision. Their acorns are lodged in one; in a second, the maize; in a third, the hickery-nuts; and in a fourth, perhaps their most favourite food, the chesnut. Nature has given them

long and very narrow. The skin is of a reddish brown; and is marked with five black streaks, one of which runs along the back, and two on each side.

SYNONYMS. *Sciurus striatus*. Linn.—Striped Dormouse. Penn.—Ground Squirrel. Kerr.—*Ecureuil suisse*. Buffon.—Suisse Squirrel. La Hontan.—Shaw's Gen. Zool. Pl. 148.—Bew. Quad. 389.

a fine convenience for collecting their provisions, in their cheek-pouches, which they fill with different articles of food, that are to be conveyed to their magazines. In Siberia they hoard up the kernels of the stone-pine in such quantities, that ten or fifteen pounds weight of these have been taken out of a single magazine.

As a Swede was, some time ago, making a mill-dike, late in autumn, he took for that purpose the soil of a neighbouring hill, and met by chance with a subterraneous walk belonging to these Squirrels. By tracing it to some distance, he discovered a gallery on one side, like a branch parting from the main stem. It was nearly two feet long; and, at its extremity, there was a quantity of remarkably plump acorns of the white oak, which the careful little animal had stored up against the winter. He soon afterwards found another gallery, on one side, like the former, but containing a store of maize; a third had hickery-nuts; and the last and most secret one contained as many excellent chesnuts as would have filled two hats.

In winter, these Squirrels are seldom seen; as, during that season, they keep within their holes. On a fine, clear day, however, they sometimes come out.—They frequently dig through into cellars, where the country-people lay up their apples; these they often eat, or spoil in such a manner that few or none of any value are left.—In the choice of their food, they are remarkably nice; having been observed, after filling their pouches with rye, to fling it out on meeting with wheat, and to substitute for it the superior grain.

They are not to be tamed without great difficulty; and even then it is always dangerous to handle them, as they will bite very keenly when a person is not aware of them.

They are killed merely on account of their skins; which, though forming but a slight and ordinary fur, have a very pleasing appearance when properly set off. These are said to be chiefly sold to the Chinese.

THE AMERICAN FLYING SQUIRREL*, AND EUROPEAN
FLYING SQUIRREL†.

By means of the lateral membranes with which the bodies of these Squirrels are furnished, they are able to make astonishing leaps of ten or twelve yards, and upwards, from tree to tree. In these efforts, they extend their hind legs, and stretch out the intervening skin, by which they present a greater surface to the air, and become more buoyant. They are, however, under the necessity of taking advantage of the lower branches of the trees to which they leap; for their weight prevents them from keeping in a straight line. Sensible of this, they always take care to mount so high as to ensure them from falling to the ground. This extended skin acts upon the air somewhat in the manner of a paper kite, and not by repeated strokes

* DESCRIPTION. This animal, which is a native of most parts of North America, has large black eyes, circular naked ears, and a hairy membrane extending nearly round the body. The tail, which tapers to a point, has its hairs disposed flatways on its sides. The upper parts of the body are of a cinereous brown: the belly is white, tinged with yellow. The membrane passes the fore and hind legs, to the tail: on the fore legs it adheres as far as the toes, and includes a peculiar bone which is attached to the wrist, and helps to stretch out this skin in flying; and on the hind leg it extends to the ancles.

SYNONYMS. *Sciurus volucella*. Linn.—Flying Squirrel. *Catesby*.—Quimichpatlan. *Fernand*.—Polatouche. *Buffon*.—American Flying Squirrel. *Shaw*.

† DESCRIPTION. The European Flying Squirrel differs from the American species principally in having its tail full of hair, and rounded at the end, and in the colour of its body: the upper part of which is a fine gray, and the lower white. Its whole length is about nine inches, of which the tail occupies five.

SYNONYMS. *Sciurus volans*. *Linnaeus*.—Flying Squirrel. *Penn*.—Polatouche. *Buffon*.—*Shaw's Gen. Zool. Pl.* 149.—*Bew. Quad.* 394.

like the wings of a bird. The animal, being naturally heavier than the air, must of course descend; the distance, therefore, to which it can jump, depends on the height of the tree on which it stands. When it is at rest, the skin is wrinkled up against its sides.

These animals are generally seen in flocks of ten or twelve together; and to persons unaccustomed to them, they appear at a distance, in their leaps, like leaves blown from the trees by the wind. "When I first saw them (says Catesby,) I took them for dead leaves blown one way by the wind; but was not long so deceived, when I perceived many of them follow one another in the same direction."

They inhabit hollow trees: where they sleep during the day, and from whence they only make their appearance in the night, at which latter time they are very lively and active. They associate in flocks; several living in the same tree, which they never willingly quit to run upon the ground, but almost constantly reside among the branches.

The females produce three or four young-ones at a litter. This species use the same food, and form their hoards in the same manner, as others of the Squirrel tribe. They are easily tamed, and soon become familiar: they love warmth, and are very fond of creeping into the sleeve or pocket of their owner; and if thrown upon the ground, they instantly show their dislike to it, by running up and sheltering themselves in his clothes. J. Stackhouse, Esq. of Pendarvis, informs me, that a mercer with whom he was acquainted had one of these animals, which was quite tame. He accidentally lost it at the approach of winter. Some months afterwards, on showing some blanketing to a customer, he was surprised to observe in it a small hole: this he pursued, and found it extend to the centre of the roll, through all the folds; and at the bottom of it lay the little animal in a perfectly torpid state.

The European Flying Squirrel is found in the woods of

Lapland and Norway, where it feeds principally on the tender branches of the beech and pine trees. In its habits of life it differs very little from the preceding species. It always sleeps during the day-time, and seldom appears abroad in bad weather. It is active through the whole winter; being frequently caught during that season, in the traps that are laid for the Gray Squirrels.

The females, when they have young-ones, never leave their nest in pursuit of food, without previously wrapping these carefully up in the moss. They pay to them the utmost attention; brooding anxiously over them, and tenderly sheltering their bodies, by their flying membrane, from the cold.

OF DORMICE IN GENERAL*.

All the species of Dormice live in holes in the ground, where they continue in a state of torpor during the winter. Their pace is a kind of leap, in which, like the jerboas, they are assisted by the tail. They feed entirely on vegetables, and eat only in the night. In this act they sit upright, and carry the food to their mouth with the paws. When they are thirsty, they do not lap, (like most other quadrupeds,) but dip their fore-feet, with the toes bent, into the water, and drink from them.

THE COMMON DORMOUSE†.

The nest of the Dormouse is usually formed in the hollow of some low tree, or near the bottom of close shrubs, of

* These animals have two front teeth in each jaw; the upper ones wedge-shaped, the lower compressed; and in each jaw four grinders. The whiskers are long. The tail is cylindrical, hairy, and thickest towards the end. The fore and hind legs are of nearly equal length; and the fore feet have each four toes.

† DESCRIPTION. This animal is about the size of a mouse; but

interwoven moss, dead leaves, and grass. It is about six inches in diameter, and has a small orifice near the top, for the ingress and egress of the animal. In this, about the month of May or June, the female produces her offspring, which are usually four or five in number.

Dormice have not the sprightliness of the Squirrel; but, like that animal, they collect together little magazines of nuts, acorns, and other food, for their winter provision. The consumption of their hoard, during the rigour of winter, is but small; for, retiring into their holes on the approach of the cold, and rolling themselves up, they lie torpid nearly all that gloomy season. Sometimes they experience a short revival in a warm sunny day; when they take a little food, and then relapse into their former state.

OF THE JERBOAS IN GENERAL*.

The Jerboas seem, in many respects both of conformation and habit, much allied to the kangaroos; but an adherence to artificial system will not allow them to be arranged together. They use their long hind legs in leaping, seldom going on all-fours; and, with their fore legs, they both carry the food to their mouth, and make their holes in the ground. They are inhabitants principally of the warmer climates.

it is proportionably more bulky. It is of a tawny red colour, with a white throat. Its eyes are full, and black.

SYNONYMS. *Myoxus Muscardinus*. Linn. Gmel.—*Mus Avelanarius*. Linn. *Syst. Nat.* ed. xii.—Dormouse, or Sleeper. Ray.—*Muscardin*. Buffon.—*Bingley's Mem. of Brit. Quad.* Pl. 32.

* They have two front teeth above, and two below; the fore legs are short, and the hind ones very long; and they have clavicles, or collar bones.

THE SIBERIAN JERBOA *.

Dry, hard, and clayey ground, is that which the Jerboas prefer for the place of their habitation. In this they dig their burrows very speedily, not only with their fore feet, but with their teeth; and fling the earth back with their hind feet, so as to form a heap at the entrance. The burrows are many yards long; and run obliquely and winding, but not above half a yard deep below the surface. They end in a large space or nest, the receptacle of the purest herbs. They have usually but one entrance; yet, by a wonderful sagacity, the animals work from their nest another passage, to within a very small space from the surface, which, in case of necessity, they can burst through, and so escape.

The sands and rubbish which surround modern Alexandria, are much frequented by Jerboas. They live there in troops; and, in digging the ground, are said to penetrate even through a stratum of softish stone, which is under the layer of sand. Though not actually wild, they are exceedingly shy and restless: the slightest noise, or any new object whatever, makes them retire to their holes with the utmost precipitation.

It is almost impossible to kill them, except when taken

* DESCRIPTION. This animal is of a pale, yellowish, fawn colour on the upper parts, and white beneath. The length of the body is about eight inches; and of the tail ten. It very much resembles the Egyptian Jerboa; except in the hind feet, each of which has five instead of three toes.

SYNONYMS. *Dipus Jaculus*. Linn. *Gmel.*—*Mus Jaculus*. Linn. *Syst. Nat. ed. xii.*—Egyptian Jerboa. *Pennant.*—Jerboa. *Bruce.*—Jerbo. *Sonnini.*—Gerboa, or Daman Israel. *Shaw's Travels.* Gerboise et Alagtaga. *Buffon.*—Erdhaase. *Gmelin's Travels.*—*Shaw's Gen. Zool. Pl. 158.*—*Bew. Quad. 397.*

by surprise. The Arabs have the art of catching them alive, by stopping up the outlets to the different galleries belonging to the colony; one excepted, through which they force them to issue from the ground.

Though animals of a very chilly nature, they keep within their holes in the day, and wander about only during the night. They first come out at sun-set, and clear their holes of their filth; and they remain abroad till the sun has drawn up the dews from the earth.

They walk only on their hind legs, the fore legs being very short; and on the approach of any danger, they immediately take to flight, in leaps six or seven feet high, which they repeat so swiftly, that a man mounted on a good horse can scarcely overtake them. They do not proceed in a straight line; but run first to one side, and then to the other, till they find either their own burrow, or some neighbouring one. In leaping, they bear their tails (which are longer than their bodies) stretched out. In standing or walking, they carry them in the form of an S; the lower part touching the ground, so that it seems a director of their motions. When surprised, they will sometimes go on all-fours; but they soon recover their attitude of standing on their hind-legs, like a bird. When undisturbed, they use the former posture; then rise erect, listen, and hop about like a crow. In digging or eating, they drop on their fore-legs; but in the latter action, they often sit upright like a squirrel.

The Arabs of the kingdom of Tripoli, in Africa, teach their greyhounds to hunt the antelope, by first instructing them to catch Jerboas; and so agile are these little creatures, that Mr. Bruce has often seen, in a large courtyard or enclosure, the greyhound employed a quarter of an hour before he could kill his diminutive adversary; and had not the dog been well trained, so as to make use of his

feet as well as his teeth, he might have killed two antelopes in the time of killing one Jerboa.

In their wild state, these animals are fond of tulip-roots, and nearly all the oleaginous plants; but in confinement, they do not refuse raw meat. They are the prey of most of the smaller rapacious beasts. It requires no difficulty to tame them, but it is necessary that they should be kept warm. They are so susceptible of cold, as to foretel bad weather by wrapping themselves close up in their cage before its commencement; and those that are abroad, always, on these occasions, stop up the mouths of their burrows. They sleep during the winter; but a warm day sometimes revives them. On the return of the cold, they always retreat again to their holes.

M. Sonnini, while he was in Egypt, fed, for some time, six of these animals, in a large cage of iron wire. The very first night they entirely gnawed asunder the upright and cross sticks of their prison; and he was under the necessity of having the inside of the cage lined with tin. They were fond of basking in the sun; and the moment they were put into the shade, they clung close to each other, and seemed to suffer much from the privation of warmth. They did not usually sleep during the day. Though they had great agility in their movements, gentleness and tranquillity seemed to form their character. They suffered themselves to be stroked with great composure; and never made a noise or quarrelled, even when food was scattered among them. No distinguishing symptoms of joy, fear, or gratitude were discoverable; and their gentleness was by no means either amiable or interesting: it appeared the effect of a cold and complete indifference, approaching to stupidity. Three of these died, one after another, before Sonnini left Alexandria: two died on a rough passage to the island of Rhodes; and the last, he supposes, was devoured by cats when he was at the island.

He says it is very difficult to transport these tender little creatures into other climates; but, as an indispensable precaution to those who attempt it, he advises that they be closely shut up in strong cages, or other conveniences, without any possibility of escaping; for their natural disposition inciting them to gnaw whatever comes in their way, they may occasion considerable damage to a ship in the course of her voyage; and, being able to eat through the hardest wood, may even endanger her sinking.

These animals, which are natives of various parts of the eastern deserts of Siberia, and also of Barbary, Syria, and some parts of Tartary, breed several times in the summer, and usually produce seven or eight young-ones at a litter. The Arabs eat them, and as articles of food, esteem them among the greatest delicacies of their tables.

OF THE HARE TRIBE IN GENERAL.*

These animals subsist entirely on vegetable food. They are all remarkably timid. The habitations of most of the species are burrows, formed under the surface of the ground. Some of them collect into flocks, consisting of five or six hundred, or even more, and migrate in these numbers from place to place, frequently to a great distance, in search of food.

In northern latitudes, where the frosts of the winter are very intense, and where snow lies for several months on the ground, all the Hares, at the approach of that season, change their colour and become white. They are thus enabled, in a great measure, to elude the pursuit of their enemies.

* The generic character of the Hares consists in their having two front-teeth, both above and below, the upper pair duplicate; two small interior ones standing behind the others: the fore-feet with five, and the hinder with four, toes.

THE COMMON HARE*.

This little animal is found throughout Europe, and indeed in most of the northern parts of the world. Being destitute of weapons of defence, it is endowed by Providence, in a high degree, with the sentiment of fear. Its timidity is known to every one: it is attentive to every alarm, and is, therefore, furnished with ears very long and tubular, which catch the remotest sounds. The eyes are so prominent, as to enable the animal to see both before and behind.

The Hare feeds in the evenings, and sleeps in his *form* during the day; and, as he generally lies on the ground, he has the feet protected, both above and below, with a thick covering of hair. In a moon-light evening many of them may frequently be seen sporting together, leaping about and pursuing each other; but the least noise alarms them, and they then scamper off, each in a different direction. Their pace is a kind of gallop, or quick succession of leaps; and they are extremely swift, particularly in ascending the higher grounds, to which, when pursued, they generally have recourse; here their large and strong hind-legs are of singular use to them.

In the winter they generally choose a form exposed to the south, in order that they may obtain all the possible warmth of that season; and in summer, when they are desirous of shunning the hot rays of the sun, they change this for one with a northerly aspect: but, in both cases, they have the instinct of generally fixing upon a place where the immediately surrounding objects are nearly of the colour of their own bodies.

* SYNONYMS. *Lepus timidus*. *Linnaeus*.—*Le Lievre*. *Buffon*.—*Bingley's Mem. of Brit. Quad. Pl.* 33.

In one Hare that a gentleman watched, as soon as the dogs were heard, though at the distance of nearly a mile, she rose from her form, swam across a rivulet, then lay down among the bushes on the other side, and by this means evaded the scent of the hounds. When a Hare has been chased for a considerable length of time, she will sometimes push another from its seat, and lie down there herself. When hard pressed, she will mingle with a flock of sheep, run up an old wall and conceal herself among the grass on the top of it, or cross a river several times at small distances. She never runs in a line directly forward; but constantly doubles about, which frequently throws the dogs out of the scent: and she generally goes against the wind. It is extremely remarkable that Hares, however frequently pursued by the dogs, seldom leave the place where they were brought forth, or that in which they usually sit; and it is a very common thing to find them, after a long and severe chase, in the same place the day following.

The females have less strength and agility than the males: they are, consequently, more timid; and never suffer the dogs to approach them so near, before they rise, as the males. They are likewise said to practise more arts, and to double more frequently.

This animal is gentle, and susceptible even of education. He does not often, however, though he exhibits some degree of attachment to his master, become altogether domestic: for, even when taken very young, brought up in the house, and accustomed to kindnesses and attention, no sooner is he arrived at a certain age, than he generally seizes the first opportunity of recovering his liberty, and escaping to the fields.

Whilst Dr. Townson was at Göttingen, a young Hare was brought to him, which he took so much pains with, as to render it more familiar than these animals commonly are. In the evenings it soon became so frolicsome, as to

run and jump about his sofa and bed: sometimes, in its play, it would leap upon, and pat him with its fore-feet; or, whilst he was reading, even knock the book out of his hand. But whenever a stranger entered the room, the little animal always exhibited considerable alarm.

Mr. Borlase saw a Hare that was so familiar as to feed from the hand, lay under a chair in a common sitting-room, and appear, in every other respect, as easy and comfortable in its situation as a lap-dog. It now and then went out into the garden, but, after regaling itself, always returned to the house, as its proper habitation. Its usual companions were a greyhound and a spaniel, both so fond of Hare-hunting, that they often went out together, without any person accompanying them. With these two dogs this tame Hare spent its evenings: they always slept on the same hearth, and very frequently it would rest itself upon them.

Dogs and foxes pursue the Hare by instinct; wild cats, weesels, and birds of prey, devour it; and man, far more powerful than all its other enemies, makes use of every artifice to seize upon an animal which constitutes one of the numerous delicacies of his table. Even this defenceless beast is rendered an object of amusement in the chase:

Poor is the triumph o'er the timid Hare!
Yet vain her best precaution: though she sits
Conceal'd with folded ears; unsleeping eyes,
By nature rais'd to take th' horizon in;
And head conceal'd betwixt her hairy feet,
In act to spring away. The scented dew
Betrays her early labyrinth; and deep
In scatter'd, sullen openings, far behind,
With ev'ry breeze, she hears the coming storm:
But nearer, and more frequent, as it loads
The sighing gale, she springs amaz'd, and all
The savage soul of game is up at once.

The period of gestation is about a month; and the females generally produce three or four at a litter, and this about four times in the year. The eyes of the young-ones are open at their birth: the dam suckles them about twenty days, after which they leave her and procure their own food. They make forms at a little distance from each other, and never go far from the place where they were brought forth. The Hare lives about eight years.

THE RABBIT *.

Rabbits are partial to sandy hillocks, on light soils, which present no obstructions to their burrowing. And they prefer situations which are not far distant from those kinds of vegetables to which they are most partial as food. They live in burrows formed under the surface of the ground. In these the females bring forth their offspring. The fecundity of these animals is truly astonishing. They breed several times in the year, and generally produce seven or eight young-ones at a time. Supposing this to happen regularly for about four years, the progeny from a single pair will amount to more than a *million*. Their numerous enemies prevent any increase likely to prove injurious to mankind; for besides their affording food to us, they are devoured by animals of prey of almost every description, which make dreadful havoc among them. Yet, notwithstanding these, in the time of the Romans they once proved such a nuisance in the Balearic islands, that the inhabitants were obliged to implore the assistance of a military force from Augustus, in order to exterminate them.

The female goes with young about thirty days. A short

* SYNONYMS. *Lepus cuniculus*. *Linnaeus*.—Le Lapin. *Buffon*.—Coney. *Ray*.—*Bingley's Mem. of Brit. Quad. Pl.* 35.

time previously to her littering, if she does not find a hole suited to her purpose, she digs one; not in a straight line, but of a zig-zag form. The bottom of this she enlarges every way; and then, with a quantity of hair which she pulls from her own body, she makes a warm and comfortable bed for her offspring. During the whole of the first two days she never leaves them, except when pressed by hunger; and then she eats with surprising quickness, and immediately returns. She always conceals them from the male, lest he should devour them; and therefore when she goes out, she covers up the hole so carefully, that its place is scarcely perceptible to the eye. In this manner she continues her attention for about a month, when the young are able to provide for themselves. Notwithstanding the unaccountable propensity which the male has to devour them when very young; yet, when they are brought by the mother to the mouth of the hole, to eat such vegetables as she gets for them, he seems to know them, takes them betwixt his paws, smooths their hair, and caresses them with great tenderness.

Rabbits, as they cannot easily articulate sounds, and are formed into societies that live underground, have a singular method of giving alarm. When danger is threatened, they thump on the earth with one of their hind feet; and thus produce a sound that can be heard a great way by animals near the surface. This, Dr. Darwin, from its singularity, and its aptness to the situation of the animals, concludes (though apparently upon false grounds) to be an artificial sign, and merely acquired from their having experienced its utility. He will not allow of any thing like an instinctive propensity.

We have the following account, in Dr. Anderson's *Recreations of Agriculture*, of the regular production of a singular variety of the Rabbit, with only one ear.—“A gentleman of my acquaintance chanced to find a Rabbit

among his breed, that had only one ear; he watched the progeny of that creature, and among them he found one of the opposite sex, that had only one ear also: he paired these two Rabbits together; and has now a breed of Rabbits one-eared, which propagate as fast, and as constantly produce their like, as the two-eared Rabbits from which they were originally descended."

The fur of the Rabbit is very useful in the manufacture of hats.

THE ALPINE HARE *.

The most southern residence of these animals is on the Altaic chain of mountains near the lake of Baikal, in Siberia; and they extend from thence as far northward as to Kamtschatka.—They are always found in the middle regions of the snowy mountains, where these are clad with woods, and where herbs and moisture abound. They sometimes burrow between the rocks, but more frequently lodge in the crevices. They are generally found in pairs; but in bad weather they collect together, lie on the rocks, and whistle so much like the chirp of sparrows, as easily to deceive the hearer. On the report of a gun they run off into their holes; whence, however, if nothing more is heard, they soon return.

By the usual wonderful instinct of similar animals, they

* DESCRIPTION. The Alpine Hare is about nine inches in length. It has a long head and whiskers; and above each eye there are two very long hairs. The ears are short and rounded. The fur is dusky at the roots, of a bright bay at the ends, slightly tipped with white, and intermixed with long dusky hairs: at first sight, however, the animals seem of a bright, unmixed bay colour.

SYNONYMS. *Lepus Alpinus*. Linn.—*Pica des Alpes*. Buffon.—Mountain Hare. Kerr.—*Shaw's Gen. Zool. Pl.* 163.

make a provision against the rigorous season in their inclement seats. A company of them, towards autumn, collect together vast heaps of favourite herbs and grasses, nicely dried; which they place either beneath the overhanging rocks, or between the chasms, or around the trunk of some tree. The way to these heaps is marked by a worn path; and in many places the plants appear scattered, as if to be dried in the sun and harvested properly. The heaps are formed like round or conoid ricks; and are of various sizes, according to the number of the society employed in forming them. They are sometimes about a man's height, and usually three or four feet in diameter.

Thus they wisely provide their winter's stock: without which they must, in the cold season, infallibly 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, by the very judicious manner in which they dry them, they make into excellent hay. The ricks they thus form, are the origin of fertility among the rocks; for the relics, mixed with the dung of the animals, rot in the barren chasms, and create a soil productive of vegetation.

These ricks are also of great service to those persons who devote themselves to the laborious employ of sable-hunting: for, being obliged to go far from home, their horses would often perish for want, had they not the provision of these industrious little animals to support them. They are easily to be discovered by their height and form, even when covered with snow.

The people of Jakutz are said to feed both their horses and cattle on the remnant of the winter stock of these Hares.—As food, the Alpine Hares are themselves neglected by mankind; but they are the prey of the sables and the Siberian Weasel.

THE OGOTONA HARE*.

These little creatures live under heaps of stones, or in burrows in the sandy soil, leaving two or three entrances to their habitation, all of which run obliquely. Their nest is formed of soft grass; and the old females, for greater security, make several burrows near each other, in order that, if disturbed, they may have a secure retreat. They feed in the night; and their voice, as in the last species, is like the note of a sparrow, but much more shrill.

Their principal food is the tender bark of trees, and different herbs. Before the approach of severe weather, even in the spring of the year, they collect a store of vegetables, with which they fill their holes. These operations are considered by the inhabitants, to be certain signs of the approaching change of weather. In autumn, directed by the same instinct as the former species, they form ricks of hay, of an hemispherical shape, about a foot high and wide. In the spring, these heaps are gone, and nothing but the relics are seen.

The Ogotona Hares inhabit all Mongolia, and beyond the lake Baikal, where they are found in great abundance. —The females bring forth their young ones in spring, and, by the end of June, these are fully grown.

THE CALLING HARE†.

These are solitary animals, and rarely to be seen, even in the places where they are most common. They chuse

* DESCRIPTION. The Ogotona Hare is somewhat more than six inches in length, of a pale brown colour above, and somewhat white beneath; and it is entirely destitute of tail.

SYNONYMS. *Lepus Ogotona*. *Linnaeus*. — *Ochodona*, by the Mongolians. — *Shaw's Gen. Zool. Pl.* 163.

† DESCRIPTION. This is a smaller species than the last, but has a great resemblance to it in form. The head is thickly covered

for their habitations some dry spot amidst bushes, and covered with a firm sod; preferring the western sides of the hills. In these they burrow, leaving a very small hole for the entrance, and form long and intricate galleries, in which they make their nests.

Their voice alone betrays their abode: it is like the piping of a quail, but somewhat deeper, and so loud, as to be heard at a very great distance. It is repeated, at equal intervals, three, four, and often six times. These notes are omitted in the mornings and evenings, and also, (except in cloudy or rainy weather,) frequently in the middle of the day. The female is silent for some time after parturition, which is about the beginning of May. She produces six young ones at a litter; towards which she exhibits great affection.

These most harmless and inoffensive animals never go far from their holes: they feed and make their little excursions by night. They are easily tamed, and will scarcely even attempt to bite when handled. The males, in confinement, are observed to attack one another, and they express their anger by a kind of grunting noise.

They are natives of Russia.

with fur; the ears are large and rounded; the legs very short, and the feet furred beneath. The fur on the whole animal is soft, long, smooth, and of a brownish lead colour, and the hairs are tipped with black. On the sides of the body, a yellowish tinge prevails.

SYNONYMS. *Lepus pusillus*. *Linnaeus*.—Calling Hare. *Pennant*.—*Shaw's Gen. Zool. Pl.* 163.

Pecora*.

OF THE CAMEL TRIBE IN GENERAL†.

The disposition of the animals which constitute the present tribe, is in general so mild and inoffensive, that, when they are either bred in a state of domestication, or are caught young and trained to labour, they become extensively serviceable to mankind. In hot and sandy regions they are employed as beasts of draught and burthen. Their pace is usually slow; but being able to sustain themselves, even on the longest journeys, with a very small portion of food, and to undergo fatigues which few, perhaps no other animals could endure, some of the species are an invaluable acquisition to the inhabitants of the districts where they are found.

The number of species hitherto described is seven, of which only two are found on the old continent, the rest being confined to the alpine countries of *Chili* and *Peru*. In a wild state they are supposed to be gregarious, and to associate together in vast herds. The females have each two teats, and seldom produce more than one young-one

* The animals belonging to this order have several wedge-like front-teeth in the lower jaw, and none in the upper. Their feet have cloven hoofs. They live on vegetable food, and all the species ruminates, or chew their cud.

† In the lower jaw of the Camels there are six front-teeth, which are somewhat thin and broad. The canine teeth are at a little distance both from these and the grinders: in the upper jaw there are three, and in the lower two. The upper lip is cleft or divided.

at a birth. The hair of these animals is of a soft and silky texture: and their flesh forms a palatable food.

Like all the other genera of their order, they are furnished with four stomachs, in consequence of which they not only live solely on vegetable food, but ruminate or chew the cud. They swallow their food unmasticated. This is received into the first stomach, where it remains some time to macerate; and afterwards, when the animal is at rest, by a peculiar action of the muscles, it is returned to the mouth in small quantities, chewed more fully, and then swallowed a second time for digestion.

THE ARABIAN, OR SINGLE-HUNCHED CAMEL*, AND
BACTRIAN, OR TWO-HUNCHED CAMEL†.

The Arabian Camel is that, with a single hunch on its back, which we so frequently see exhibited in the streets of this country. In many parts of the east it is domesticated; and, in carrying heavy burthens over the sandy

* DESCRIPTION. The height of this animal, at the shoulder, is from five to seven feet. The hunch is situated on the middle of the back. The hair is soft, woolly, and very unequal: it is longer on the nape, under the throat, and on the hunch, than on any other parts of the body. Its colour is usually somewhat of a reddish gray.

SYNONYMS. *Camelus Dromedarius*. *Linn.*—Le Dromadaire. *Buff.*—Dromedary. *Smellie.*—Arabian or One-hunched Camel. *Penn.*—*Shaw's Gen. Zool.* ii. tab. 166.—*Bew. Quad.* p. 154.

† DESCRIPTION. The Bactrian Camel is distinguishable at first sight, from the last named species, by the two lumps on the upper part of its body: one of these is situated on the shoulders, and the other at a little distance behind. It is a somewhat larger animal than the Arabian Camel, and its legs are, in proportion, shorter.

SYNONYMS. *Camelus Bactrianus*. *Linnaeus.*—Le Chameau. *Buffon.*—Bactrian Camel. *Pennant.*—*Shaw's Gen. Zool.* Pl. 167.—*Bew. Quad.* 159.

deserts, supplies a place which the horse would not be able to fill. The tough and spongy feet of these animals are peculiarly adapted to the hot climates, for in the most fatiguing journeys they are never found to crack. The sand seems indeed their element; for no sooner do they quit it, and touch the mud, than they can scarcely keep upon their feet, and their constant stumbling in such situations is exceedingly dangerous to the rider. Their great powers of abstaining from water enable them to pass unwatered tracts of country for seven, eight, or, as Leo Africanus says, for even fifteen days, without requiring any liquid. They can discover water by their scent at half a league's distance, and, after a long abstinence, will hasten towards it, long before their drivers perceive where it lies. Their patience under hunger is such, that they will travel many days fed only with a few dates, or some small balls of barley meal; or on the miserable thorny plants they meet with in the deserts. M. Denon informs us, that during his travels in Egypt, the Camels of the caravan had nothing in the day but a single feed of beans, which they chewed for the remainder of the time, either on the journey, or lying down on the scorching sand, without exhibiting the slightest signal of discontent.

A large Camel will bear a load of a thousand or twelve hundred pounds, and with this it will traverse the deserts. When about to be loaded, at the command of the conductor the animals bend their knees. If any disobey, they are immediately struck with a stick, or their necks are pulled down; and then, as if constrained, and uttering their groan of complaint, they bend themselves, put their bellies on the earth, and remain in this posture till they are loaded and desired to rise. This is the origin of those large callosities on the parts of their bellies, limbs, and knees, which rest on the ground. If over-burthened, they give repeated blows with their heads to the person

who oppresses them, and sometimes utter the most lamentable cries.

They have a very great share of intelligence; and the Arabs assert that they are so extremely sensible of injustice and ill-treatment, that, when this is carried too far, the inflictor will not find it easy to escape their vengeance; and that they will retain the remembrance of an injury till an opportunity offers for gratifying their revenge. Eager, however, to express their resentment, they no longer retain any rancour when once they are satisfied; and it is even sufficient for them to *believe* they have satisfied their vengeance. Accordingly, when an Arab has excited the rage of a Camel, he throws down his garments in some place near which the animal is to pass, and disposes them in such a manner, that they appear to cover a man sleeping under them. The animal recognises the clothes, seizes them in his teeth, shakes them with violence, and tramples on them in a rage. When his anger is appeased, he leaves them, and then the owner of the garments may make his appearance, and, without any fear, may load and guide him as he pleases. "I have sometimes seen them, (says M. Sonnini,) weary of the impatience of their riders, stop short, turn round their long necks to bite them, and utter cries of rage. In these circumstances the man must refrain from striking his beast, as that would but increase his fury. Nothing can be done but to have patience, and endeavour to appease the animal by patting him with the hand, when, after a little while he will resume his way and his pace of himself."—Like the elephant, Camels have their periodical fits of rage, and during these they sometimes have been known to take up a man in their teeth, throw him on the ground, and trample him under their feet.

There is no mode of conveyance so cheap and expeditious as that by Camels. The merchants and other pas-

sengers unite in a caravan, to prevent the insults and robberies of the Arabs. These caravans are often very numerous, and are always composed of more Camels than men. In these commercial travels their march is not hastened: as the route is frequently seven or eight hundred leagues, their motions and journeys are regulated accordingly. The Camels only walk, and they travel thus from ten to twelve leagues a day. Every night they are unloaded, and allowed to pasture at freedom.

When in a rich country, or fertile meadow, they eat, in less than an hour, as much as serves them to ruminate the whole night, and nourish them during the next day. But they seldom meet with such pastures, neither is this delicate food necessary for them. They seem to prefer wormwood, thistles, nettles, broom, cassia, and other prickly vegetables, to the softest herbage. As long as they find plants to browse, they easily dispense with water. This faculty of abstaining from the use of water proceeds not, however, from habit alone, but is an effect of their structure. Till very lately the Camels have been supposed to possess, independently of the four stomachs common to ruminating animals, a fifth bag, which served them as a reservoir for holding water. From a preparation, however, in the collection of Mr. John Hunter, it appears that this fifth bag never existed but in idea. The second stomach is of very peculiar construction, being formed of numerous cells several inches deep, having their mouths uppermost, and the orifices apparently capable of muscular contraction. When the animal drinks, it probably has a power of directing the water into these cells, instead of letting it pass into the first stomach, and when these are filled, the rest of the water will go into that stomach. In this manner a quantity of water may be kept separate from

the food, serving occasionally to moisten it in its passage to the true stomach, for several days.

When travellers find themselves much in want of water, it is no uncommon thing to kill a Camel for what he contains, which is always sweet and wholesome.

“Of all animals (says the Comte de Buffon) that man has subjugated, the Camels are the most abject slaves. With incredible patience and submission, they traverse the burning sands of Africa and Arabia, carrying burthens of amazing weight. The Arabians consider the Camel as a gift sent from Heaven, a sacred animal, without whose assistance they could neither subsist, traffic, nor travel. The milk of the Camel is their common food. They also eat its flesh; and of its hair they make garments. In possession of their Camels, the Arabs want nothing, and have nothing to fear. In one day they can perform a journey of fifty leagues into the desert, which cuts off every approach from their enemies. All the armies in the world would perish in pursuit of a troop of Arabs. By the assistance of his Camel, an Arab surmounts all the difficulties of a country which is neither covered with verdure, nor supplied with water. Notwithstanding the vigilance of his neighbours, and the superiority of their strength, he eludes their pursuit, and carries off with impunity all that he ravages from them. When about to undertake a predatory expedition, an Arab makes his Camels carry both his and their own provisions. When he reaches the confines of the desert, he robs the first passengers who come in his way, pillages the solitary houses, loads his Camels with the booty, and, if pursued, he accelerates his retreat. On these occasions he displays his own talents as well as those of the animals. He mounts one of the fleetest, conducts the troop, and obliges them to travel day and night, almost without either stopping, eating, or drinking; and,

in this manner, he often performs a journey of three hundred leagues in eight days."

With a view to his predatory expeditions, the Arab instructs, rears, and exercises his Camels. A few days after their birth he folds their limbs under their belly, forces them to remain on the ground, and in this situation loads them with a tolerably heavy weight, which is never removed but for the purpose of replacing it by a greater. Instead of allowing them to feed at pleasure, and drink when they are thirsty, he begins with regulating their meals, and makes them gradually travel long journeys, diminishing at the same time the quantity of their aliment. When they acquire some strength they are trained to the course, and their emulation is excited by the example of horses, which, in time, renders them not only fleet, but more robust than they would otherwise be.—In Egypt, their value is, according to their goodness, from two to five hundred livres.

The saddle used by the Arabs is hollowed in the middle, and has at each bow a piece of wood placed upright, or sometimes horizontally, by which the rider keeps himself on his seat. This, with a long pocket, to hold provisions for himself and his beast, a skin of water for the rider, (the animal being otherwise well supplied,) and a leather thong, are the whole of the equipage that the Arab traveller stands in need of, and with nothing more than these he is able to cross the deserts.

The pace of the Camel being a high trot, M. Denon says, that when he was first mounted on one of these animals, he was greatly alarmed lest this swinging motion would have thrown him over its head. He, however, was soon undeceived; for, on being once fixed in the saddle, he found that he had only to give way to the motion of the beast, and then it was impossible to be more pleasantly

seated for a long journey, especially as no attention was requisite to guide the animal, except in making him deviate from his proper direction.—“It was (he continues) entertaining enough, to see us mount our beasts: the Camel, who is so deliberate in all his actions, as soon as the rider leans on his saddle, preparatory to mounting, rises very briskly, first on his hind and then on his fore legs, thus throwing the rider first forward and then backward; and it is not till the fourth motion that the animal is entirely erect, and the rider finds himself firm in his seat. None of us were able for a long time to resist the first shake, and we had each to laugh at his companions.”

When the traveller is not in haste, or when he accompanies a caravan, the progress of which is always slow, on account of the Camels of burthen, a kind of covered litter is fixed on one of these animals, in which he is tolerably at his ease, and where he may even sleep if he chooses. The drivers of the loaded Camels have each a stick, which they use sparingly, if occasion requires; and those who ride whip their animals with a long strap of leather, at the same time urging them with a clicking of the tongue, the same as the Europeans use to their horses.

It has been attempted, but without success, to introduce Camels, both of the Arabian and Bactrian species, into our West India islands. The people were unaccustomed to their habits and manner of feeding; and this, together with the insects called Chigoes*, insinuating themselves into their soft feet, and producing inflammations, and at length painful ulcers, seems to have rendered them totally unfit for service.

The Arabian Camels are natives chiefly of the deserts of Asia and Africa. The Bactrian species are found, at the present day, in the same places where they were observed

* *Pulex penetrans* of Linnæus.

by the ancients; namely, in Usbec Tartary, the ancient Bactria. They are likewise natives of Thibet, and of countries near the frontiers of China.

The Bactrian Camels are employed as beasts of burthen throughout all the regions where they are found. They are capable of supporting even the rigorous climate of the environs of the lake Baikal in Siberia, where they subsist, during the winter, on the bark and tender branches of the birch and other trees; and they are, in every respect, better adapted for living in temperate climates than the Arabian Camels, from the circumstance of their experiencing much less injury, from humid and marshy countries, than these.

In the Menagerie of the Museum of Natural History at Paris, there are two Bactrian Camels, which are supposed to be about forty-four years old. They are sometimes employed in drawing a chariot; but as they have been long out of the habit of it, they are never employed in labour. They consume, every day, about thirty pounds weight of hay or lucern.

The flesh of the Camel is dry and hard, but not unpalatable. It is so much esteemed by the inhabitants of Egypt, that in Cairo and Alexandria, it was, not long ago, forbidden to be sold to the Christians. In Barbary, the tongues are salted and smoked, for exportation to Italy and other countries, and they form a very good dish. The hair is an important article of commerce, serving for the fabrication of the tents and carpets of the Arabs; and leather is made of the skin. In the *materia medica* of China, the different parts of the Camel occupy a conspicuous place: the fat is called the oil of bunches; and the flesh, the milk, the hair, and even their dung, are admitted into the prescriptions of the Chinese physicians.

THE LLAMA*, AND VICUNA†.

The lofty and mountainous regions of Peru, Chili, and other districts of South America, are inhabited both by the Llama and Vicuna. They are mild, gentle, and tractable animals, and are employed in many parts of these countries for the carrying of burthens. In the Spanish settlements, before the introduction of mules, they were employed in the ploughing of land. These animals go on their journeys with great gravity, and nothing can induce them to change their pace. Like the Camel, they lie down to be loaded; and, when they are wearied, no blows will provoke them to proceed. Their disposition is indeed so capricious, that sometimes when they are struck they instantly lie down, and caresses only will induce them again to rise. When provoked, they have no other mode of avenging themselves but by spitting, and they have the faculty of ejecting their saliva to a very considerable dis-

* DESCRIPTION. The Llama is about four feet and a half in height, and, in length, from the neck to the tail, nearly six feet. The usual weight is about 300 pounds. The back is nearly even, and instead of a hunch there the animal has a protuberance on the breast. The head is small, with fine black eyes, and the neck is very long and arched. The general shape is that of a Camel without the dorsal protuberance. In a wild state the hair of the Llama is long and coarse; but when domesticated, it becomes short and smooth. The colour is white, gray, and russet, disposed in spots.

SYNONYMS. *Camelus Glama*. Linn.—Llama. Penn.—Lama. Buff.—Glama. Kerr.—*Shaw's Gen. Zool.* ii. tab. 168.

† DESCRIPTION. The Vicuna is somewhat smaller than the Llama; and its limbs are more neatly formed. There is no protuberance on the breast. The colour of the upper parts of the body is reddish brown, and of the under parts whitish.

SYNONYMS. *Camelus vicugna*. Linnæus.—Le Vigogne. Buffon.—Vicunna. Pennant.—Vicuna. Shaw.—*Shaw's Gen. Zool.* ii. tab. 168.

tance. It is asserted, though without foundation, that this is of so corrosive a quality, that it will produce blisters upon the skin. The saliva of a Llama, which was exhibited in Piccadilly in the year 1805, I received on my hand, and the keeper informed me that he had several times had it thrown even upon his face, without the slightest injury.

The Llamas are employed in transporting the rich ores out of the mines of Potosi. In their journeys, they will sometimes travel four or five days successively before they seem desirous of repose; and they then rest spontaneously twenty or thirty hours before they resume their toil. Sometimes, when they are inclined to rest a few minutes only, they bend their knees, and lower their bodies with great care, to prevent their load from falling off, or being deranged: when, however, they hear their conductor's whistle, they rise with equal precaution, and proceed on their journey. In going along in the day, they browse wherever they find herbage, and generally spend the night in chewing the cud. If their masters continue to abuse them after they are determined not to rise, they are said sometimes to kill themselves, in their rage, by striking their heads alternately from right to left on the ground.

When among their native mountains, they associate in immense herds in the highest and steepest parts, where they frequently climb rocks, along which no man would dare to follow them; and while the rest of a herd feed, one of them is always stationed as a sentinel on the point of some rock. When this animal observes any one approach, it gives a kind of neigh, and the herd, taking the alarm, run off with incredible speed. They gallop to a considerable distance, then stop, turn round, and gaze at their pursuers till they come near, and immediately set off again. They out-run all the dogs, so that the

inhabitants have no other mode of killing them than with guns.

The Lama which I saw in London in 1805, was supposed to have been at that time about eight months old. It had been taken in one of the Spanish ships which had fallen a prize to our seamen. No animal could, apparently, be more tame or docile; but it was easily irritated, and on such occasions always ejected its saliva on the offender. It seemed to bear our climate remarkably well.

OF THE MUSK TRIBE IN GENERAL*.

The Musk animals are inhabitants, almost exclusively, of India and the Indian isles. Two or three of the species are so exceedingly small, as scarcely to exceed a rabbit in size. They are very gentle, but excessively timid: on the appearance of a man they fly with precipitation into the recesses of their native wilds. Like the camels, they have no horns.

THE THIBETIAN MUSK †.

This animal lives retired among the highest and rudest mountains of Thibet and some other parts of Asia. In the autumn large flocks collect together in order to change their place, being driven southward by the approaching cold. During this migration the peasants lie in wait for

* In their lower jaw they have eight front teeth; and in the upper jaw two long tusks, one on each side, which project out of the mouth.

† DESCRIPTION. This species is destitute of horns. The ears are somewhat large, the neck is thick, and the hair on the whole body long, upright, and thick set. Each hair is undulated, the tip ferruginous, the middle black, and the bottom cinereous. The limbs are

them, and either catch them by mean of snares, or kill them with arrows and bludgeons. At these times they are often so meagre and languid, from hunger and fatigue, as to be taken without much difficulty.

They are gentle and timid, having no weapons of defence except their tusks. Their activity is very great, and they are able to take astonishing leaps over the tremendous chasms of the rocks. They tread so lightly on the snow, as scarcely to leave a mark; while the dogs that are employed in the pursuit of them sink in, and are frequently obliged to desist from the chase. In a state of captivity they live but a very short time. They feed on various vegetables of the mountains.—They are usually taken in snares, or shot by cross-bows placed in their tracks, with a string from the trigger for them to tread on and discharge the bow.

In an oval receptacle, about the size of a small egg, is contained the well-known drug called *musk*. This hangs from the middle of the abdomen, and is peculiar to the male animal. A full-grown male will yield a drachm and a half, and an old one two drachms. The bag is furnished with two small orifices, the one naked and the other covered with oblong hairs. Gmellin tells us, that on squeezing this bag, he forced the musk through the apertures, in the form of a brown fatty matter. The hunters cut off the bag and tie it up for sale, but often adulterate the contents by mixing them with other matter to increase the

slender, and of a full black colour; and the tail is so short as to be scarcely visible. The length of the male is about three feet, and that of the female about two feet and a quarter; and their average weight is from twenty-five to thirty pounds.

SYNONYMS. *Moschus moschiferus*. Linn.—Musc. Buffon.—Thibet Musk. Penn.—Shaw's Gen. Zool. ii. tab. 171.—Bew. Quad. p. 115.

weight. The musk is even sometimes taken entirely out, and a composition of the animal's blood and liver (for this drug has much the appearance of clotted blood) is inserted in its stead: but when the bags are opened, the imposition may be immediately detected. The deceit, however, most commonly practised, is that of putting into the bags little bits of lead, in order to augment the weight.—The animals are found in the eastern countries in great numbers; for Tavernier informs us, that in one journey he collected no fewer than 7673 musk-bags.

It is generally asserted, that when the musk-bag is first opened, so powerful an odour comes from it, that every person present is obliged to cover his mouth and nose with several folds of linen; and that, notwithstanding this precaution, the blood will frequently gush from the nose. When the musk is fresh, a very small quantity in a confined place is insupportable; it causes giddiness in the head, and hemorrhages which have sometimes proved fatal.

Besides being of use on account of the musk they produce, the skins of these animals, in many of the countries where they are found, are used as winter-clothing. The Russians scrape off the hair, and have a method of preparing the leather so as to render it as soft and shining as silk; this they adopt as part of their summer-dress.

OF THE DEER IN GENERAL.*

This is an active tribe, inhabiting, principally, wild and woody regions. In their contentions, both among each other and with the rest of the brute creation, these animals

* These animals have eight front teeth in the lower jaw. In general they are destitute of canine teeth; but in some of the species a single one is found on each side of the upper jaw.

not only use their horns, but also strike furiously with their fore-feet. Some of the species are employed by mankind as beasts of draught. The flesh of the whole tribe is wholesome; and that of some of the kinds, under the name of venison, is accounted particularly delicious.

The horns, which are only found on the heads of the males, are solid and branched. They are renewed every year; and, while young, are covered with a skin which is extremely vascular, and clothed with a fine velvet fur, that dries, shrivels, and falls off when the horns have attained their full size.

THE ELK, OR MOOSE-DEER*.

The legs of Elks are so long, and their necks so short, that they cannot graze on level ground, like other animals, but are obliged to browse the tops of large plants, and the leaves or branches of trees. In all their actions and attitudes they appear very uncouth; and, when disturbed, never run, but only make off in a kind of trot, which they do with great swiftness, and apparently with much ease.

* DESCRIPTION. This animal is generally larger than the horse, both in height and bulk. The legs are long, the body round, the neck short, and the head and ears long. The hair of the male is black at the points, cinereous in the middle, and at the roots perfectly white. That of the female is of a sandy-brown, but whitish under the throat, belly, and flank. The upper lip is square, very broad, deeply furrowed, and hangs much over the mouth; the nose is broad, and the nostrils are large and wide. The horns, which are found only on the males, have no brow-antlers, and the palms are extremely broad. They are shed annually; and some have been seen that weighed upwards of sixty pounds.

SYNONYMS. *Cervus alces*. Linn.—Moose Deer. Dudley.—Moose Elk. Penn.—Elan. Buffon.—Shaw's Gen. Zool. ii. tab. 174, 175.—Bew. Quad. p. 120.

In their common walk they lift their feet very high, and they are able, without any difficulty, to step over a gate five feet in height.

Their faculty of hearing is supposed to be more acute than that either of their sight or scent, which renders it a very difficult task to kill them in the summer time; and the Indians have then no other method of doing this, but by creeping after them among the trees and bushes, till they get within gun-shot. In winter, when the snow is so hard frozen as to allow the natives to go upon it in their snow-shoes, they are able frequently to run these animals down; for their slender legs break through the snow at every step, and plunge them up to the belly. They are so tender-footed, and so short-winded, that a good runner will generally tire them out in less than a day.

In summer time the Elks frequent the margins of rivers and lakes, getting into the water in order to avoid the innumerable multitudes of musquitoes, and other flies, that pester them during that season. They are often killed by the Indians while they are crossing rivers, or swimming from the main land to islands. When pursued in this situation, they are the most inoffensive of all animals, never making any resistance. And the young ones are so simple, that, in North America, Mr. Hearne saw an Indian paddle his canoe up to one of them, and take it by the poll without the least opposition; the poor harmless animal seeming, at the same time, as contented along-side the canoe, as if swimming by the side of its dam, and looking up in the faces of those who were about to become its murderers with the most fearless innocence; using its fore-feet, almost every instant, to clear its eyes of the numerous musquitoes which alighted upon it.

Elks are the easiest to tame and domesticate of any of the Deer kind. They will follow their keeper to any distance from home; and, at his call, will return with

him, without the least trouble, and without ever attempting to deviate from the path.

An Indian, at the Factory at Hudson's Bay, had, in the year 1777, two of them so tame, that when he was on his passage to Prince of Wales's Fort, in a canoe, they always followed him along the bank of the river; and at night, or on any other occasion, when he landed, they generally came and fondled on him, in the same manner as the most domestic animal would have done, and never attempted to stray from the tents. He did not, however, possess these animals long; for he one day crossed a deep bay in one of the lakes, in order to save a very circuitous route along its bank, and expected the creatures would, as usual, follow him round: but, unfortunately, at night they did not arrive; and as the howling of wolves was heard in the quarter where they were, it is supposed they had been devoured by them, for they were never afterwards seen.

M. D'Obsonville had a Moose-Deer in his possession, while in the East Indies. He procured it when only ten or twelve days old, and kept it about two years without ever tying it up. He even let it run abroad, and sometimes amused himself with making it draw in the yard, or carry little burthens. It always came when called, and he found few signs of impatience, except when it was not allowed to remain near him. When he departed from the island of Sumatra, he gave it to Mr. Law of Lauriston, the governor-general, an intimate friend. This gentleman sent it to his country-house, where, being kept alone, and chained, it became so furious as not to be approached without danger: even the person who every day brought its food was obliged to leave this at some distance. "After some months' absence (says M. D'Obsonville) I returned: it knew me afar off, and as I observed the efforts it made to get at me, I ran to meet it; and never shall I forget the impression

which the caresses and transports of this faithful animal made upon me."

An attempt has been made at New York to render the Elk useful in agricultural labours, which has been attended with success. Mr. Chancellor Livingston, the president of the New York Society, had two of these animals broken to the harness. Though they had only been twice bitted, and were two years old, they appeared to be equally docile with colts of the same age. They applied their whole strength to the draught, and went on a steady pace. Their mouths appeared very tender, and some care was necessary to prevent them from being injured by the bit. If, upon trial, it is found that the Elks can be rendered useful in harness, it will be a considerable acquisition to the Americans. As their trot is very rapid, it is probable that, in light carriages, they would out-travel the Horse. They are also less delicate in their food than that animal, becoming fat on hay only. They are long-lived, and more productive than any beast of burthen.

The Indians have a superstitious notion that there is an Elk of such an enormous size, that eight feet in depth of snow is no impediment to its walking; that its hide is proof against weapons of every description, and that it has an arm growing out of its shoulder, subservient to the same purposes as ours. They say also that this imaginary animal is attended by a vast number of other Elks, which form his court, and render him every service that a sovereign can require of them.—The Indians esteem the Elk an animal of good omen, and believe that to dream of it often is an indication of long life.

When suddenly roused, and it is endeavouring to make its escape, the Elk is observed at times to fall down, as if deprived for some moments of motion. Whether this be owing, as frequently has been imagined, to an epileptic fit, or whether it merely arises from fear, it is not, perhaps,

easy to determine. This circumstance, however, has given rise to the popular superstition of attributing to the hoofs of the Elk the virtues of an anti-epileptic medicine; and the Indians even imagine that the animal has the power of curing itself of its own disorder, or at least of preventing an approaching fit, by scratching its ear till it draws blood.

The flesh of the Elk is good; but the grain is coarse, and it is much tougher than any other kind of venison. According to Mr. Pennant, the tongues are excellent, and the nose so like marrow, as to be esteemed the greatest delicacy produced in Canada.—The skins make excellent tent-covers and shoe-leather.

These animals inhabit the forests of Europe, America, and Asia, as far as Japan. The females generally produce their young ones, from one to three in number, towards the latter end of April or the beginning of May.

THE REIN-DEER*.

To the Laplanders this animal is the substitute for the horse, the cow, the goat, and the sheep; and is their only wealth. The milk affords them cheese; the flesh, food;

* DESCRIPTION. The Rein-deer is found in most of the northern regions of Europe, Asia, and America. Its general height is about four feet and a half. The colour is brown above and white beneath; but, as the animal advances in age, it often becomes of a grayish white. The space about the eyes is always black. The hair on the under part of the neck is much longer than the rest. The hoofs are long, large, and black. Both sexes are furnished with horns, but those of the male are much the largest. These are long, slender, and branched; furnished with brow-antlers, having widely-expanded and palmated tips, directed forwards.

SYNONYMS. *Cervus tarandus*. *Linnaeus*.—*Renne*. *Buffon*.—*Rein Deer*. *Penn.*—*Shaw's Gen. Zool.* ii. tab. 175.—*Bew. Quad.* p. 127.

the skin, clothing; the tendons, bow-strings, and, when split, thread; the horns, glue; and the bones, spoons. During the winter the Rein-deer supplies the want of a Horse, and draws their sledges with amazing swiftness over the frozen lakes and rivers, or over the snow, which at that time covers the whole country.

With a couple of Rein-deer yoked to a sledge, it is said that a Laplander is able to travel 112 English miles in a day. The Laplanders say, that they can thrice change the horizon in twenty-four hours; that is, they can three times pass that object, which, at their setting out, they saw at the greatest distance their eyes could reach.

The sledge is formed somewhat like a boat, having a back-board in it for the rider to lean against. Its bottom is convex, and none but a person well practised in such a mode of travelling could preserve himself a moment from oversetting. It is square behind, but projects to a point before. The traveller is tied in it like a child in a cradle. He manages his carriage with great dexterity, by means of a stick with a flat end, to remove stones or any obstructions he may meet with. To the peak in front a thong is fixed, which yokes the Rein-deer. The bit is a piece of narrow leather tacked to the reins of the bridle over the animal's head and neck; and from the breast a leathern strap, passing under the belly, is fastened to the front part of the sledge.

Before the Laplander enters the sledge he puts on his gloves, afterwards he places himself in it, taking the rein or halter fastened to the Rein-deer's head, and tying it about his right thumb. In the mean time the Deer stands still, and the rein hangs on the left side. When the man is ready to set off, he shakes the rein with violence from side to side, and the animal springs forward with great speed. The driver directs the course of the Deer, which is irregular and serpentine, by pulling the rein on the side he would

have him go; and encourages him with his voice: for this purpose it is that the love-songs of the Laplanders are in general composed. Among these are found some beautiful specimens of the poetry of a rude and uncivilized nation: two or three of them have appeared in an English dress, and have met with the admiration they so justly deserve. One less known than the rest I shall insert from Mr. Consett's Tour in Lapland.

The snows are dissolving on Tornao's rude side,
And the ice of Lulhea flows down the dark tide:
Thy dark stream, oh Lulhea, flows freely away,
And the snow-drop unfolds her pale beauties to-day.

Far off the keen terrors of winter retire,
And the North's dancing streamers relinquish their fire,
The sun's genial beams swell the bud on the tree,
And Enna chants forth her wild warblings with glee.

The Rein-deer, unharnessed, in freedom shall play,
And safely o'er Odon's steep precipice stray;
The Wolf to the forest's recesses shall fly,
And howl to the moon as she glides through the sky.

Then haste, my fair Luah, oh! haste to the grove,
And pass the sweet season in rapture and love;
In youth let our bosoms in ecstasy glow,
For the winter of life ne'er a transport can know.

Thus does Providence, who always finds a substitute where full enjoyment is denied, unfold a ray of contentment to the heart of the Laplander. Happy would it be for more polished society, if, in the midst of their entertainments, they could meet with the same consolation! If the native of Lapland possess not his flocks and his herds, if he see not around him valleys smiling with corn, nor rich pastures and fine meadows,—of this at least he is certain,

that he has no need of them. Thomson, after describing the "martial hordes" of the north, beautifully contrasts with these the simple and uncorrupted manners of this rude but harmless people.

"Not such the sons of Lapland: wisely they
Despise the insensate barbarous trade of war;
They ask no more than simple nature gives,
They love their mountains, and enjoy their storms.
No false desires, no pride-created wants,
Disturb the peaceful current of their time,
And thro' the restless ever-tortured maze
Of pleasure or ambition bid it rage.
Their Rein-deer form their riches: these, their tents,
Their robes, their beds, and all their homely wealth
Supply, their wholesome fare, and cheerful cups:
Obsequious at their call, the docile tribe
Yield to the sledge their necks, and whirl them swift
O'er hill and dale, heap'd into one expanse
Of marbled snow, as far as eye can sweep,
With the blue crust of ice unbounded glaz'd."

It must appear wonderful that the Laplanders should be able to travel in winter (in their sledges,) by night as well as by day, when the earth presents one entire surface of snow, and not a single vestige is discoverable of human industry and labour to direct their way, the snow at the same time flying about in all directions, and almost blinding them: yet it is certain that they are at no difficulty to find the spot to which they are bound, and very rarely meet with any accident. They fix bells to the harness of the Rein-Deer, in order that they may be kept together by hearing, when they cannot see one another, after the light of their short day fails them. To guide them in their route, the Laplanders observe the quarter from whence the wind blows, and at night are directed by the stars. The Missionary *Liems*, who resided ten years among this peo-

ple, remarks, that during the whole of that time he did not remember more than one fatal accident happening from this mode of travelling.

A rich Laplander is often possessed of a herd of more than a thousand Rein-deer. In autumn these seek the highest hills, in order to avoid the Lapland Gad-fly *, which at that time deposits its eggs in their skin: it is the pest of these animals, and numbers die that are thus visited. The moment a single fly appears, the whole herd instantly perceive it; they fling up their heads, toss about their horns, and at once attempt to fly for shelter amidst the snows of the loftiest Alps. In summer they feed on several kinds of plants; but during winter on the Rein-deer liverwort †, to get at which, as it lies far beneath the snow, they dig with their feet and antlers. It is, therefore, a most kind dispensation of Providence, that in the Deer, the only tribe living among snows, most of the females should be furnished with horns, the more readily to provide themselves with food. But besides this there is another lichen, that hangs on the Lapland pines, which affords sustenance to the Rein-deer when the snows are too deep to allow them to reach their usual food. When the snow is impenetrably frozen, the boors frequently cut down some thousands of these moss-clad trees, for the support of their herds.

During the summer season the animals lose their vigour and swiftness, and are soon overcome by the heat. Mr. Consett saw them reclining in the woods, and apparently so enfeebled as scarcely to be able to move out of the way. When thus oppressed they frequently make a noise like the grunting of a hog.

* *Oestrus tarandi* of Linnæus. The skins of the Rein-deer, after they are killed, are sometimes found to be as full of holes as a sieve, from the operations of these insects.

† *Lichen rangeferinus* of Linnæus.

Besides the gad-fly, the Rein-deer have several other enemies, the chief of which are bears and wolves; but unless taken by surprise, or when their horns are newly shed, they are frequently able to defend themselves against the attacks of these animals, and even entirely to drive them off.

The Rein-deer are able to swim with such incredible force and swiftness across the widest rivers, that a boat with oars can scarcely keep pace with them. They swim with their bodies half above water, and will pass a river or a lake even in the coldest weather.

All persons who have described the Rein-deer have taken notice of a cracking noise which they make when they move their legs. This has been attributed to the animals' separating and afterwards bringing together the divisions of their hoofs; which, as they inhabit a country generally covered with snow, are therefore admirably adapted to the surface they have most commonly to tread.—The under part is entirely covered with hair, in the same manner that the claw of the ptarmigan is with feathery bristles, which is almost the only bird that can endure the rigour of the same climate.

The hoofs, however, are not only thus protected, but the same necessity which obliges the Laplanders to use snow-shoes, makes the extraordinary width of the Rein's hoofs to be equally convenient in passing over snow; as it prevents their sinking too deeply, which they would be subject to eternally, did the weight of their body rest only on a small point. This quadruped has, therefore, an instinct to use a hoof of such a form in a still more advantageous manner, by separating it when the foot is to touch the ground, so as to cover a larger surface of snow.—The instant, however, that the leg of the animal is raised, the width of the foot becomes inconvenient, especially when the Rein is going against the wind; the hoof, therefore, is then immedi-

ately contracted, and the collision of the parts occasions the snapping which is heard upon every motion of the animal.

Pontoppidan tells us, that "the Rein-deer has over his eye-lids a kind of skin, through which it peeps, when otherwise, in hard showers of snow, it would be obliged to shut its eyes entirely." He, however, seems to have mistaken this for, probably, a breathing-hole, somewhat similar to that near the eye of the fallow-deer, and some of the species of antelope.

The Rein-deer cast their horns annually. The rudiments of the new horns are at first covered with a kind of woolly membrane, which the creature, after some time, rubs off. They also change their hair every spring, during which time they are very lean, and of little use.—The female begins to breed at the age of two years, goes with young eight months, and generally brings forth two at a time. The fondness of the dam for her offspring is very remarkable. They follow her two or three years, but do not acquire their full strength until four. It is at this age that they are trained to labour; and they continue serviceable for four or five years. They seldom outlive the age of fifteen or sixteen.

In Siberia, where they are extremely numerous, these animals meet with a more rough and savage usage than their fellows experience from the harmless Laplanders. In the woody districts, where springes, fire-arms, and spring-guns can be applied, the natives resort to such for either the taking or killing of this harmless animal: but in open plains, where these contrivances would fail, many other means have been invented. Those adopted by the Samoydes seem the most common.

These people go out in parties for the purpose of killing Rein-deer; and when they perceive a herd, they station several tame Rein-deer, which they bring with them, on an

elevated plain to the windward. Then, from this place to as near the savage herd as they can venture to come without alarming them, they put into the snow long sticks, at small distances, and to each of them tie a goose's wing, which flutters about freely with the wind. This being done, they plant similar sticks and pinions on the other side, under the wind; and the Rein-deer being busy with their pasture under the snow, and being chiefly guided by their scent, generally observe nothing of these preparations.—When every thing is ready, the hunters separate; some hide themselves behind their snowy entrenchments, while others lie with bows and other weapons in the open air to the leeward, and others again go to a distance, and drive, by a circuitous route, the game between the terrific pinions. Scared by these, the wild Rein-deer run directly to the tame ones, which are standing by the sledges; but here they are alarmed by the concealed hunters, who drive them to their companions that are provided with arms, and these immediately commit terrible slaughter among them.

If it happen that a savage herd are feeding near a mountain, the hunters hang up all their clothes on stakes about the foot of the mountain, making also with the same frightful pinions a broad passage towards it, into which they drive the game. As soon as they are come into this path, the women go with their sledges directly across the further end of it, shutting the Rein-deer in, who immediately run round the mountain, and at every turn are fired at by the hunters.

Sir Henry George Liddell, Bart, brought with him from Lapland, in the year 1786, five Rein-deer to England, which he kept at his seat of Eslington-castle in Northumberland. They bred, and there was every prospect that they would succeed and even become prolific; but, unfortunately, some of them were killed, and the others died in

consequence of a disorder similar to that called the *rot* in sheep, supposed to have been occasioned by the richness of the grass on which they fed.

THE RED DEER *.

The elegance and beauty of this animal have always obtained for it much admiration. It is a native of many parts of Europe, and is supposed to have been originally introduced into this country from France. It was, however, about a century back, to be found in a state of nature in many of the wild and mountainous parts of Wales. Leland, speaking of the mountains about Snowdon, says, "In them ys very little corne, except oats in some places, and a litle barley, but scantly rye; if there were, the *Deer would destroy it*." And I am informed that Stags are sometimes seen in a wild state, even now, in the forest of Exmore, in Devonshire, and the woods on the Tamar. There is here an annual Stag-hunt, under the patronage of the Ackland family. Mr. Stackhouse, of Pendarvis in Cornwall, informs me that he once saw a wild Hind that had been killed near Launceston. Stags are also still occasionally found in the Highlands of Scotland.

These animals live in herds of many females and their young, headed by one male. They frequent the forests, browsing on grass, or the leaves and buds of various trees.

The males only have horns, and these are always shed in

* DESCRIPTION. The height of these animals at the shoulder, is about three feet and a half. The males only are horned; and the horns, which are much branched, are rounded through their whole length. The general colour of the hair is reddish brown on the upper, and white on the under parts of the body.

SYNONYMS. *Cervus elaphus*. *Linnaeus*.—*Cerf*, *Beche et Faon*. *Buffon*.—Red-Deer, Hart, or Stag. *Penn.*—*Bingley's Mem. of Brit. Quad.* Pl. 36.

the spring. During the first year, the young animals have no horns, but only a rough excrescence in the place of them, covered with a thin, hairy skin. In their second year the horns are straight, and without branches; the following year they acquire two antlers, or branches; and they generally have an additional one every year till their sixth, from which time the animals may be considered at maturity.—When the Stag sheds his horns, he seeks the most retired places, and feeds only during the night; for otherwise the flies settle on the soft skin of the young horns, which is exquisitely tender, and keep the animal in continual torture. The place of the horn is for a little time occupied by a soft tumour full of blood, and (as in others of the same genus) is covered with a downy substance like velvet. This increases daily, and, at length, the antlers shoot out: from this time a few days complete the whole.—The horns of the Stag are round through their whole length, which constitutes a distinguishing characteristic betwixt them and the horns of the fallow-deer, the latter, where they branch off, being flatted for the breadth of more than a hand.

The senses of smelling and hearing are in this animal remarkably acute. On the slightest alarm he lifts his head and crects his ears, standing for a few minutes as if in a listening posture. Whenever he ventures upon unknown ground, or quits his native coverts, he first stops at the skirts of the plain to examine all around; he next turns against the wind, to examine by the smell if there be any enemy approaching. If a person happens to whistle or call out at a distance, the Stag is seen to stop short, in his slow measured pace, and gaze upon the stranger with a kind of awkward admiration: if the cunning animal perceive neither dogs nor fire-arms preparing against him, he goes slowly forward, unconcerned, and does not attempt to run away. Man is not the enemy he is most afraid of; on the

contrary, he seems to be delighted with the sound of the shepherd's pipe; and the hunters sometimes make use of that instrument to allure the animal to its destruction.

When a herd of Stags have to pass a wide river, which they are able to do without much difficulty, they are said to rest their heads on each other's rumps. If the leader becomes fatigued, he retreats to the rear, and suffers the next in succession to take his place. They swim with so much ease, that a male has been known to venture out to sea in search of females, and to cross from one island to another, although at a distance of some leagues.

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

This animal's voice becomes stronger, louder, and more tremulous, as he advances in age; and, during the rutting time, it is even terrible. At this season he seems so transported with passion, that nothing can obstruct his fury; and, when at bay, he keeps off the dogs with great intrepidity. Some years ago the Duke of Cumberland caused a Tiger and a Stag to be enclosed in the same area: and the Stag made so bold and furious a defence, that the Tiger was at length obliged to give up the contest.

The natives of Louisiana hunt these animals both for food and as an amusement. This is sometimes done in companies, and sometimes alone. The hunter who goes out alone, furnishes himself with the dried head of a Stag, having part of the skin of the neck attached to it. This, a

gun, and a branch of a tree, or piece of a bush, are all that he has need of. When he approaches any of the wild Deer, he hides himself behind the bush, which he carries in his hand, and advances gently till he is within shot. If the animal appears alarmed, the hunter immediately counterfeits the Deers' call to each other, and holds the head just above the bush : then lowering it towards the ground, and lifting it by turns, he so deceives the Stag by the appearance of a companion, that he seldom fails to come towards to it ; in which case the hunter fires into the hollow of his shoulder, and lays him dead on the spot.

When the hunters go in large parties, they form a wide crescent round one of these animals, the points of which may be half a mile asunder. Some of them approach towards the Stag, which runs, affrighted, to the other side ; when, finding them on that part advancing, he immediately rushes back again. Thus he is driven from side to side, the crescent closing into a circle, and gradually approaching, till at length he is so much exhausted, that he quietly submits to be taken alive. It sometimes happens, however, that he has sufficient strength left to stand at bay ; in which case he is seized from behind, but seldom in this case before some one is wounded. This mode of hunting is merely adopted as a recreation, and is called "the dance of the Deer."

The poet Thomson has left us a most animated description of the hunting of this beautiful animal in our island.

The Stag, too, singled from the herd, where long
He rang'd, the branching monarch of the shades,
Before the tempest drives. At first, in speed,
He, sprightly, puts his faith ; and, rous'd by fear,
Gives all his swift ærial soul to flight.

Against the breeze he darts, that way the more
To leave the lessening murderous cry behind.

Deception short! though fleetier than the winds
Blown o'er the keen-air'd mountains by the north,
He bursts the thickets, glances through the glades,
And plunges deep into the wildest wood.
If slow, yet sure adhesive to the track,
Hot streaming, up behind him come again
Th' inhuman route, and from the shady depth
Expel him, circling through his ev'ry shift.
He sweeps the forest oft; and sobbing sees
The glades, mild opening to the golden day;
Where, in kind contest, with his butting friends
He wont to struggle, or his loves enjoy.
Oft in the full-descending flood he tries
To lose the scent, and lave his burning sides;
Oft seeks the herd: the watchful herd, alarm'd,
With selfish care avoid a brother's woe.
What shall he do? His once so vivid nerves,
So full of buoyant spirit, now no more
Inspire the course; but fainting breathless toil,
Sick, seizes on his heart; he stands at bay;
And puts his last, weak refuge in despair.
The big round tears run down his dappled face;
He groans in anguish; while the growling pack,
Blood happy, hang at his fair-jutting chest,
And mark his beauteous chequer'd sides with gore.

The Highland Chiefs of former days were accustomed to hunt these animals with all the magnificence of Eastern monarchs. They sometimes assembled four or five thousand of their clan, who drove the Deer into toils, or to the station where the lairds had placed themselves: but as this was frequently made only a pretence to collect their vassals for rebellious purposes, an act of parliament was passed, which prohibited any assemblages of this nature.

Much has been said of the extreme long life of the Stag, and many wonderful stories have been related by naturalists respecting it; but there is great reason for supposing that this animal does not often reach the age of fifty years.

The females generally bring forth only one young-one

at a time, and this about the latter end of May or beginning of June. They take care to hide their offspring in the most obscure thickets, for almost every creature is then a formidable enemy: the eagle, the falcon, the osprey, the wolf, the dog, and all the rapacious family of the cat-kind, are in continual employment to find out the retreat. But, what seems most unnatural, the Stag himself is a professed enemy, and the female is obliged to use all her arts to conceal her young-one from him, as from the most dangerous of her pursuers. At this season, therefore, the courage of the male seems transferred to the female; she defends it against her less formidable opponents by force; and, when pursued by the hunter, she even offers herself, to mislead him from the principal object of her concern: she will fly before the hounds for many hours, and will then return to her young, whose life she has thus preserved at the hazard of her own.

THE FALLOW DEER *.

These animals associate in herds, which sometimes divide into two parties, and maintain obstinate battles for the possession of some favourite part of the park: each party has its leader, which is always the oldest and strongest of the flock. They attack in regular order of battle; they fight with courage, and mutually support each other;

* DESCRIPTION. The Fallow Deer is smaller than the Stag, of a brownish bay colour, whitish beneath, on the insides of the limbs, and beneath the tail. The horns, which are peculiar to the male, are very different from those of the stag: they are not branched, but are broader towards the upper part, and divided into processes down the outside. A simple antler rises from the base of each, and a similar one at some distance from the first.

SYNONYMS. *Cervus dama*. *Linnaeus*.—*Le Daim*. *Buffon*.—*Bingley's Mem. of Brit. Quad. Pl. 37*.

they retire, they rally, and seldom give up after one defeat. The combat is frequently renewed for many days together; till, after several defeats, the weaker party is obliged to give way, and leave the conquerors in possession of the object of their contention.

The Fallow Deer is easily tamed, and it feeds upon a variety of vegetables which the stag refuses. The female goes with young eight months, and produces one, sometimes two, and rarely three, at a time. These arrive at perfection in three years, and live to about the age of twenty.—When these animals drink, they plunge their noses, like some horses, very deep under water, and continue them in that situation for a considerable time; but, to obviate any inconvenience, says that observing naturalist, the Rev. Mr. White, in his Natural History of Selborne, they can open two vents, one at the inner corner of each eye, which have a communication with the nose. Here seems to be an extraordinary provision of nature worthy of our attention; for it appears as if these creatures would not be suffocated, though both their mouth and nostrils were stopped. This curious formation of the head may be of singular service to beasts of chase, by affording them free respiration: and no doubt these additional nostrils are thrown open when they are hard run.—To this account, which was addressed in a letter to Mr. Pennant, that gentleman has thus replied: “I was much surprised to find in the *Antelope* something analogous to what you mention as so remarkable in Deer. This animal also has a long slit beneath each eye, which can be opened and shut at pleasure. On holding an orange to one, the creature made the same use of those orifices as of his nostrils; applying them to the fruit, and seeming to smell it through them.”

THE ROE*.

The figure of the Roe is more elegant than that of either of the preceding kinds of British Deer: and its vivacity of disposition and gracefulness of motion are scarcely to be exceeded. When pursued by the hunter, the Roebuck exhibits infinite fleetness and address. It is scarcely possible fairly to hunt him down; since he can continue the course for many hours without exhaustion. He is, therefore, seldom to be caught, unless by surprise in the onset. When, however, he finds his first efforts to escape are likely to prove unsuccessful, he returns, and keeps the same track backward and forward, until, by various turnings and windings, he totally confounds the scent. Then, by one enormous bound, he is said to leap aside, lie flat on his belly among bushes or long grass, and suffer the dogs to pass close by his nose without offering to move.

In their wild state, the Roes generally love to range among the hills and in alpine valleys, near the borders of woods, into which they can fly for shelter and security whenever they are pursued by their foes. They do not, like the red and fallow deer, herd together in vast numbers; and are seldom to be found but in small flocks or families, consisting of the two parents and their offspring,

* DESCRIPTION. The height of the Roe at the shoulders is about two feet and a half. The horns are six or eight inches in length, strong, upright, rugged, and divided towards their extremity into three points or branches. The face is dark, and the spaces bordering on the mouth and eyes is black. In summer the hair is short and smooth, and of a bright reddish colour on the upper parts of the body; but in winter it is very long and thick. The chest, belly, and insides of the thighs are white.

SYNONYMS. *Cervus capreolus*. *Linnaeus*.—Le Chevreuil. *Buffon*.—Roe Deer. *Smellie*.—*Bingley's Mem. of Brit. Quad. Pl.* 38.

or, in the whole, of only from three to five individuals. They seldom or never allow strangers to intermix or associate with them. During the summer months they feed chiefly on grass, but they are likewise very fond of the *stone bramble**; and in winter, when the ground is covered with snow, they browse on the tender branches of the fir and birch trees.

The period of gestation in these animals is about five months and a half; and they produce their offspring generally towards the end of April, or the beginning of May. Previously to the time when a female is about to bring forth a new family, she drives off her former young ones, in order to provide habitations, and to form societies for themselves. She then retires to some secure place in the woods, concealed from the observation of foxes, and other predacious animals, and there deposits her progeny. These are two in number, usually a male and a female.

Roebucks are natives of woody and mountainous countries, in various parts both of Europe and Asia. In former ages they were very common in many districts of Britain; but the few that are now left are chiefly confined to the Scottish Highlands.

OF THE GIRAFFE TRIBE†.

In the present tribe, of which only a single species has been hitherto discovered, the horns are simple, covered with skin, blunt at the ends, and each terminated by a tuft of black hair.

This animal, although nearly allied both to the Deer

* *Rubus saxatilis*, of Linnaeus.

† In the lower jaw of the Giraffes there are eight broad and thin front-teeth, the outermost of which on each side, are each deeply divided into two lobes.

and Antelope tribes, is so remarkable in its structure, as, in an artificial system at least, to require a distinct classification.

THE GIRAFFE*.

This extremely singular quadruped is found only in the interior recesses of forests, or upon the wildest plains of Africa; whence it is never taken alive, except when young, and where it is seldom even seen by European travellers.

When they stand with their head and neck perfectly erect, many of these animals measure sixteen or eighteen feet in height. In their native wilds this singular form gives them, at a distance, the appearance of decayed trees; which is not a little aided by their colour, reddish white, marked with numerous large rusty spots.

They are of a mild and timid disposition. When pursued, they trot so fast that even a good horse is scarcely able to keep pace with them, and they continue their course for a long time without requiring rest. When they leap, they lift first the fore-legs, and then the hinder ones, in the manner of a horse whose fore-legs are tied together.

* DESCRIPTION. The head of the Giraffe bears a considerable resemblance to that of the horse, but is furnished with erect horns, (covered with a hairy skin,) about six inches long: these are blunt, as though cut off at the ends, and each tufted with a brush of coarse black hairs. The neck is very long, thin, and erect, and has on the ridge a short erect mane, which extends along the back, nearly to the origin of the tail. The shoulders are very deep, which has given rise to the vulgar error that the fore-legs are longer than the hinder ones, a circumstance that proves on examination to be by no means true.

SYNONYMS. *Camelopardalis Giraffa*. Linn.—*Camelopardalis*, or *Camelopard*. Var.—*Giraffe*. Buffon.—*Shaw's Gen. Zool.* ii. tab. 181, 182.—*Bew. Quad.* 118.

Their general position, except when grazing, is with the head and neck erect. They feed principally on the leaves of trees, and particularly on those of a peculiar species of mimosa, common in the country where they are found, to which the extreme length of their legs and neck admirably adapts them. When they feed from the ground, they are under the necessity of dividing their fore-legs to a considerable distance. In preparing to lie down, they kneel like the Camel.

It has been generally supposed that the Giraffe possessed neither the power nor the strength to defend itself against the attacks of other animals: this, however, seems to be unfounded; for M. le Vaillant has asserted, that "by its kicks it frequently wearies, discourages, and distances even the Lion." The utility of the horns appears to be hitherto unknown; this writer says, that they are not used as weapons of defence.

From divers accounts that have been left to us, this animal seems to have been known to the ancients. Heliodorus, the Greek bishop of Sicca, mentions it particularly in his time, and his description seems more original and authentic than those of most of the old writers.

"The ambassadors from the Axiomitæ (he says) brought presents to Hydaspes, and, among other things, there was an animal of a strange and wonderful species, about the size of a Camel, and marked upon the skin with florid spots. The hinder parts, from the loins were low, like those of a Lion; but the shoulders, fore-feet, and breast, were elevated above proportion to the other parts. The neck was small, and lengthened out from its large body like that of a swan. The head, in form, resembled a camel, but was, in size, about twice that of the Libyan struthium (ostrich,) and it rolled the eyes, which had a film over them, very frightfully.—It differs in its gait from every other land or water animal, waddling in a remark-

able manner. Each leg does not move alternately; but those on the right side move together, independently of the other, and those of the left in the same manner, so that each side is alternately elevated. It is so tractable as to be led by a small string fastened to the head, by which the keeper conducts it as he pleases, as if with the strongest chain. When this animal appeared, it struck the whole multitude with terror; and took its name from the principal parts of its body, being called by the people, extempore, Camelopardalis."

Ferdinand, a Jesuit, reports of one of these animals, that a man on horseback can pass upright under its belly: "*tam vastum animal, ut eques rectus sub ejus dorso transire possit!*"

A Giraffe appears to have been brought to Cairo in the year 1507; for Baumgarten says, that "on the 26th of October, looking out at a window he saw the Ziraphus, the tallest creature that he ever beheld. Its skin was all over white and brown, and its neck was almost two fathoms long. Its head was a cubit long, and its eyes looked brisk and lively; its breast was upright, and its back low; it would eat bread or fruits, or any thing else they reached to it."

In the year 1769, the governor of the Cape of Good Hope sent out some parties of men on inland discoveries, several of whom were absent eighteen months or two years. One of these parties crossed many mountains and plains, in one of which they found two Giraffes, an old and a young one. They were only able to seize the latter, and they took considerable care to convey it alive to Cape Town, but unfortunately it died before their arrival. It was, however, skinned, and the skin was afterwards sent to Europe, and lodged in the Cabinet of Natural History at Leyden.

The flesh of the young Giraffe is said to be good eating.

The Hottentots hunt the animal principally on account of its marrow, which, as a delicacy, they set a high value upon.

OF THE ANTELOPES IN GENERAL*.

The Antelopes are an elegant and active tribe of animals, inhabiting mountainous countries, where they bound among the rocks with so much lightness and elasticity, as to strike the spectator with astonishment. They browse like goats, and frequently feed on the tender shoots of trees. In disposition they are timid and restless, and nature has bestowed on them long and tendinous legs, peculiarly appropriated to their habits and manners of life. These, in some of the species, are so slender and brittle as to snap with a very trifling blow: the Arabs, taking advantage of this circumstance, catch them by throwing at them sticks, by which their legs are entangled and broken.

The eyes of the Antelope are the standard of perfection in the East: to say of a fine woman that "she has the eyes of an Antelope," is considered the highest compliment that can be paid to her.

THE CHAMOIS†.

These animals, inhabitants chiefly of the Alps and the Pyrenees, are found in flocks of from four to eighty, and

* The males are furnished with hollow horns, (seated on a bony core,) growing upwards, permanent, and annulated or wreathed. In both sexes there are eight front-teeth in the lower jaw, and no canine teeth either above or below.

Linnæus included the Antelopes in the Goat tribe, which they resemble in their horns, but they are now properly separated into an intermediate tribe betwixt the Goats and the Deer.

† DESCRIPTION. The Chamois is about the size of the common goat, and is of a dusky yellowish brown colour, with the cheeks,

even a hundred in number, dispersed upon the crags of the mountains. They do not feed indiscriminately, but only on the most delicate herbage they can find.

Their sight is very penetrating, and their senses of smelling and hearing remarkably acute. When the wind blows in a proper direction, they are said to be able to scent a man at the distance of a mile or upwards.—Their voice somewhat resembles that of a hoarse domestic goat: by means of this they are called together. When alarmed they adopt a different noise, and advertise each other by a kind of whistle. This the animal on watch continues as long as he can blow without taking breath; it is at first sharp, but flattens towards the conclusion. He then stops for a moment, looks round on all sides, and begins whistling afresh, which he continues from time to time. This is done with such force, that the rocks and forests re-echo the sound. His agitation is extreme. He strikes the earth with his feet. He leaps upon the highest stones he can find, again looks round, leaps from one place to another, and, when he discovers any thing seriously alarming, flies off. This whistling is performed through the nostrils, and consists of a strong blowing, similar to the sound which a man may make by fixing his tongue to the palate, with his teeth nearly shut, his lips open and somewhat extended, and blowing long, and with great force.

chin, throat, and belly of a yellowish white. The horns are slender, upright, about eight inches high, and hooked backwards at the tips: their colour is black. At the back part of the base of each horn there is said to be a tolerably large orifice in the skin, the nature and use of which do not yet seem to be clearly understood. The hair is rather long; and the tail short and of a blackish colour. The eyes are round, sparkling, and full of animation.

SYNONYMS. *Antilope rupicapra*. Linn.—Chamois Goat. Bewick.—Chamois. Buffon. Penn.—Shaw's Gen. Zool. ii. tab. 187.—Bew. Quad. p. 81.

The Chamois scramble among the inaccessible rocks of the country they inhabit, with great agility. They neither ascend nor descend perpendicularly, but always in an oblique direction. When descending, in particular, they will throw themselves down across a rock, which is nearly perpendicular, and of twenty or thirty feet in height, without having a single prop to support their feet. In descending, they strike their feet three or four times against the rock, till they arrive at a proper resting-place below. The spring of their tendons is so great, that, when leaping about among the precipices, one would almost imagine that they possessed wings instead of limbs.

They are hunted during the winter for their skins, which are very useful in manufactures; and for the flesh, which is good eating. Their chase is a laborious employment, since much care is necessary in order to get near them. They are shot with rifle-barrelled guns. They generally produce two young-ones at a birth; and are said to be long-lived.

THE NYL-GHAU *.

Although the Nyl-ghau is reported to be an exceedingly vicious creature, yet one of these animals which was in the

* DESCRIPTION. The height of the Nyl-ghau is somewhat more than four feet at the shoulder. The male is of a dark gray colour, and furnished with short blunt horns, that bend a little forward. There are white spots on the neck, between the fore-legs, on each side behind the shoulder joints, and on each fore-foot. The female, which is destitute of horns, is of a pale brown colour, with two white and three black bars on the fore-part of each foot, immediately above the hoofs. On the neck and part of the back of each is a short mane; and the fore-part of the throat has a long tuft of black hairs. The tail is long, and tufted at the end.

SYNONYMS. Antelope picta. *Linn.*—White-footed Antelope. *Penn.*—Nyl-ghau, which, in Persian, signifies a blue Cow or Bull.—Nil-gaut. *Buff.*—*Shaw's Gen. Zool.* ii. tab. 189.—*Bew. Quad.* p. 112.

possession of Dr. William Hunter, was quite tame and docile. It was pleased with every kind of familiarity, always licked the hand which either stroked it or gave it bread, and never once attempted to use its horns offensively. It seemed to have much dependence on the organs of smell, and snuffed keenly, and with considerable noise, whenever any person came within sight. It did the same when food or drink was brought to it; and was so easily offended with an uncommon smell, or was so cautious, that it would not taste bread that was offered with a hand that had touched oil of turpentine or spirits.

Its manner of fighting was very particular. This was observed at Lord Clive's, where two males were put into a little enclosure; and it was thus related by his lordship:—while they were at a considerable distance from each other they prepared for the attack by falling down upon their fore-knees, and when they were come within some yards they made a spring, and darted against each other.

At the time that two of them were in his stable, Dr. Hunter observed this particularity, that whenever any attempt was made on them they immediately fell down upon their fore-knees; and sometimes they would do so when he came before them; but as they never darted, he so little supposed this to be a hostile posture, that he rather supposed it expressive of a timid or obsequious humility.

The intrepidity and force with which they dart against any object, may be conceived from an anecdote that has been related of the finest and largest of these animals that has ever been seen in England. A labouring man, without knowing that the animal was near him, and therefore neither meaning to offend, nor suspecting the danger, came to the outside of the pales of the enclosure where it was kept: the Nyl-ghau, with the swiftness of lightning, darted against the wood-work with such violence, that he

shattered it to pieces, and broke off one of his horns close to the root. This violence was supposed to occasion his death, which happened not long after. From this it appears, that at certain seasons the animal is vicious and fierce, however gentle it may be at other times.

The first of this species that were brought into England were a male and female, sent from Bombay as a present to Lord Clive, in 1767. They bred every year. Afterwards two others were sent over and presented to the Queen by Mr. Sullivan. These were the two above described.

These animals are seldom found wild in any of the parts of India where we have settlements; those that are seen there having been brought from the distant interior parts of the country.—Bernier mentions them in his Travels from Delhi to the province of Cachemire. He describes the emperor's amusement of hunting them, and says that sometimes great numbers of them are killed. In several parts of the East they are looked upon as royal game, and are only hunted by the princes.

THE SCYTHIAN ANTELOPE*.

Several dreary and open deserts of the Continent, about Mount Caucasus, the Caspian Sea, and in Siberia, are frequented by these animals. They chiefly confine themselves to countries where there are salt springs; for

* DESCRIPTION. The Scythian Antelope is about the size of the Fallow Deer, and of a gray yellowish colour. The horns are annulated, about a foot long, and bent in the form of a lyre. The head is somewhat large, and the neck slender. The tail is about four inches long; naked below, clothed above with upright hairs, and ending in a tuft. The females are without horns.

SYNONYMS. Antelope Saiga. Linn.—Saiga. Buffon. Shaw.—Scythian Antelope. Penn.

on the plants that grow near them, and on salt, they principally feed. While feeding they frequently walk backwards and pluck the grass on each side. They are migratory, collecting in autumn in flocks, which consist of some thousands, and retiring into the southern deserts. In spring they divide again into little flocks, and return to the north.

It seldom happens that a whole flock lies down to rest all at the same time, but some are always stationed on watch. When these are tired, they give a kind of notice to such as have taken their rest, who instantly rise, and, as it were, relieve the sentinels of the preceding hours. By this means they often preserve themselves from the attacks of the Wolves, and the insidious stratagems of the hunters. They are so swift, that they are able for a while to outrun the fleetest horse or greyhound; yet such is their extreme timidity, and shortness of breath, that they are very soon caught. If they are but bitten by a dog, they instantly fall down, and will not again attempt to rise. In running they seem to incline on one side; and their fleetness is for a short time so astonishing, that their feet appear scarcely to touch the ground. In consequence of the heat of the sun, and the reflection of its rays from the sandy plains which they frequent, they become in summer almost blind; which is another cause of their destruction. In a wild state they seem to have no voice, but when brought up tame the young ones emit a sort of bleating, like sheep.

OF THE GOAT TRIBE IN GENERAL*.

The animals of the Goat kind live principally in retired mountainous situations, and have a rank and unpleasant

* The horns of these animals are hollow, rough, and compressed: they rise somewhat erect from the top of the head, and bend back-

smell, especially the males. Although very shy and timid in a wild state, they are easily rendered domestic, and even familiar. They differ from sheep, not only in the erect position of their horns, but also, when they fight, in rising on their hind-legs, and turning the head on one side to strike; for the rams run full tilt at each other, with their heads down.

THE COMMON GOAT*.

The Goat is a lively, playful animal, and easily familiarized; being sensible of caresses, and capable of a considerable degree of attachment. His disposition, however, is extremely inconstant, which is marked by the irregularity of all his actions: he walks, stops short, runs, leaps, approaches or retires, shows or conceals himself, or flies off as if actuated by mere caprice, and without any other cause than what arises from the eccentric vivacity of his temper. In some instances these animals, from their extreme familiarity, have become troublesome.—“In the year 1698, (says the Comte de Buffon) an English vessel having put into harbour at the island of Bonavista, two negroes went on board, and offered the captain as many goats as he chose to carry away. He expressed his surprise at this offer; when the negroes informed him that there were only twelve persons on the island, and that the Goats multiplied so fast as to become exceedingly troublesome; for, instead of being difficult to catch, they followed them about with an unpleasant degree of obstinacy, like other domestic animals.”

yards. In the lower jaw there are eight front-teeth, and in the upper jaw none; and no canine-teeth in either. The chin is bearded.

* SYNONYMS. *Capra Hircus* Linn.—Bouc et Chevre. Buff.—Domestic Goat. Penn.—Shaw's Gen. Zool. ii. tab. 199.—Bew. Quad. p. 77.

Goats love to feed on the tops of hills, and prefer the very elevated and rugged parts of mountains, finding sufficient nourishment in the most heathy and barren grounds. They are so active as to leap with ease, and the utmost security, among the most dreadful precipices; and even when two of them are yoked together, they will, as it were by mutual consent, take the most dangerous leaps together, and exert their efforts in such perfect unison as generally to accomplish these unhurt.

In mountainous countries they render considerable service to mankind, the flesh of the old ones being salted as winter provision, and the milk being used in many places for the making of cheese. The flesh of the Kid is highly palatable, being equal in flavour to the most delicate lamb. The animals require but little care or attention, easily providing for themselves proper and sufficient food.

M. Sonnini, in his edition of Buffon's Natural History, has given us a curious instance of the readiness with which the Goat will permit itself to be sucked by animals of a different kind, and far larger size, than itself. He assures us that he saw, in the year 1780, a foal that had lost its mother thus nourished by a Goat, which was placed on a barrel in order that the foal might suck with greater convenience. The foal followed its nurse to pasture, as it would have done its parent, and was attended with the greatest care by the Goat, which always called it back by her bleatings, when it wandered to any distance from her.

Goats are exceedingly numerous in South Guinea; and some of the negroes there have an odd notion that their strong and offensive smell was given them, as a punishment, for having requested of a certain female deity, that they might be allowed to anoint themselves with a kind of aromatic ointment which she used herself. Offended at the request, they say, she took a box of a most nauseous com-

pound, and rubbed their bodies with it; which had so powerful an effect as to cause the unpleasant smell thence produced to continue ever afterwards.

THE IBEX*.

These animals assemble in flocks, consisting sometimes of ten or fifteen, but generally of smaller numbers. They feed during the night in the highest woods; but at sun-rise they quit the woods, and ascend the mountains, feeding in their progress, till they have reached the most considerable heights. They are generally seen on the sides of the mountains which face the east or south, and lie down in the highest places and hottest exposures; but when the sun is declining, they again begin to feed and to descend towards the woods; whither they also retire when it is likely to snow, and where they always pass the winter.

The males that are six years old and upwards, haunt more elevated places than the females and younger ani-

* DESCRIPTION. The male Ibex is larger than the tame Goat, but resembles it much in appearance. The head, in proportion to the body, is small. The eyes are large, round, and brilliant. The horns are large, weighing sometimes sixteen or eighteen pounds, and measuring from two to four feet in length: they are flatted before, round behind, and divided by several transverse ridges; are bent backwards, and of a dusky brown colour. The beard is long, the legs slender, and the body short, thick, and strong. The tail is short, and naked beneath. The hair is long, and of a brownish or ash-colour, with a streak of black running along the back. The belly and thighs are of a delicate fawn-colour.—The female is about a third less than the male, and not so corpulent. Her colour is less tawny, and her horns not above eight inches long.

SYNONYMS. *Capra Ibex*. Linn.—Bouquetin, Bouc-estain, et Bouc-stein. Buffon.—Rock Goat, or Wild Goat. Smellie.—Stein Bock. Gesner.—Ibex. Penn.—Shaw's Gen. Zool. ii. tab. 198.—Bew. Quad. p. 80.

mals; and, as they advance in age, they become more inclined to solitude. They also become gradually hardened against the effects of extreme cold, and frequently live entirely alone.

The season for hunting the Ibex is during the months of August and September, when they are usually in good condition. None but the inhabitants of the mountains engage in this chase; for it not only requires a head that can bear to look down from the most tremendous heights without terror, address, and sure-footedness in the most difficult and dangerous passes, but also much strength, vigour, and activity.—Two or three hunters usually associate in the perilous occupation: they are armed with rifle-barrelled guns, and furnished with small bags of provisions; they erect a miserable hut of turf among the heights, where, without fire or covering, they pass the night; and, on waking in the morning, they not unfrequently find the entrance blocked up with snow three or four feet deep. Sometimes, in pursuit of this animal, being overtaken by darkness, amid crags and precipices, they are obliged to pass the whole night standing, and embraced together, in order to support each other, and to prevent themselves from sleeping.

As the animals ascend into the highest regions very early in the morning, it is necessary to gain the heights before them, otherwise they scent the hunters, and betake themselves to flight. It would then be in vain to follow them; for, when once they begin to escape, they never stop till they are entirely out of danger, and they will even sometimes run for ten or twelve leagues before they rest.

Being very strong, when they are close pressed they sometimes turn upon the incautious huntsman, and tumble him down the precipices, unless he has time to lie down, and let the animal pass over him. It is said also, that when they cannot otherwise avoid the hunter, they will

throw themselves down the steepest precipices, and fall on their horns in such a manner as to escape unhurt. Certain it is that they are often found with only one horn, the other being probably broken off in some fall. It is even pretended, that, to get out of the reach of huntsmen, they will hang by their horns over the precipices, by a projecting tree, and remain suspended till the danger is over.

The Ibex will mount a perpendicular rock of fifteen feet at three leaps, or rather at three successive bounds, of five feet each. It does not seem as if he found any footing on the rock, appearing to touch it merely to be repelled, like an elastic substance striking against a hard body. He is not supposed to take more than three successive leaps in this manner. If he is between two rocks which are near each other, and he wants to reach the top, he leaps from the side of one rock to that of the other, alternately, till he has attained the summit. The fore-legs being considerably shorter than the hinder ones, enables these animals to ascend with much more ease than to descend; and on this account it is that nothing but the severest weather will induce them to go down into the valleys.

Their voice is a short, sharp whistle, not unlike that of the chamois, but of less continuance: sometimes they make a kind of snort, by breathing hard through the nostrils, and when young they bleat.

The female exhibits the greatest tenderness and attachment for her offspring, and will defend it even against the attacks of wolves and eagles.

OF THE SHEEP IN GENERAL*.

Few animals render greater or more essential services to mankind than the Sheep. They supply us both with food

* The horns of Sheep are hollow, wrinkled, and perennial, bent backwards and outwards into a circular or spiral form, generally at

and clothing; and the wool alone of the common Sheep affords, in some countries, an astonishing source of industry and wealth. They are all harmless animals; and, in general, exceedingly shy and timid. Both in running and leaping they exhibit much less activity than the goats. They collect, in a wild state, into small flocks; and, though they do not altogether avoid the mountains, generally prefer dry open plains. They fight by butting against each other with their horns, and threaten by stamping on the ground with their feet. The period of gestation is about five months, and the females usually produce one, sometimes two, and rarely three young-ones at a birth.

There are, strictly speaking, only *two* different species of Sheep; but of the common Sheep there are no fewer than ten or twelve very distinct varieties.

THE COMMON SHEEP *.

Sheep are highly useful animals: they are also inoffensive and harmless, even to a proverb. When enslaved by man, they tremble at the voice of the shepherd or his dog; but, on the extensive mountains where they range almost without control, and where they seldom depend on the aid of the shepherd, they assume a very different mode of conduct. In these situations a Ram or a Wedder will boldly attack a single dog, and often come off victorious; but, when the danger is more alarming, they have recourse to the collected strength of the whole flock. On such

the sides of the head. The lower jaw has eight front-teeth: there are none in the upper jaw, nor any canine teeth in either.

* SYNONYMS. *Ovis Aries*. Linn.—*Brebis* et *Belier*. Buffon.—Ram and Common Sheep. Penn.—*Bingley's Mem. of Brit. Quad. Plates No. 40, Var. 1, 2, 3, 4, 5, and 6.*

occasions they draw up into a complete body, placing the females and young in the centre, whilst the males take the foremost ranks, keeping close by each other. Thus an armed front is presented on all quarters, that cannot easily be attacked without danger of destruction to the assailant. In this manner they wait with firmness the approach of the enemy: nor does their courage fail them in the moment of attack; for, when the aggressor advances within a few yards of the line, the Rams dart upon him with such impetuosity as to lay him dead at their feet, unless he save himself by timely flight. Against the attacks of single dogs, or foxes, when in this situation, they are perfectly secure.—A single Ram, regardless of danger, will often engage a bull; and, his forehead being much harder than that of any other animal, he seldom fails to conquer; for the bull, by lowering his head, receives the stroke of the Ram between his eyes, which usually brings him to the ground.

The Sheep, in the mountainous parts of Wales, where the liberty they enjoy is so great as to render them very wild, do not always collect into large flocks, but sometimes graze in parties of from eight to a dozen, of which one is stationed at a distance from the rest, to give notice of the approach of danger. When the sentinel observes any one advancing, at the distance of two or three hundred yards, he turns his face to the enemy, keeping a watchful eye upon his motions, allowing him to approach as near as eighty or a hundred yards; but, when the suspected foe manifests a design of coming nearer, the watchful guard alarms his comrades by a loud hiss or whistle, twice or thrice repeated, when the whole party instantly scour away with great agility, always seeking the steepest and most inaccessible parts of the mountains.

It is very singular that, in the Holms round Kirkwall, in the island of Mainland, one of the Orkneys, if a person about the lambing-time enters with a dog, the Ewes sud-

denly take fright, and through the influence of fear, as it is imagined, instantly drop down dead, as though their brain had been pierced with a musket-ball. Those that die in this manner are commonly said to have two, and sometimes three lambs within them.

No country produces finer Sheep than Great Britain; and their fleeces are large, and well adapted to the various purposes of clothing. Of these, the Sheep that are bred in Lincolnshire and the northern counties are most remarkable for their size, and the quantity of wool which they bear. In other parts of England they are generally smaller; and in the mountainous districts of Wales and Scotland they are very small.

Besides the fleece, there is scarcely any part of this animal but what is useful to mankind. The flesh is a delicate and wholesome food. The skin, dressed, forms different parts of our apparel; and is used for the covers of books. The entrails, properly prepared and twisted, serve for strings to various musical instruments. The bones, calcined, form materials for tests for the refiner. The milk is thicker than that of cows, and consequently yields a greater quantity of butter and cheese; and in some places it is even so rich, as not to produce the cheese without a mixture of water to make it part from the whey.

The fleeces of the Sheep above Cairo are very thick and long. The skins are used by most of the Egyptians for beds, since, besides their being very soft, it is said that in sleeping on them persons are secured from the stings of scorpions, which never venture upon wool lest they should be entangled in it. These fleeces are (as at present is done in some parts of England) taken off entire; and one of them, long and broad enough to serve a man for a mattress, was sold as high as twenty shillings sterling, whilst the whole animal alive, and without its fleece, only brought about six shillings.

The disposition and actions of these useful creatures, while washing and shearing, Thomson has beautifully described.

Urg'd to the giddy brink, much is the toil,
The clamour much of men, and boys, and dogs,
Ere the soft, fearful people to the flood
Commit their woolly sides—

—— Then, as they spread
Their swelling treasures to the sunny ray,
Inly disturb'd, and wond'ring what this wild
Outrageous tumult means, their loud complaints
The country fill; and toss'd from rock to rock,
Incessant bleatings run around the hills.
At last of snowy white, the gather'd flocks
Are in the wattled pen innumeros press'd,
Head above head; and rang'd in lusty rows
The shepherds sit, and whet the sounding shears.
Behold, where bound, and of its robe bereft,
By needy man, that all-depending lord,
How meek, how patient, the mild creature lies!
What softness in his melancholy face,
What dumb complaining innocence appears!

There are in the voices of all animals innumerable tones, perfectly understood by each other, and entirely beyond our powers of discrimination. It should seem somewhat remarkable that the Ewe can always distinguish her own Lamb, and the Lamb its mother, even in the largest flocks. And at the time of shearing, when the Ewes are shut up in a pen from the Lambs, and turned loose one by one as they are shorn, it is pleasing to see the meeting between each mother and her young-one. The Ewe immediately bleats to call her Lamb, which instantly obeys the well-known voice, and, returning to the bleat, comes skipping to its dam. At first it is startled by her new appearance, and approaches her with some degree of fear, till it has corrected the sense of sight by those of smelling and hearing.

Various sorts of insects infest the Sheep, but that which is the most teasing to them is a species of gadfly*, that deposits its eggs on the inner margins of their nostrils, occasioning them to shake their heads violently, and thrust their noses into the dust or gravel. The larvæ, or grubs, when hatched, crawl up into the frontal sinuses, and, when full fed and ready to undergo their change, are again discharged through the nostrils. The French shepherds make a common practice of easing the Sheep by trepanning them, and taking out the maggot: this is sometimes practised in England, but not always with success. Sheep have, besides this, a kind of tick amongst their wool†, and are subject to worms in the liver‡.

The Icelandic Sheep §.

The Icelandic or many-horned Sheep differ from ours in several particulars. They have straight, upright ears, a small tail, and sometimes four or five horns.

In a few instances these animals are kept in stables during winter; but by far the majority of them are left to seek their own food in the open plains. They are particularly fond of the scurvy-grass||, which renders them excessively fat.

In stormy weather they hide themselves in caves from the fury of the elements; but when these retreats are not to be found, they collect together during the heavy falls of snow, and place their heads near each other, with their

* *Oestrus ovis* of Linnæus.

† *Acarus reduvius* of Linnæus.

‡ *Fasciola hepatica* of Linnæus.

§ SYNONYMS. *Ovis Aries polycerata*: Linn.—Many-horned Sheep, and Icelandic Sheep. Penn.—Bew. Quad. p. 72.

|| *Cochlearia* of Linnæus.

muzzles downward towards the ground. This not only prevents their being so easily buried under the snow, but renders them much easier to be discovered by the owner. In this situation they will sometimes remain several days; and there have been many instances of hunger forcing them to gnaw each other's wool, which, forming into hard balls in their stomachs, often destroys them. After the storm has ceased, they are sought for and disengaged.

A good Icelandic Sheep will yield from two to six quarts of milk a day: and of this the inhabitants make butter and cheese. But the principal profit arising from them is in the wool, which is not shorn, but remains on till the end of May, when it loosens of itself, and is stripped off at once, like a skin. The whole body is by this time covered again with new wool, which is short, and extremely fine. It continues to grow during the summer, and becomes towards autumn of a coarser texture, very shaggy, and somewhat resembling camel's hair. This covering enables the Sheep to support the rigours of winter; but if, after they have lost their fleece, the spring proves wet, the inhabitants sew a piece of coarse cloth round the stomachs of the weakest, to guard them against its ill effects.

The Broad-tailed Sheep.*

In their general appearance, with the exception of the tail, these animals do not much differ from the European Sheep. The tail, however, is of such size, as sometimes to weigh nearly one third of the whole carcase. It is entirely composed of a substance betwixt marrow and fat, which

SYNONYMS. *Ovis Aries laticaudata*. Linn.—Mouton de Barbarie, Mouton d'Arabie. Buffon—Tunis Sheep, and Barbary Sheep. Smellie.—Broad-tail'd Sheep. Penn.

serves for culinary purposes instead of butter; and, being cut into small pieces, makes an ingredient in various dishes. When the animal is young, this is little inferior to the best marrow.

Wild rove the flocks, no burdening fleece they bear,
In fervid climes: nature gives nought in vain.
Carmenian wool on the broad tail alone
Resplendent swells, enormous in its growth:
As the sleek Ram from green to green removes,
On aiding wheels his heavy pride he draws,
And glad resigns it for the hatter's use.

Sheep having tails of the above extraordinary size are usually kept up in yards, so as to be in little danger of hurting their tails as they walk about; but in the fields, in order to prevent injury from the bushes, the shepherds, in several parts of Syria, fix a thin piece of board on the under part, (which is not, like the rest, covered with wool,) and to this board are sometimes added small wheels: whence, with a little exaggeration, we have the story of the Oriental Sheep having carts to carry their tails.

Their fleeces are exceedingly fine, long, and beautiful; and, in Thibet, are worked into shawls, which form a considerable source of wealth to the inhabitants. These Sheep are found in the neighbourhood of Aleppo; in Barbary, Ethiopia, and some others of the eastern countries.

THE ARGALI*.

The Argali abound in Kamtschatka, where they supply the inhabitants both with food and clothing. The flesh, and particularly the fat, the Kamtschadales esteem as diet

* DESCRIPTION. The Argali, or wild Sheep, have large horns, arched semicircularly backwards, and divergent at their tips:

fit for the gods; and there is no labour which they will not undergo in the chase of these animals. Whole families abandon their habitations in the spring of the year, and occupy the entire summer in this employment, amidst the steepest and most rocky mountains, fearless of the dreadful precipices which often overwhelm the eager sportsman.

These animals are shot with guns or with arrows; sometimes with cross-bows placed in their paths, and discharged by their treading on a string which pulls the fatal trigger. They are sometimes chased by dogs, but their fleetness leaves these far in the rear. The purpose, however, is answered: they are driven to the heights, where they often stand and view, as it were with contempt, the dogs below; while their attention is thus occupied, the hunter creeps cautiously within reach, and brings them down with his gun.

In some of the other northern countries, a great multitude of horses and dogs are collected together, and a sudden attempt is made to surround them. Great caution is necessary; for, if the animals perceive the approach of their enemies, either by their sight or smell, they instantly take to flight, and secure themselves among the lofty and inaccessible summits of the mountains,

The Kamtschadales do not shear these Sheep, but leave

wrinkled on their upper surface, and flatted beneath. On the neck are two pendent hairy dewlaps. This Sheep is about the size of a small deer, and in summer is of a brownish ash-colour, mixed with gray on the upper parts, and whitish beneath. In winter the former changes to a rusty, and the latter to a whitish, gray; and the hair becomes considerably longer. The horns of some of the old Rams are said to be of such an enormous size, as to weigh fifteen or sixteen pounds each.

SYNONYMS. *Ovis Ammon*. *Linnaeus*.—*Mouflon*. *Buffon*.—Wild Sheep, and Siberian Goat. *Penn.*—*Shaw's Gen. Zool.* ii. tab. 201.—*Bew. Quad.* p. 74.

the wool on till the end of May, when it becomes loose, and is stripped entirely off in one fleece.

Besides Kamtschatka, the Argali are found in all the alpine regions of the centre of Asia; and on the highest mountains of Barbary, Corsica, and Greece.

OF OXEN IN GENERAL*.

The animals of this tribe are seldom found except in flat pastures, entirely avoiding mountains and woods, for which their form is extremely ill calculated, as they are much more large and clumsy than most other animals. Their services to mankind are more considerable than those even of the sheep; for, in addition to the qualifications of these animals, they are employed as beasts of draught and burthen. Their voice is called *lowing* and *bellowing*. They fight by pushing with their horns, and kicking with their feet.

There are about *nine* different species, many of them, however, so nearly connected, as to render it difficult to assign a proper distinction between species and variety.

THE COMMON OX†.

From this animal are derived the many different varieties of common cattle found in various parts both of the old and new continent. In its wild and native state it is distinguished by its size, and the great depth and shagginess of its hair, which about the head, neck, and shoulders, is

* In the Oxen the horns are concave, smooth, turned outward, and forward, in a semilunar form. In the lower jaw there are eight front-teeth; there are none in the upper, and no tusks in either jaw.

† SYNONYMS. *Bos taurus*, *Linnaeus*.—*Le Bœuf*, *Buffon*.—*Bingley's Mem. of Brit. Quad. Plates No. 41, Var. 1, 2, 3, 4, 5, 6, and 7.*

sometimes of such length as almost to touch the ground. His horns are rather short, sharp-pointed, exceedingly strong, and stand distant from their bases. His colour is generally either a dark or a yellowish brown. His limbs are strong, and his whole aspect savage and gloomy. He grows to so enormous a size as sometimes to weigh sixteen hundred or two thousand pounds, and the strongest man cannot lift the hide of one of these animals from the ground. Wild Oxen are found in the marshy forests of Poland, among the Carpathian Mountains, in Lithuania, and also in several parts of Asia.

In Lord Tankerville's park, at Chillingham, near Berwick-upon-Tweed, there is yet left a breed of wild cattle, probably the only remains of the true and genuine breed of that species at present to be found in this kingdom*.

At the first appearance of any person near them, these animals set off in full gallop, and, at the distance of two or three hundred yards, 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, and look wildly at the object of their surprise; but, on the least motion, they all turn round, and gallop off again with equal speed, but not to the same distance, forming a smaller 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 gallop off. This they do several times, shortening their distance, and advancing nearer till they come

* Their colour is invariably white, with the muzzle black, and the whole inside of the ear, and about one-third part of the outside, from the tip downwards, red. Their horns are white, with black tips, very fine, and bent downwards. The weight of the Oxen is from thirty-five to forty-five stone, and of the Cows, from twenty-five to thirty-five, 14lb. to the stone.

within a few yards, when most people think it prudent to leave them, not choosing to provoke them further, as it is probable that in a few turns more they would make an attack.

The mode of killing them was, perhaps, the only modern remains of the grandeur of antient hunting. On notice being given that a wild Bull would be killed on a certain day, the inhabitants of the neighbourhood assembled, sometimes to the number of a hundred horsemen, and four or five hundred foot, all armed with guns or other weapons. Those on foot stood upon the walls, or got into trees, while the horsemen rode off a Bull from the rest of the herd, until he stood at bay, when they dismounted and fired. At some of these huntings twenty or thirty shots have been fired before the animal was subdued. On such occasions the bleeding victim grew desperately furious, from the smarting of his wounds, and the shouts of savage joy echoing from every side. But from the number of accidents which happened, this dangerous mode has been little practised of late years, the park-keeper alone generally killing them with a rifle-gun at one shot.

When the Cows calve, they hide their young ones for a week or ten days in some sequestered retreat, and go to suckle them two or three times a day. If any persons come near the Calves, these clap their heads close to the ground, and lie like a hare in form, to hide themselves. This seems a proof of their native wildness, and it is corroborated by the following circumstance that happened to Dr. Fuller, the author of the History of Berwick, who found a hidden Calf two days old, very lean and weak. On his stroking its head it got up, pawed two or three times like an old Bull, bellowed very loud, went 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 being aware of its intentions, he moved aside, and it missed its

aim, fell, and was so very weak, that though it made several efforts it was not able to rise. It, however, had done enough; the whole herd was alarmed, and, coming to its rescue, obliged him to retire.

When any one of them happens to be wounded, or is grown weak and feeble through age or sickness, the rest of the herd set upon and gore it to death.

There is scarcely any part of the Ox that is not of some use to mankind. Boxes, combs, knife-handles, and drinking vessels, are made of the horns. The horns, when softened with boiling water, become so pliable as to be formed into transparent plates for lanterns; an invention ascribed to King Alfred, who is said to have first used them to preserve his candle-time measurers from the wind. The dung of these animals is useful as manure. Glue is made of the cartilages, gristles, and the finer pieces of cuttings and parings of the hides, boiled in water till they become gelatinous and the parts sufficiently dissolved, and then dried. The bone is a cheap substitute, in many instances, for ivory. The thinnest of the Calves-skins are manufactured into vellum. The blood is used as the basis of Prussian-blue. Sadlers and others use a fine sort of thread, prepared from the sinews, which is much stronger than any other equally fine. The hair is valuable in various manufactures; and the suet, fat, and tallow, for candles. The utility of the milk and cream is well known.

From the circumstance of these animals furnishing the Gentoos with milk, butter, and cheese, their favourite food, they bear for them a superstitious veneration, founded thus principally in gratitude. There is scarcely a Gentoo to be found that would not, were he under a forced option, prefer sacrificing his parents or children to the slaying of a Bull or Cow. Believing fully in the doctrine of transmigration, they are also alarmed at the idea of injuring the souls of those of their fellow-creatures that have taken

their abode in these animal cases. This also tends to restrain them from destroying, designedly, any of the brute creation, and to prevent them from dispossessing, by violence, any being of that life which God alone can give; and they respect it in the flea equally with the elephant.

I cannot conclude the present article without a remark on the barbarous mode of slaughtering Oxen adopted in this country. Drawn with his horns to a ring, this wretched animal has his head sometimes shattered to pieces by the butcher's axe before he falls. Three or four blows are often insufficient to deprive him of sensation, and it not unfrequently happens, that after the first or second blow he breaks loose from his murderers, and has to be seized and tied up afresh. Those who have heard his groans and bellowings on these occasions, will easily be convinced of the agony he undergoes. The Portuguese slay their Oxen by passing a sharp knife through the vertebræ of the neck into the spine, which causes instant death. Lord Somerville took with him to Lisbon a person to be instructed in this method of "laying down cattle," as it is termed there, in the hopes that our slaughtermen might be induced to adopt the same mode; but, with unheard of stupidity and prejudice, they have hitherto invariably refused to adopt it; nor will they probably ever do it, unless compelled by an act of the legislature.

THE ARNEE*.

This is by far the largest animal of the cattle tribe that has hitherto been discovered, its usual height being from

* DESCRIPTION. The horns of the Arnee are long, erect, and semilunar, flattened and annularly wrinkled, with smooth, round, approaching points. A British officer, who met with one in the woods in the country above Bengal, says, that its form seemed to

twelve to fifteen feet. It is an inhabitant of various parts of India north of Bengal, and is very rarely seen within the European settlements.

A herd of Arnees was not many years ago observed in one of the inland provinces of Hindostan by a body of British troops, and they excited no small alarm in the whole corps. The herd no sooner perceived the body of men advancing, than they lifted up their heads, ran off to a small distance, then wheeled about, seemingly to reconnoitre; and, advancing in a body as if to attack, had such a formidable and warlike appearance, and withal of a kind so entirely new, that no person present could form an idea what it might mean. Their horns, each at least two feet long, rose to a great height in the air, and did not permit the troops to see distinctly whether men were mounted on the animals or not; but in a short time they galloped off and disappeared.

In the year 1790 or 1791, the Hawkesbury East India-man, on her voyage outward, whilst she was going up the river Ganges, and at the distance of about fifty miles below Calcutta, fell in with one of these animals floating in the river, still alive. A boat was immediately hoisted out in order to chase it. A noose was soon thrown across its horns; and the Arnee was then dragged to the ship's side, hoisted on deck, killed, cut up, and afterwards dressed for the ship's company, who found its flesh to be a most delicate food. The animal was as big as an immensely large ox, though it was believed, from its appearance, to be not more than two years old. When cut up, it was

partake of those of a horse, bull, and deer; and that it was a very bold and daring animal.

SYNONYMS. *Bos Arnee*. *Shaw*.—*Arnee*, and *Bos Arnee*. *Kerr*, who appears to have been the first naturalist that has described this animal.—*Shaw's Gen. Zool. Pl.* 210.

found to weigh three hundred and sixty pounds per quarter, making one thousand four hundred and forty pounds weight of beef in the whole carcase. There are reasons for supposing that it might have been fatted to thrice this weight; so that the four quarters alone would have amounted to two tons; an enormous weight for an animal of the present tribe.

The first officer of the Hawkesbury at the time was Mr. William Haig. He was so much struck with the magnitude of the animal, and the singularity of its appearance in other respects, that he caused the horns and the bones of the head to be preserved, and sent to his brother, Mr. James Haig, of Edinburgh, in whose possession they still remain.

On enquiry being made, by Dr. Anderson, of gentlemen who had been in India, respecting cattle of a large size in that part of the world, some of them mentioned animals of this kind, which they said were kept by the native princes chiefly for parade, (in the same manner as elephants,) under the name of *fighting bullocks*. A convincing proof that these animals are kept by the princes, and probably for parade, is obtained from an Indian painting, in which three of them are very distinctly delineated. This painting represents one of those entertainments that are given by the Indian princes for the amusement of their subjects, similar to the fights that were exhibited for the same purpose on the arena at Rome. An elephant is represented as contending against two tigers; and among the number of objects assembled are three of these animals, as if waiting apart, each under the guidance of a leader, who is seated upon his back, having hold of a bridle in the animal's mouth. This painting is the property of Gilbert Innes, Esq. of Stow, near Edinburgh.

THE AMERICAN BISON*.

In the interior regions of North America immense herds of these animals are frequently seen. They feed in the open savannahs morning and evening; and retire, during the sultry parts of the day, to rest near shady rivulets and streams of water, frequently leaving so deep an impression of their feet in the moist land, (from the great weight of their bodies,) as to be thus traced and shot by the artful Indians. In this undertaking, however, it is necessary that the men should be particularly careful, since, when only wounded, the animals become excessively furious. The hunters go against the wind, as the faculty of smell in the Bisons is so exquisite, that the moment they get scent of their enemy they retire with the utmost precipitation. With a favourable wind the men approach very near, since the animals are frequently almost blinded by the hair that covers their eyes. In taking aim they direct their piece to the hollow of the shoulder, by which means they generally bring them down at one shot. If they do not fall, they immediately run upon their enemy, and with their horns and hoofs, as offensive weapons, tear him in pieces, and trample him into the earth.

They are so amazingly strong, that when they fly through the woods from a pursuer, they frequently brush down

* DESCRIPTION. The American Bison has short rounded horns, pointing outwards. It is covered, in many parts, with long shaggy hair, and has a high protuberance on the shoulders. The fore-parts of the body are excessively thick and strong; and the hinder parts are comparatively very slender.

SYNONYMS. *Bos Americanus*. Linn.—Bison d'Amerique. Buff.—American Bison. Smellie.—Buffalo. Lawson. Catesby.—American Buffalo. Hearne.—American Ox, and American Bison. Penn.—Shaw's Gen. Zool. ii. tab. 206, 207.—Bew. Quad. p. 43.

trees as thick as a man's arm; and, be the snow ever so deep, such is their strength and agility, that they are able to plunge through it much faster than the swiftest Indian can run in snow-shoes. "To this (says Mr. Hearne) I have been an eye-witness many times, and once had the vanity to think that I could have kept pace with them; but though I was at that time celebrated for being particularly fleet in snow-shoes, I soon found that I was no match for the Bisons, notwithstanding they were then plunging through such deep snow, that their bellies made a trench as large as if many heavy sacks had been hauled through it.

In Canada the hunting of the Bison is a common employment of the natives. They draw up in a large square, and commence their operations by setting fire to the grass, which, at certain seasons, is very long and dry. As the fire goes on they advance, closing their ranks as they proceed. The animals, alarmed by the light, gallop confusedly about till they are hemmed in so close, that frequently not a single beast is able to escape.

In Louisiana the men mount on horseback, each with a sharp, crescent-pointed spear in his hand.—They approach with the wind, and, as soon as the animals smell them, they instantly seek to escape; but the sight of the horses moderates their fear, and the majority of them, are, at certain times of the year, so fat and unwieldy, as easily to be enticed to slacken their pace. As soon as the men overtake them, they endeavour to strike the crescent just above the ham, in such manner as to cut through the tendons, and render them afterwards an easy prey.

The hunting of these animals is also common in several parts of South America. It commences with a sort of festivity, and ends in an entertainment, in which one of their carcasses supplies the only ingredient. As soon as a herd of cattle is seen on the plain, the most fleet and active

of the horsemen prepare to attack them, and, descending in the form of a widely-extended crescent, hunt them in all directions. After a while they become so jaded and weary, that they seem ready to sink under their fatigue; but the hunters, still urging them to flight by their loud cries, drive them at last from the field. Such as are unable to exert the necessary speed for escape are slaughtered.

The sagacity which the animals exhibit in defending themselves against the attacks of Wolves is admirable. When they scent the approach of a drove of those ravenous creatures, the herd throws itself into the form of a circle, having the weakest in the middle, and the strongest ranged on the outside, thus presenting an impenetrable front of horns.—When, however, they are taken by surprise, and have recourse to flight, numbers of those that are fattest and most weak infallibly perish.

“There is (says Mr. Turner, who resided long in America) a singular and affecting trait in the character of this animal when a calf. Whenever a Cow Bison falls by the murdering hand of the hunters, and happens to have a calf, the helpless young-one, far from attempting to escape, stays by its fallen dam, with signs expressive of strong natural affection. The dam thus secured, the hunter makes no attempt on the calf, (knowing that to be unnecessary,) but proceeds to cut up the carcase: then, laying it on his horse, he returns home followed by the poor calf, which thus instinctively attends the remains of its dam. I have seen a single hunter ride into the town of Cincinnati, between the Miames, followed in this manner by three calves, all of which had just lost their dams by this cruel hunter.”

This gentleman is of opinion that the Bison is superior even to our domestic cattle for the purposes of husbandry, and has expressed a wish to see this animal domesticated on the English farms. He informs us that a farmer, on the great Kenhawa, broke a young Bison to the plough;

and, having yoked it with a Steer taken from his tame cattle, it performed to admiration. Mr. Turner inquired of the man whether he had any fault to find with the Bison, and was answered that there was but one objection to it; the step of the Bison was too quick for that of the tame Steer. Till this experiment, the man had laboured under one of those clouds of prejudice but too common among farmers.—He had taken the Ox of his father's farm as the unit whence all his calculations were to be made and his conclusions drawn; it was his unchangeable standard of excellence, whether applied to the plough or the draught. No sooner was Mr. Turner's observation of the probable utility of the Bison uttered, than conviction flashed on his mind, and he acknowledged the superiority of the animal. But there is another property in which the Bison far surpasses the ox, and this is in his strength. "Judging from the extraordinary size of his bones, and the depth and formation of his chest, (continues this gentleman,) I should not think it unreasonable to assign nearly a double portion of strength to this powerful inhabitant of the forest. Reclaim him, and you gain a capital quadruped both for the draught and for the plough: his activity peculiarly fits him for the latter in preference to the ox."

The uses of the Bison when dead are various. Powder-flasks are made of the horns. The skins form an excellent buff leather, and, when dressed with the hair on, serve the Indians for clothes and shoes. The Europeans of Louisiana use them for blankets, and find them light, warm, and soft. The flesh is used as food, and the bunch on the shoulders is esteemed a great delicacy. The bulls, when fat, frequently yield each a hundred and fifty pounds weight of tallow, which forms a considerable article of commerce. The hair is spun into gloves, stockings, and garters, that are very strong, and look as well as those

made of the finest sheep's wool. Governor Pownal assures us, that there may be manufactured from it a most luxurious kind of clothing.

THE BUFFALO*.

Buffaloes are natives of the warmer parts of India and Africa, but have been introduced into some of the countries of Europe, where they are now perfectly naturalized. In Italy they constitute an essential part both of the riches and food of the poor. They are there employed in agriculture; and butter and cheese are made from their milk. These animals are very common in Western Hindostan. They are fond of wallowing in mud, and will swim over the broadest rivers. During inundations they are frequently observed to dive to the depth of ten or twelve feet, in order to force up with their horns the aquatic plants, which they eat while swimming.

In many parts of the East, as well as in Italy, the Buffaloes are domesticated. It is said to be a singular sight to observe, morning and evening, large herds of them cross

* DESCRIPTION. The Buffalo, in its general form, has a great resemblance to the common Ox, but it differs from it in its horns, and in some particulars of its internal structure. It is larger than the Ox; the head is also bigger in proportion, the forehead higher, and the muzzle longer. The horns are large, and of a compressed form, with the exterior edge sharp: they are straight for a considerable length from their base, and then bend slightly upward. The general colour of the animal is blackish, except the forehead and the tip of the tail, which are of a dusky white. The hunch is not, as many have supposed it, a large fleshy lump, but is occasioned by the bones that form the withers being continued to a greater length than in most other animals.

SYNONYMS. *Bos Bubalus*. *Linn.*—*Buffle*, *Buff.*—*Buffalo*. *Penn.*

the Tigris, and Euphrates. They proceed, all wedged against each other, the herdsman riding on one of them; sometimes standing upright, and sometimes conching down; and, if any of the exterior ones are out of order, stepping lightly from back to back, to drive them along.

A singular circumstance relative to these animals is recorded by the navigators who completed the voyage to the Pacific Ocean, begun by Captain Cook. When at Pulo Condore they procured eight Buffaloes, which were to be conducted to the ships by ropes put through their nostrils and round their horns; but when these were brought within sight of the ship's people, they became so furious, that some of them tore out the cartilage of their nostrils, and set themselves at liberty; and others broke down the shrubs to which it was frequently found necessary to fasten them. All attempts to get them on board would have proved fruitless, had it not been for some children whom the animals would suffer to approach them, and by whose puerile management their rage was quickly appeased: and, when the animals were brought to the beach, it was by their assistance in twisting ropes about their legs, that the men were enabled to throw them down, and by that means get them into the boats. And what appears to have been no less singular than this circumstance was, that they had not been a day on board before they became perfectly gentle.

The skin and horns of the Buffalo are its most valuable parts; the former being extremely strong and durable, and consequently well adapted for various purposes in which a strong leather is required. The latter have a fine grain, are strong, and bear a good polish; and are, therefore, much valued by cutlers and other artificers.—The flesh is said to be excellent eating; and it is so entirely free from any disagreeable smell or taste, that it resembles beef as nearly as possible. The flesh of the Cows, when some time

gone with young, is esteemed the finest; and the young Calves are reckoned by the Americans the greatest possible delicacy.

THE CAPE BUFFALO*.

The savage disposition, large size, and enormous strength of these animals, render them too well known in all the countries which they inhabit.—In the plains of Caffraria they are so common, that it is by no means unusual to see a hundred and fifty, or two hundred of them in a herd. They generally retire to the thickets and woods in the day-time, and at night go out into the plains to graze.—Treacherous in the extreme, they frequently conceal themselves among the trees, and there stand lurking till some unfortunate passenger comes by, when the animal at once rushes out into the road, and attacks the traveller, who has no chance to escape but by climbing up a tree, if he is fortunate enough to be near one. Flight is of no avail: he is speedily overtaken by the furious beast, who, not contented with throwing him down and killing him, stands over him even for a long time afterwards, trampling him with his hoofs, and crushing him with his knees; and not only mangles and tears the body to pieces with his horns and teeth, but likewise strips off the skin, by licking it

* DESCRIPTION. The fore-parts of this animal are covered with long, coarse, and black hair. The horns are thick, and rugged at the base, sometimes measuring three feet in length, and lying so flat as to cover almost all the top of the head. The ears are large and slouching. The body and limbs are very thick and muscular; and the animal is above eight feet long and six in height. The head hangs down, and bears a most fierce and malevolent aspect.

SYNONYMS. *Bos Cafer*. Linn.—Cape Ox. Penn. Kerr.—Cape Buffalo. Sparrman.—African Buffalo. Church.—Buffalo. Bewick.—Bew. Quad. p. 47.

with his tongue. Nor does he perform all this at once, but often retires to some distance from the body, and returns with savage ferocity to gratify afresh his cruel inclination.

As Professor Thunberg was travelling in Caffraria, he and his companions had just entered a wood when they discovered a large old male Buffalo, lying quite alone, in a spot, that for the space of a few square yards, was free from bushes. The animal no sooner observed the guide, who went first, than, with a horrible roar, he rushed upon him. The fellow turned his horse short round behind a large tree, and the Buffalo rushed forward to the next man, and gored his horse so dreadfully in the belly, that it died soon after. These two climbed into trees, and the furious animal made his way towards the rest, of whom the Professor was one, who were approaching, but at some distance. A horse without a rider was in the front; as soon as the Buffalo saw him he became more outrageous than before, and attacked him with such fury, that he not only drove his horns into the horse's breast, but even out again through the very saddle. This horse was thrown to the ground with such excessive violence, that he instantly died, and many of his bones were found broken. Just at this moment the Professor happened to come up, but from the narrowness of the path, having no room to turn round, he was glad to abandon his horse, and take refuge in a tree. The Buffalo, however, had finished; for after the destruction of the second horse he turned suddenly round, and galloped away.

Some time after this the Professor and his party espied an extremely large herd of Buffaloes grazing on a plain. Being now sufficiently apprised of the disposition of these animals, and knowing that they would not attack any person in the open plains, they approached within forty paces, and fired amongst them. The whole troop, not-

withstanding the individual intrepidity of the animals, surprised by the sudden flash and report, turned about, and made off towards the woods. The wounded Buffaloes separated from the rest of the herd from inability to keep pace with them. Amongst these was an old bull Buffalo, which ran with fury towards the party. They knew that, from the situation of the eyes of these animals, they could see in scarcely any other direction than straight forward; and that in an open plain, if a man that was pursued darted out of the course and threw himself flat on the ground, they would gallop forward to a considerable distance before they missed him. These circumstances prevented their suffering any material alarm. The animal, from this contrivance, passed close by them, and fell before he appeared to have discovered his error. Such, however, was his strength, that notwithstanding the ball had entered his chest, and penetrated nearly through his body, he ran at full speed several hundred paces before he fell.

The Cape Buffalo is frequently hunted both by Europeans and by the natives of South Africa. In Caffraria he is generally killed by means of javelins, which the inhabitants use with considerable dexterity. When a Caffre has discovered the place where several Buffaloes are collected together, he blows a pipe, made of the thigh-bone of a sheep, which is heard at a great distance. The moment his comrades hear this notice they run to the spot, and surrounding the animals, which they take care to approach by degrees lest they should alarm them, throw their javelins at them. This is generally done with so sure an aim, that out of eight or twelve it is very rarely that a single one escapes. It sometimes happens, however, that while the Buffaloes are running off, some one of the hunters who stands in the way is tossed and killed; but this is a circumstance not much regarded by the Caffrarians.

When the chase is ended, each one cuts off and takes away his share of the game.

Some Europeans at the Cape once chased a Buffalo, and having driven him into a narrow place, he turned round, and instantly pushed at one of his pursuers, who had on a red waistcoat. The man, to save his life, ran to the water, plunged in, and swam off: the animal followed him so closely, that the poor fellow had no alternative but that of diving. He dipped overhead, and the Buffalo, losing sight of him, swam on towards the opposite shore, three miles distant, and, as was supposed, would have reached it, had he not been shot by a gun from a ship lying at a little distance. The skin was presented to the Governor of the Cape, who had it stuffed, and placed it among his collection of curiosities.

Like the Hog, this animal is fond of wallowing in the mire. His flesh is lean, but juicy, and of a high flavour. The hide is so thick and tough that targets, musquet-proof, are formed of it; and even while the animal is alive, it is said to be in many parts impenetrable to a leaden musket-ball: balls hardened with a mixture of tin are, therefore, always used, and even these are often flattened by the resistance. Of the skin the strongest and best thongs for harness are made. The Hottentots, who never put themselves to any great trouble in dressing their victuals, cut the Buffaloes' flesh into slices, and then smoke, and at the same time half broil it, over a few coals. They also frequently eat it in a state of putrefaction. They dress the hides by stretching them on the ground with stakes, afterwards strewing them over with warm ashes, and then with a knife scraping off the hair.

Belluæ*.

OF THE HORSE TRIBE†.

Various and essential are the services performed by the animals of this tribe, to mankind. In many countries they are almost the only beasts of draught and burthen that are employed. They are gregarious, and in a wild state inhabit the most retired deserts. The mode in which they fight is by biting, and by kicking with their hind feet; and they have the singular property of breathing only through the nostrils.

Of the six ascertained species of Horses, only one has yet been discovered in a perfectly wild state on the New Continent, and this animal has cloven hoofs. It is an inhabitant of the mountains of South America.

THE COMMON HORSE‡.

The Horse is a native of several districts of Asia and Africa; and in the southern parts of Siberia large herds of

* The animals of the Linnæan order Belluæ, have obtuse front-teeth; and their feet armed with hoofs, in some species whole or rounded, and in others obscurely lobed or subdivided.

† The generic characters of the Horse are six parallel front-teeth in the upper, and six in the lower jaw, the latter somewhat projecting. There is also one canine-tooth on each side, in both jaws, remote from the rest.

‡ SYNONYMS. *Equus caballus*. Linn.—Cheval. Buffon.—Wild Horse. Bell.—Bingley's Mem. of Brit. Quad. Plates, No. 42, Var. 1, 2, 3, and 4.

these animals are occasionally seen. They are extremely swift, active, and vigilant; and have always a sentinel, who gives notice to the herd of the approach of danger, by a loud neigh, on which they gallop off with astonishing rapidity.

In Ukraine, where wild Horses are often found, they are rendered no otherwise serviceable to man than as food. The wild Horses on each side of the Don, are the offspring of the Russian Horses employed in the siege of Asoph in 1697, when, for want of forage, they were turned loose. They have relapsed into a state of nature, and become as 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 is such, as entirely to exclude every other mode of capture.

The Horses of South America are of Spanish origin, and entirely of the Andalusian breed. They are now become so numerous as to live in herds, some of which are said to consist of ten thousand. As soon as they perceive domestic Horses in the fields, they gallop up to them, caress, and, by a kind of grave and prolonged neighing, invite them to run off. The domestic Horses are soon seduced, unite themselves to the independent herd, and depart along with them. It happens not unfrequently that travellers are stopped on the road by the effect of this desertion. To prevent this they halt as soon as they perceive these wanderers, watch their own Horses, and endeavour to frighten away the others: in this case the wild Horses resort to stratagem; some are detached in front, and the rest advance in a close column, which nothing can interrupt. If they are so alarmed as to be obliged to retire, they change their direction, but without suffering themselves to be dispersed. Sometimes they make several turns round those which they are desirous to seduce, in

order to frighten them; but they often retire after making one turn. When the inhabitants wish to convert some of these wild Horses into domestic ones, which they find not very difficult to be done, persons mounted on horse-back attack one of the troops, and when they approach they throw ropes with great care round their legs, which prevent them from running away. When brought home they are tied with a halter to a stake or a tree, without food or drink, for two or three days. After this they are cut, and then broke in the same manner as the domestic Horses. They soon become docile, but if not carefully watched will again join their wild friends.

The Horse, in an improved state, is found in almost every part of the world, except, perhaps, within the Arctic circle; and its reduction and conquest may be considered as the greatest acquisition from the animal world, that the art and industry of man have ever made. As domestics, their docility and gentleness are unparalleled, and they contribute more to the convenience and pride of man than all other animals put together.

In Arabia they are found in their highest perfection, as little degenerated in their race or powers as the lion or tiger. To the Arabs they are as dear as their own children; and the constant intercourse, arising from living in the same tent with their owner and his family, creates a familiarity that could not otherwise be effected, and a tractability that arises only from the kindest usage. They are the fleetest animals of the desert, and are so well trained as to stop in their most rapid course by the slightest check of the rider. Unaccustomed to the spur, the least touch with the foot sets them again in motion; and so obedient are they to the rider's will, as to be directed in their course

merely by the motion of a switch. They form the principal riches of many of the Arab tribes, who use them both in the chase and in their plundering expeditions. In the day-time they are generally kept saddled at the door of the tent, prepared for any excursion their master may take. They never carry heavy burthens, nor are employed on long journeys. Their constant food, except in spring, when they get a little grass, is barley, which they are suffered to eat only during the night. The Arab, his wife, and children, always lie in the same apartment with the mare and foal, who, instead of injuring, suffer the children to rest on their bodies and necks without in the least incommoding them: the gentle animals even seem afraid to move lest they should hurt them. They never beat or correct their horses, but always treat them with the utmost kindness: they talk to and reason with them.

The whole stock of a poor Arabian of the desert consisted of a Mare; this the French consul at Saïd offered to purchase, with an intention to send her to Louis the Fourteenth. The Arab, pressed by want, hesitated a long time, but at length consented, on condition of receiving a very considerable sum of money, which he named. The consul wrote to France for permission to close the bargain, and having obtained it, sent immediately to the Arab the information. The man, so poor as to possess only a miserable rag, a covering for his body, arrived with his magnificent courser. He dismounted, and looking first at the gold, and then stedfastly at his Mare, heaved a deep sigh:—"To whom is it (he exclaimed) that I am going to yield thee up? To Europeans! who will tie thee close, who will beat thee, who will render thee miserable! Return with me, my beauty! my jewel! and rejoice the hearts of my children!" As he pronounced the last words, he sprang upon her back, and was out of sight almost in a moment. What an amiable and affecting sensibility in a man, who,

in the midst of distress, could prefer all the disasters attendant on poverty, rather than surrender the animal that he had long fostered in his tent, and had been the child of his bosom, to what he supposed inevitable misery! The temptation even of riches, and an effectual relief from poverty, had not sufficient allurements to induce him to so cruel an act.

“The Horses of the Bedouin Arabs, whose lives (says Sonnini) are spent in traversing the scorching sands, are able, notwithstanding the fervency of the sun, and the suffocating heat of the soil over which they pass, to travel three days without drinking, and are contented with a few handful of dried beans given once in twenty-four hours. From the hardness of their labour and diet, they are, of course, very lean; yet they preserve incomparable vigour and courage.”

The description of the Eastern horses in the Book of Job, is exceedingly poetical and expressive — “Hast thou given the Horse strength? Hast thou clothed his neck with thunder? Canst thou make him afraid as a grasshopper? The glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength: he goeth on to meet the armed men: He mocketh at fear, and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear, and the shield. He swalloweth the ground with fierceness and rage: neither believeth he that it is the sound of the trumpet. He saith among the trumpets, ha, ha; and he smelleth the battle afar off, the thunder of the captains, and the shouting.”

The fiery courser, when he hears from far
The sprightly trumpets, and the shouts of war,
Pricks up his ears, and, trembling with delight,
Shifts place, and paws, and hopes the promised fight.

On his right shoulder his thick mane reclin'd,
Ruffles at speed, and dances in the wind;
His horny hoofs are jetty black and round:
His chine is double; starting with a bound,
He turns the turf, and shakes the solid ground,
Fire from his eyes, clouds from his nostrils flow;
He bears his rider headlong on the foe.

In Norway, where the roads are most of them impassable for carriages, the Horses are remarkably sure-footed; they skip along over the stones, and are always full of spirit. Pontoppidan says, when they go up and down a steep cliff, on stones like steps, they first gently tread with one foot, to try if the stone be firm; and in this they must be left entirely to their own management, or the best rider in the world would run the risk of breaking his neck. When they have to descend steep and slippery places, and such frequently occur, they, in a surprising manner, like the asses of the Alps (which I shall next mention), draw their hind legs together under their bodies, and thus slide down. They exhibit much courage when they contend, as they are often under the necessity of doing, with the wolves and bears, but particularly with the latter. When the Horse perceives any of these animals near him, and has a Mare or Foal with him, he first puts these behind out of the way, and then furiously attacks his enemy with his fore-legs, which he uses so expertly as generally to prove the conqueror. Sometimes, however, the bear, who has twice the strength of his adversary, gets the advantage, particularly if the Horse makes any attempt, by turning round, to strike him with his hind-legs; for the bear then instantly closes upon him, and keeps such firm hold as scarcely by any means whatever to be shaken off: the Horse in this case gallops away with his enemy, till he falls down and expires from loss of blood.

There are few countries that can boast a breed of Horses so excellent as our own. The English hunters are allowed to be among the noblest, most elegant, and useful animals in the world. Whilst the French, and many other European nations, seem only attentive to spirit and parade, we train ours principally for strength and dispatch. Theirs, however, have the advantage of never coming down before, as ours do, because, in breaking, they put them more on their haunches, while we, perhaps, throw them too much forward. With unwearied attention, however, to the breed, and repeated trials of all the best Horses in different parts of the world, ours are now become capable of performing what no others can. Among our racers we have had one (Childers) which has been known to pass over eighty-two feet and a half in a second of time, a degree of fleetness perhaps unequalled by any other Horse. In the year 1745, the post-master of Stretton rode, on different Horses, along the road to and from London, no less than 215 miles in eleven hours and a half, a rate of above eighteen miles an hour: and in July, 1788, a Horse belonging to a gentleman of Billiter-square, London, was trotted, for a wager, thirty miles in an hour and twenty-five minutes, which is at the rate of more than twenty-one miles in an hour. In London there have been instances of a single horse drawing, for a short space, the weight of three tons: and some of the pack Horses of the north usually carry burthens weighing upwards of four hundred pounds. But the most remarkable proof of the strength of the British Horses is in our mill Horses, some of which have been known to carry, at one load, thirteen measures of corn, that in the whole would amount to more than nine hundred pounds in weight.

Though endowed with vast strength, and great powers of body, such is the disposition of the Horse, that it rarely exerts either to its master's prejudice: on the contrary, it will endure fatigues, even to death, for our benefit. Providence seems to have implanted in him a benevolent disposition, and a fear of the human race, with, at the same time, a certain consciousness of the services we can render him. We have, however, one instance of recollection of injury, and an attempt to revenge it. This is inserted in a work of D. Rolle, Esq. of Torrington, in Devonshire:—A Baronet, one of whose hunters had never tired in the longest chase, once encouraged the cruel thought of attempting completely to fatigue him. After a long chase, therefore, he dined, and again mounting, rode him furiously among the hills. When brought to the stable, his strength appeared exhausted, and he was scarcely able to walk. The groom, possessed of more feeling than his brutal master, could not refrain from tears at the sight of so noble an animal thus sunk down. The Baronet some time after entered the stable, and the horse made a furious spring upon him, and had not the groom interfered, would soon have put it out of his power of ever again misusing his animals.

The barbarous custom of docking the tails, and cutting the ears of Horses, is in this country very prevalent. The former, principally with waggon Horses, under the pretence that a bushy tail collects the dirt of the roads; and the latter, from the notion that they are rendered more elegant in their appearance. Thus, from ideal necessity, we deprive them of two parts of the body principally instrumental, not only to their own ease and comfort, but in their utility to us. By taking away their ears, the funnels are destroyed which they always direct to the place from whence any sound is heard, and they are thus rendered nearly deaf. And in the loss of their tail, they find even

a still greater inconvenience. During summer they are perpetually teased with swarms of insects, that either attempt to suck their blood, or to deposit their eggs in the rectum, which they have now no means of lashing off; and in winter they are deprived of a necessary protection against the cold.

But, of all others, the custom that we have adopted, (for it is found in no other nation than this,) of nicking them, is the most useless and absurd. It is a most affecting sight to go into the stable of an eminent horse-dealer, and there behold a range of fine and beautiful steeds with their tails cut and slashed, tied up by pulleys to give them force, suffering such torture that they sometimes never recover the savage gashes they have received; and for what is all this done?—that they may hold their tails somewhat higher than they otherwise would, and be for ever after deprived of the power of moving the joints of them as a defence against flies!

I have another abuse to notice, observable in those who shoe Horses. The stupid blacksmith, in order to save himself a little trouble, will frequently apply the shoe red-hot to the Horse's foot, in order that it may burn for itself a bed in the hoof, and fit it for its reception. "The utmost severity (says Lord Pembroke) ought to be inflicted on all those who clap shoes on hot. This unpardonable laziness of farriers, in making feet thus to fit shoes, instead of shoes to fit the feet, dries up the hoofs, and utterly destroys them." It is of the most ruinous consequence, hardening and cracking the hoofs, and inducing even the most fatal disorders. The joints, the wind, and the eyes, are injured by it, and the gross humours which naturally descend to the feet, and ought to be carried off by insensible perspiration, are detained from the hardness of the surface they have to penetrate.

The stomach of Horses is small, and at the cardia there

is a little valve which renders them incapable of vomiting. Their natural diseases are few, but our ill-usage, or neglect, or, which is very frequent, our over-care of them, bring on a numerous train, which are often fatal. They sleep but little, and this, in general, on their legs. If properly treated, they will live from forty to fifty years.

THE ASS*.

Wild Asses live in herds, each consisting of a chief, and several mares and colts, sometimes to the number of twenty. They are excessively timid, and provident against danger. A male takes on him the care of the herd, and is always on the watch. If they observe a hunter, who by creeping along the ground has got near them, the sentinel takes a great circuit, and goes round and round him, as if discovering somewhat to be apprehended. As soon as the animal is satisfied, he rejoins the herd, which sets off with great precipitation. Sometimes his curiosity costs him his life; for he approaches so near as to give the hunter an opportunity of shooting him.—The senses of hearing and smelling in these animals are most exquisite; so that they are not in general to be approached without the utmost difficulty.—“The wild Asses did stand in the high places,” says the prophet Jeremiah; “they snuffed up the wind like dragons.” The Persians catch them and break them for the draught. They make pits, which they fill about half up with plants: into these the Asses fall without bruising themselves, and are taken thence alive. When completely domesticated they are very valuable, and

* SYNONYMS. *Equus Asinus*. *Linn.*—*Asne*. *Buffon*.—Wild Ass, or Koulan. *Penn.*—Onager of the Ancients.—*Bingley's Mem. of Brit. Quad. Pl.* 43.

sell at a high price, being at all times celebrated for their amazing swiftness.

The food of the wild Asses is the saltiest plants of the deserts, such as the atriplex, kali, and chenopodium; and also the bitter milky tribes 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 his dwelling, ought, according to the learned Bochart, to be rendered *salt places*. The hunters generally lie in wait for the Asses near the ponds of brackish water, to which they resort to drink.

These animals are found wild in the mountainous deserts of Tartary, the southern parts of India and Persia, and in some parts of Africa. In their native state they exhibit an appearance far superior, both in point of vivacity and beauty, to the animals of the same species in a state of domestication.

The Ass, like the horse, was imported into America by the Spaniards: and that country seems to be peculiarly favourable to this race of animals; for, where they have run wild, they have multiplied in such numbers, that in some places they have become quite a nuisance. In the kingdom of Quito, the owners of the grounds where they are bred suffer all persons to take away as many as they can, on paying a small acknowledgment, in proportion to the number of days the sport of hunting them lasts. They catch them in the following manner:—A number of persons go on horseback, and are attended by Indians on foot; when arrived at the proper places, they form a circle in order to drive them into some valley, where, at full speed, they throw the noose, and endeavour to halter them. The creatures, finding themselves enclosed, make furious efforts to escape; and, if only one forces his way through, they all follow with irresistible impetuosity. However, when

noosed, the hunters throw them down, and secure them with fetters, and thus leave them till the chase is over. Then, in order to bring them away with greater facility, they pair them with tame Asses; but this is not easily performed, for they are so fierce that they often wound the persons who undertake to manage them.

They have all the swiftness of horses, and neither declivities nor precipices can retard their career.—When attacked, they defend themselves by means of their heels and mouth with such address, that, without slackening their pace, they often maim their pursuers. But the most remarkable property in these creatures is, that, after carrying their first load, their celerity leaves them, their dangerous ferocity is lost, and they soon contract the stupid look and the dullness peculiar to their species. It is also observable that these creatures will not permit a horse to live among them. They always feed together; and, if a horse happens to stray into the place where they graze, they fall upon him, and, without even giving him the choice of flying, bite and kick him till they leave him dead on the spot.

The manner in which the Asses descend the precipices of the Alps or the Andes is truly extraordinary. In the passes of these mountains there are often on one side lofty eminences, and on the other frightful abysses; and, as these generally follow the direction of the mountain, the road, instead of lying on a level, forms, at every little distance, steep declivities of several hundred yards downwards. These can only be descended by Asses; and the animals themselves seem sensible of the danger by the caution that they use. When they come to the edge of one of the descents, they stop of themselves, without being checked by the rider; and, if he inadvertently attempts to spur them on, they continue immovable. They seem all this time ruminating on the danger that lies before them, and preparing themselves for the encounter. They not only attentively view the

road, but tremble and snort at the danger. Having prepared for their descent, they place their fore-feet in a posture as if they were stopping themselves; they then also put their hinder feet together, but a little forward, as if they were about to lie down. In this attitude, having taken a survey of the road, they slide down with the swiftness of a meteor. In the mean time all that the rider has to do is to keep himself fast on the saddle, without checking the rein; for the least motion is sufficient to disorder the equilibrium of the Ass, in which case both must unavoidably perish. But their address in this rapid descent is truly wonderful; for, in their swiftest motion, when they seem to have lost all government of themselves, they follow exactly the different windings of the road, as if they had previously settled in their minds the route they were to follow, and taken every precaution for their safety. In this journey the natives, who are placed along the sides of the mountains, and hold themselves by the roots of the trees, animate the beasts with shouts, and encourage them to perseverance. Some Asses, after being long used to these journeys, acquire a kind of reputation for their safety and skill; and their value rises in proportion to their fame.

In Spain the breed of Asses has, by care and attention, become the finest in the world; they are large, strong, elegant, and stately animals, and are often found to rise to fifteen hands high. The best of them sell sometimes for a hundred guineas each or upwards. This shows that the Ass may, notwithstanding all our prejudices, and our generally contemptuous opinion of it, be rendered even an elegant, as well as an useful animal. The Romans had a breed which they held in such high estimation, that Pliny mentions one of the stallions selling for a price greater than three thousand pounds of our money; and

he says that in Celtiberia, a province of Spain, a she Ass has brought colts that were bought for nearly the same sum. And Varro speaks of an Ass that was sold in his own time, in Rome, for nearly five hundred pounds.

Being more hardy than the horses, these animals are preferred to them for journeys across the deserts. Most of the Musselmen pilgrims use them in the long and laborious journeys to Mecca; and the chiefs of the Nubian caravans, which are sixty days in passing immense solitudes, ride upon Asses; and these, on their arrival in Egypt, do not appear fatigued.—When the rider alights, he has no occasion to fasten his Ass; he merely pulls the rein of the bridle tight, and passes it over a ring on the fore-part of the saddle; this confines the animal's head, and is sufficient to make him remain patiently in his place.

In the principal streets of Cairo, Asses stand ready bridled and saddled for hire, and answer the same purposes as the hackney-coaches in London. The person who lets them accompanies his Ass, running behind to goad him on, and to cry out to those on foot to make way. They are regularly rubbed down and washed, which renders their coat smooth, soft, and glossy. Their food is the same as that of the horses, usually consisting of chopped straw, barley, and beans. They here seem, says M. Denon, to enjoy the plenitude of their existence: they are healthy, active, cheerful, and the mildest and safest animals that a person can possibly have. Their natural pace is a canter or gallop; and without fatiguing his rider, the Ass will carry him rapidly over the large plains which lie between different parts of this straggling city.

The gentleness, patience, and perseverance of this animal, so much abused and neglected in our own country, are without example. He is subjected to excessive labour, and contented with the coarsest herbage. The common

lanes and high roads are his nightly residence, and his food the thistle or plantain, which he sometimes prefers to grass. In his drinking he is, however, singularly nice, refusing all but the water of the clearest brooks. He is much afraid of wetting his feet, and will, even when loaded, turn aside to avoid the dirty parts of the road. His countenance is mild and modest, fully expressive of his simple and unaffected deportment.—His services are too often repaid by hard fare and cruel usage; and, being generally the property of the poor, he partakes of their wants and their distresses. He is more healthy than the horse, and, though generally degraded into the most useless and neglected of domestic quadrupeds, he might, by care and education, be rendered useful for a variety of domestic purposes in which the horse is now employed. Were we but to pay a little attention to him, we could not fail to be gainers by it. We ought also to cross our breed with the Arabian, Egyptian, or even the Spanish males; which would produce us an offspring improved both in strength and appearance. The fame of Asses being stubborn animals is, in a great measure, unfounded; as it arises solely from ill usage, and not from any natural defect in their constitution or temper.

An old man, who a few years ago sold vegetables in London, used in his employment an Ass, which conveyed his baskets from door to door. Frequently he gave the poor industrious creature a handful of hay, or some pieces of bread, or greens, by way of refreshment and reward. The old man had no need of any goad for the animal, and seldom indeed had he to lift up his hand to drive it on. His kind treatment was one day remarked to him, and he was asked whether his beast was apt to be stubborn. "Ah! Master, (he replied) it is of no use to be cruel; and as for stubbornness I cannot complain, for he is ready to do any thing, or to go any where. I bred him myself.

He is sometimes skittish and playful, and once ran away from me; you will hardly believe it, but there were more than fifty people after him, attempting in vain to stop him; yet he turned back of himself, and never stopped till he ran his head kindly into my bosom."

There were, according to Hollingshed, no Asses in England in the reign of Queen Elizabeth. How soon afterwards they were introduced is uncertain; they are, however, at present naturalized in this country, and their utility becomes every day more experienced.

The skin of the Ass is elastic, and of use for various articles, such as drums, shoes, and the leaves of pocket-books. *Chagrin* is made of that part of the skin which grows about the rump; and at Astracan and throughout Persia there are great manufactories of it. It is not naturally granulated, that roughness being altogether effected by art. The flesh of the wild Ass is eaten by the Tartars, and is said to be very delicate and good. The milk is universally known, and is approved as a specific in many disorders. It is light, easy of digestion, and highly nutritious.

THE ZEBRA *.

Zebras inhabit the scorching plains of Africa, vast herds of them affording sometimes an agreeable relief to the eye of the wearied traveller. They assemble in the day-time on the

* DESCRIPTION. The Zebra, somewhat like the mule, has a large head and ears. Its body is round and plump, and its legs are delicately small. The skin is as smooth as satin, and adorned with elegant stripes like ribbons, which in the male are brown on a yellowish white ground, and in the female black on a white ground.

SYNONYMS. *Equus Zebra*. Linn.—Zebre. Buffon.—Shaw's Gen. Zool. ii. tab. 217.—Bew. Quad. p. 22.

extensive plains of the interior of the country, and by their beauty and liveliness adorn and animate the dreary scene.

All attempts to tame this animal, so as to render it serviceable to mankind, have hitherto been fruitless. Wild and independent by nature, it seems ill adapted to servitude and restraint. If, however, it were taken young, and much care was bestowed on its education, it might probably be in a great measure domesticated.

Several Zebras have at different times been brought into England. There is one at present in the Tower, which was deposited there in June, 1803. It was brought from the Cape of Good Hope by lieutenant-general Dundas; and was afterwards purchased by Mr. Bullock, the master keeper of the animals in the Tower. This animal, which is a female, is more docile than the generality of Zebras that have been brought into Europe; and when in good humour, she is tolerably obedient to the commands of her keeper, the servant of the general who attended her during the voyage. This man, with great dexterity, can spring on her back, and she will carry him a hundred and fifty, or two hundred yards, but by the time she has done this, she always becomes restive, and, with almost equal dexterity, he is obliged to dismount. Sometimes, when irritated, she plunges at the keeper, and attempts to kick him. She one day seized him by the coat with her mouth, and threw him upon the ground; and, had not the man been extremely active in rising and getting out of her reach, would certainly have destroyed him. He has at times the utmost difficulty to manage her; from the irritability of her disposition; the great extent, in almost every direction, to which she can kick with her feet; and the propensity she has of seizing whatever offends her, in her mouth. Strangers she will by no means allow to approach her, unless the keeper has hold of her head; and

even then there is great risque of a blow from her hind feet.

The beautiful male Zebra that was burnt some years ago at the Lyceum, near Exeter 'Change, was so gentle, that the keeper has often put young children upon its back, and without any attempt from the animal to injure them. In one instance a person rode it from the Lyceum to Pimlico. But this unusual docility in an animal naturally vicious is to be accounted for from its having been bred and reared in Portugal, from parents that were themselves half reclaimed.—The Zebra that was some years ago kept at Kew, was of a ferocious and savage nature. No one dared to approach it, except the person who was accustomed to feed it, and who alone could mount upon its back. Mr. Edwards saw this animal eat a large paper of tobacco, paper and all; and was told it would eat flesh, and any kind of food that was given to it. This, however, might proceed from habit or necessity in its long voyage; for in a native state these animals all feed, like horses and asses, on vegetables.

The voice of the Zebra can scarcely be described. It is thought by some persons to have a distant resemblance to the sound of a post-horn. It is more frequently exerted when the animals are alone than at other times.

In some parts about the Cape of Good Hope there are many Zebras; and a penalty of fifty rix-dollars is inflicted on any person who shoots one of them. Whenever any of them happen to be caught alive, there is a general order that they must be sent to the governor.

OF THE HIPPOPOTAMUS TRIBE.

Only one species of the Hippopotamus has hitherto been discovered. This has four front-teeth in each jaw; the upper ones standing distant by pairs, the lower pro-

minent, and the two middle ones the longest. The canine teeth are solitary, those of the lower-jaw extremely large, curved, and cut obliquely at the ends. The feet are each armed at the margin with four hoofs.

THE AMPHIBIOUS HIPPOPOTAMUS*.

From the unwieldiness of his body, and the shortness of his legs, the Hippopotamus, according to the accounts given to M. de Buffon, is not able to move fast upon land, and is then an extremely timid animal. If pursued he takes to the water, plunges in, sinks to the bottom, and there walks at ease. He cannot, however, continue long without rising to the air for the purpose of breathing; though, if threatened with danger, he does this so cautiously, that the place where his nose is raised above the surface of the water is scarcely perceptible.

If wounded, the Hippopotamus will rise and attack boats or canoes with great fury, and often sink them by biting large pieces out of their sides. In shallow rivers,

* DESCRIPTION. In size the full-grown Hippopotamus is equal, or even sometimes superior to the Rhinoceros. One that M. Le Vaillant killed in the south of Africa measured ten feet seven inches in length, and about nine feet in circumference. Its form is uncouth, the body being extremely large, fat, and round: the legs very short and thick; the head large; the mouth extremely wide; and the teeth of vast strength and size. The eyes and ears are small. The tail is short, and sparingly scattered with hair. The whole animal is covered with short hair, thinly set, and is of a brownish colour. The hide is in some parts two inches thick, and not much unlike that of the hog: the hide of a full-grown Hippopotamus is sufficiently heavy to load a camel.

SYNONYMS. Hippopotamus Amphibius. Linn.—Hippopotami, River Horses, Water Elephants, or Ker-kamanon. Barbot.—Hippopotame, ou Cheval Marin. Buffon.—Sea-horse. Dampier.—Shaw's *Gen. Zool.* ii. tab. 219.—Bew. *Quad.* p. 182.

he makes deep holes in the bottom, in order to conceal his great bulk. When he quits the water he usually puts out half his body at once, and smells and looks around; but sometimes rushes out with great impetuosity, and tramples down every thing in his way. During the night he leaves the rivers in order to feed on sugar-canes, rushes, millet, or rice, consuming great quantities, and doing much damage in the cultivated fields.

The Egyptians adopt a singular mode of, in some measure, freeing themselves from this destructive animal. They mark the places that he chiefly frequents, and there deposit a quantity of peas. When the beast comes ashore, hungry and voracious, he immediately falls to eating in the nearest place; and filling himself with the peas, they occasion an insupportable thirst. He rushes into the water, and drinks so copiously, that the peas in his stomach, being fully saturated, swell so much as very soon afterwards to kill him.—Among the Caffres in the south of Africa, the Hippopotamus is sometimes caught by means of pits made in the paths that lead to his haunts. But the gait of this animal, when undisturbed, is generally so cautious and slow, that he often smells out the snare, and avoids it. The most certain method is to watch him at night, behind a bush close to his path; and, as he passes, to wound him in the tendons of the knee-joint, by which he is immediately rendered lame, and unable to escape from the numerous hunters that afterwards assail him.

These creatures are capable of being tamed. Belon says, he has seen one so gentle, as to be let loose out of a stable, and led by its keeper, without attempting to injure any person.

“The Hippopotamus is not (says Dr. Sparrman) so slow and heavy in his pace on land as M. de Buffon describes him to be; for both the Hottentots and colonists look upon it as dangerous to meet a Hippopotamus out of the

water, especially as, according to report, they had had a recent instance of one of these animals, having for several hours pursued a Hottentot, who found it difficult to make his escape."

Professor Thunberg was informed, by a respectable person at the Cape, that as he and a party were on a hunting expedition, they observed a female Hippopotamus come out from one of the rivers, and retire to a little distance from its bank, in order to calve. They lay concealed in the bushes till the calf and its mother made their appearance, when one of them fired, and shot the latter dead on the spot. The Hottentots, who imagined that after this they could seize the calf alive, immediately ran from their hiding-place; but though only just brought into the world, the young animal got out of their hands, and made the best of its way to the river, where, plunging in, it got safely off. This is a singular instance of pure instinct, for, the Professor observes, the creature, unhesitatingly, ran to the river, as its proper place of security, without having previously received any instructions from the actions of its parent.

The flesh of the Hippopotamus is in great request among the Hottentots, who are very fond of it, either roasted or boiled. Their partiality might not, however, induce an European to suppose it excellent, for they considerably exceed our epicures in their relish for high-flavoured (putrefied) game. Thunberg passed a Hottentot tent which had been pitched for the purpose of consuming the body of an Hippopotamus that had been killed some time before: the inhabitants were in the midst of such stench, that the travellers could hardly pass them without being suffocated.—The skin is cut into thongs for whips, which, for softness and pliability, are preferred by the Africans to those made of the hide of the rhinoceros.

The tusks, from the circumstance of their always pre-

serving their original whiteness and purity, are reckoned superior to ivory. The French dentists manufacture them into artificial teeth.

These animals inhabit the rivers of Africa, from the Niger to Berg River, many miles north of the Cape of Good Hope. They formerly abounded in the rivers nearer the Cape, but they are now almost extirpated there.

OF THE TAPIR TRIBE.

Of this, as of the preceding tribe, there is only one known species. And, as the former is a native only of the Old, this is an inhabitant, exclusively, of the New Continent. There are front-teeth in each jaw; and single incurvated canine-teeth. There are also five broad grinders on each side, both above and below. On the hind-feet there are three hoofs, and on the fore-feet four.

THE LONG-NOSED TAPIR *.

In its general habits this animal has a considerable resemblance to the hippopotamus; yet, in many particulars, it reminds us also of the elephant and of the rhinoceros. It is the largest of all the South American quadrupeds

* DESCRIPTION. The Tapir is about the size of a small cow. The nose of the male is elongated into a kind of proboscis, capable of being contracted and extended at pleasure. The ears are roundish and erect; and the tail short and naked. The neck is thick, short, and has a kind of bristly mane, about an inch and half long near the head. The body is thick and clumsy, and the back somewhat arched. The legs are short and thick: and the feet have small black hoofs. The hair is of a dusky or brownish colour.

SYNONYMS. Tapir Americanus. *Linnaeus*.—Le Tapir. *Buffon*.—Long-nosed Tapir. *Pennant*.—American Tapir. *Shaw*.—*Shaw's Gen. Zool.* ii. Pl. 220.—*Bew. Quad.* p. 174.

except the horse; and its skin is so thick and hard, as to be almost impenetrable by a bullet. Although its natural disposition is marked only by actions indicative of mildness and timidity; endeavouring, when attacked, to save itself by flight, or by plunging into the water, yet, if its retreat be cut off, it has courage and strength to make a most powerful resistance both against men and dogs.

The Tapir feeds chiefly by night, and subsists upon sugar-canes, grasses, the leaves of shrubs, and various kinds of fruit. In feeding it uses its long projecting nose or proboscis in the same manner as the rhinoceros applies his upper lip, to grasp its food and convey it to its mouth. This is an instrument of great flexibility and strength; and in it, as in the proboscis of the elephant, are situated the organs of smell.

Notwithstanding its general clumsy appearance, the Tapir is an extremely active animal in the water, swimming and diving with singular facility. Like the hippopotamus, it is able to continue immersed for a considerable while; but it is also under the necessity of occasionally rising to the surface in order to breathe. During the day-time this animal is generally asleep in some retired-part of the woods. It chiefly resides in dry places, near the sides of hills; occasionally frequenting the savannahs in quest of food. On land its motions appear to be somewhat slow, and its disposition inactive. Its voice is a kind of whistle, which the hunters easily imitate, and by this means frequently lure the unfortunate creature to its destruction. The usual attitude which the Tapir adopts, when at rest, is sitting on its rump in the manner of a dog.

Except at one season of the year, the male lives entirely apart from the female. To the latter belongs the whole management of rearing their offspring. This she leads to the water, and seems to delight in teaching it to swim;

frequently plunging about and playing with it, in that element, for a considerable while together. On land it runs after her wherever she goes.

If they are caught young, these animals may, without difficulty, be tamed, and rendered even in some measure domestic. They are very common in the town of Cayenne, where they are suffered to run about the streets, and are fed with Cassava bread and fruit. M. Bajou, a surgeon attached to the government, had, at this place, a Tapir which became perfectly familiar, and acquired a strong attachment to him, distinguishing him in the midst of many other persons, licking his hands, and following him like a dog. This animal would often go alone into the woods to a great distance, but always returned to his home early in the evening. M. Bajou assures us, that a Tapir, which had been suffered to run tame about the streets of Cayenne, became so unmanageable in a vessel, on board of which it was put in order to be conveyed to France, as not to be confined. It broke the very strong cords with which it was tied, and throwing itself overboard, escaped to shore. Every one supposed it to have been lost, but, in the evening, it returned to the town. On reembarking it, great precautions were taken to prevent its escape; but these did not succeed, for during the voyage, a storm happening to arise, it became again outrageous, broke its fetters, and rushing out of its place of confinement, committed itself to the waves, and was never afterwards seen.

A Tapir was exhibited alive at Amsterdam, in the year 1704, under the name of *Sea Horse*. Another, which about the same time was in the menagerie of the Prince of Orange, was so young as scarcely to be larger than a hog. Its proboscis, when at rest, did not much extend below the under lip; and, in this state, had numerous circular wrinkles; but was capable of considerable exten-

sion. It had no finger at the extremity like the proboscis of an elephant, notwithstanding which, the animal, by means of it, could pick up from the ground the smallest objects. This creature was very gentle. It approached with familiarity any one who entered its lodge, particularly if he had food in his hand to which it was partial.

A female Tapir was exhibited at several of the fairs in Holland and Germany, the keepers usually feeding it on rye bread, a kind of gruel, and vegetables of different kinds. It was excessively fond of apples, and was able to smell them to a considerable distance. If any persons happened to have apples in their pockets, it would eagerly approach them, and thrusting in its proboscis, would take them out with surprising facility. It ate of almost every thing that could be presented to it, whether vegetables, fish, or meat. Its favourite attitude was sitting on its rump, like a dog; and it never exerted its voice unless it was either fatigued or irritated.

There is now (1812) at Exeter 'Change, a young Tapir, which is not bigger than a large hog. It was brought into England about seven months ago, with another of the same species, which died not long after its arrival. In every respect it appears to be a mild and docile beast.

These animals inhabit the eastern parts of South America; occurring in great numbers, from the Isthmus of Darien, to the river of Amazons. Their flesh is considered by the South Americans as a wholesome food; and the skin serves all the purposes for which a strong leather would be required. The Indians make shields of it, which are stated to be so hard, as to be impenetrable by an arrow.

OF THE HOG TRIBE IN GENERAL*.

The manners of these animals are in general filthy and disgusting. They are fond of wallowing in the mire, and feed almost indifferently on animal and vegetable food, devouring even the most corrupted carcases. With their strong tendinous snout they dig up the earth in search of roots and other aliments hidden under the surface. They are exceedingly prolific.

THE COMMON HOG†.

In Europe the Wild Boars inhabit the depths of forests, where, in vegetables and fallen fruits, they are supplied with an abundance of food. From these they never issue but for the purpose of changing their residence, or of plundering and devastating the adjacent fields. In Egypt, on the contrary, the Wild Boar has no shelter. Continually exposed to the fervor of a burning sun, he traverses the sandy plains, where the few scattered shrubs yield him but little subsistence, and still less shade.


While they are young, these animals live in herds, for the purpose of mutual defence; but the moment they come to maturity, they walk the forest alone and fearless.

* In the upper jaw there are four front-teeth, the points of which converge; and, usually, six in the lower jaw, which project. The canine-teeth, or tusks, are two in each jaw, those above short, while those below 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 cloven.

† SYNONYMS. *Sus Scrofa*. Linn.—Sanglier et Marcassin. *Buffon*.—Wild Hog. *Browne*.—*Shaw's Gen. Zool.* ii. tab. 221, 222.—*Bew. Quad.* p. 160.—*Bingley's Mem. of Brit. Quad.* Pl. 44.

They seldom attack unprovoked; but dread no enemy, and shun none. When hunted, they do not so much fly their assailants, as keep them at bay, and are at last rather wearied out, or overcome by numbers, than fairly killed in the chase.

Through wild'ring forests, and through thorny brakes,
The huntsman's toil the chafing Boar o'ertakes.
Hardy he meets the bristly tusked foe,
And distant darts, or strikes the nearer blow.
But on himself he not depends alone;
Assisting dogs first run the monsters down.
They to the secret dens unerring guide,
And op'ning tell where the fierce sylvans hide.
On the firm continent th' assailants meet,
And unmov'd earth supports their steady feet.



The Domestic Hog is, generally speaking, a harmless and inoffensive beast. He lives chiefly on vegetables, though, when pressed by hunger, he will devour even the most putrid carcases. We, however, generally conceive him much more indelicate than he really is. He selects, at least the plants of his choice, with great sagacity and niceness; and is never poisoned, like some other animals, by mistaking noxious for wholesome food. Selfish, indocile, and rapacious, as many think him, no animal has greater sympathy for those of his own kind. The moment one of them gives the signal of distress, all within hearing rush to its assistance. They have been known to gather round a dog that teased them, and kill him on the spot. Enclose a male and female in a sty when young, and the female will decline from the instant her companion is removed, and will probably die of a broken heart. This animal is well adapted to the mode of life to which it is

destined. Having to obtain a subsistence principally by turning up the earth with its nose, we find that the neck is strong and brawny; the eyes small, and placed high in the head; the snout long; the nose callous and tough, and the power of smelling peculiarly acute. The external form is indeed very unwieldy, but, by the strength of its tendons, the Wild Boar is enabled to fly from the hunters with surprising agility. The back toe on the feet of this animal prevents its slipping while it descends steep declivities.

In Minorca the Hog is converted into a beast of draught; a Cow, a Sow, and two young Horses, have been seen in that island yoked together, and of the four the Sow drew the best. The ass and the Hog are here common helpmates, and are frequently yoked together to plough the land.—In some parts of Italy, Swine are used in hunting for truffles*, which grow some inches deep in the ground. A cord being tied round the hind-leg of one of the animals, the beast is driven into the pastures, and we are told that wherever he stops and begins to root with his nose, truffles are always to be found.

In proof that these animals are not destitute of sagacity, it would perhaps be unnecessary to recite any other accounts than those of the various "*learned Pigs*" which have at different times been exhibited in this country. But an instance more surprising than these was afforded by Tumor, the gamekeeper of the late Sir H. P. St. John Mildmay, actually breaking in a black New Forest Sow to find game, back and stand, nearly as well as a pointer†.

* *Lycoperdon tuber* of Linnaeus.

† A full account of this animal, and her various qualifications, is inserted in "*Memoirs of British Quadrupeds*," from a narrative which the late Sir H. Mildmay did me the honour to draw up for that purpose.

The senses of smelling and taste are enjoyed by these animals in great perfection. Wind appears to have great influence on them; for when it blows violently they seem much agitated, and run towards the sty, sometimes screaming in a most violent manner. Naturalists have also remarked that, on the approach of bad weather, they will bring straw to the sty, as if to guard against its effects. The country people have a singular adage, that "Pigs can see wind."

That they are extremely tenacious of life, is known to almost every person who is at all acquainted with their manners. The most curious instance that I have met with of this in any writer, is in Josselyn's account of two voyages to New England. I shall insert the passage, though I by no means intend to vouch for its truth. "Being at a friend's house in Cambridgeshire, the cook-maid, making ready to slaughter a Pig, she put the hinder parts between her legs, as the usual manner is, and taking the snout in her left hand, with a long knife stuck the Pig, and cut the small end of the heart almost in two, letting it bleed as long as any blood came forth; then throwing it into a kettle of boiling water, the Pig swam twice round about the kettle; when, taking it out to the dresser, she rubbed it with powdered rosin, and stripped off the hair, and as she was cutting off the hinder petty-toe, the Pig lifted up his head with open mouth, as if it would have bitten: well, the belly was cut up, the entrails drawn out, and the heart laid upon the board, which, notwithstanding the wound it received, had motion in it above four hours after. There were several of the family by, with myself, and we could not otherwise conclude but that the Pig was bewitched."

The female goes four months with young, and has very numerous litters, sometimes so many as twenty at a time.

These animals live to a considerable age, even to twenty-five or thirty years.

In the island of Sumatra there is a variety of this species that frequents the impenetrable bushes and marshes of the sea-coast. These animals live on crabs and roots: they associate in herds, are of a gray colour, and smaller than the English swine. At certain periods of the year they swim in herds, consisting of sometimes a thousand, from one side of the river Siak to the other, at its mouth, which is three or four miles broad, and again return at stated times. This kind of passage also takes place in the small islands, by their swimming from one to the other. On these occasions they are hunted by a tribe of the Malays, distinct from all the others of the island, who live on the coasts of the kingdom of Siak, called Salettians.

These men are said to smell the swine long before they see them, and when they do this they immediately prepare their boats. They then send out their Dogs, which are trained to this kind of hunting, along the strand, where, by their barking, they prevent the swine from coming ashore and concealing themselves among the bushes. During the passage the Boars precede, and are followed by the females and the young, all in regular rows, each resting its snout on the rump of the preceding one. Swimming thus in close rows, they form a singular appearance.

The Salettians, men and women, meet them in their small, flat boats. The former row, and throw large mats, made of the long leaves of the *Pandanus odoratissima*, interwoven through each other, before the leader of each row of swine, which still continues to swim with great strength; but, soon pushing their feet into the mats, they get so entangled as to be able either no longer to move them, or only

to move them very slowly. The rest are, however, neither alarmed nor disconcerted, but keep close to each other, none of them leaving the position in which they were placed. The men then row towards them in a lateral direction; and the women, armed with long javelins, stab as many of the swine as they can reach. For those beyond their reach they are furnished with smaller spears, about six feet in length, which they dart to the distance of thirty or forty feet with a sure aim. As it is impossible for them to throw mats before all the rows, the rest of these animals swim off in regular order, to the places for which they set out, and for this time escape the danger. As the dead swine are found floating round in great numbers, they are picked up and put into larger boats which follow for the purpose.

Some of these swine they sell to the Chinese traders who visit the island; and of the rest they preserve in general only the skins and fat. The latter, after being melted, they sell to the Maki Chinese; and it is used by the common people instead of butter, as long as it is not rancid, and also for burning in lamps, instead of cocoa-nut oil.

THE ETHIOPIAN HOG *.

These creatures inhabit the wildest, most uncultivated, and hottest parts of Africa, from Senegal to Congo; and they are also found on the island of Madagascar. The natives carefully avoid their retreats, since, from their fierce and savage nature, they often rush upon them unawares, and gore them with their tusks. They reside principally

* DESCRIPTION. This animal is much allied, in its general appearance, to the Common Hog; but is distinguished from it by a

in subterraneous recesses, which they dig by means of their nose and hoofs. If attacked or pursued, they rush on their adversary with astonishing force, striking, like the common boar, with their tusks, which are capable of inflicting the most tremendous wounds.

A Boar of this species was sent, in 1765, by the governor of the Cape of Good Hope, to the Prince of Orange. From confinement and attention he became mild and gentle, except when offended; in which case even those persons to whose care he was entrusted, were afraid of him. In general, however, when the door of his cage was opened, he came out in perfect good humour, gaily frisked about in search of food, and greedily devoured whatever was given him. He was one day left alone in the court-yard for a few minutes, and on the return of the keeper was found busily digging into the earth, where, notwithstanding the cemented bricks of the pavement, he had made an amazingly large hole, with a view, as was afterwards discovered, of reaching a common sewer that passed at a considerable depth below. It was not without much trouble, and the assistance of several men, that his labour could be interrupted. They at length, however, forced him into his cage, but he expressed great resentment, and uttered a sharp and mournful noise.

His motions were altogether much more agile and neat than those of the common Hog. He would allow himself to be stroked, and even seemed delighted with rough friction. When provoked, or rudely pushed, he always re-

pair of large semicircular lobes or wattles situated beneath the eyes. The snout also is much broader, and very strong and callous.

SYNONYMS. *Sus Ethiopicus*. Linn.—Emgalo, or Engulo. *Barbot*.—African wild Boar. *Martyn*.—Ethiopian Hog. *Penn*.—Wood Swine. *Sparrman*.—Sanglier d'Afrique. *Buffon*.—*Sharv's Gen. Zool.* ii. tab. 223.—*Bew. Quad.* p. 149.

fired backward, keeping his face toward the assailant, and shaking his head or forcibly striking with it.—When, after long confinement, he was set at liberty for a little while, he was very gay, and leaped about in an entertaining manner. On these occasions he would, with his tail erect, sometimes pursue the fallow-deer and other animals.

His food was principally grain and roots; and of the former he preferred barley and the European wheat. He was so fond of rye-bread, that he would run after any person who had a piece of it in his hand. In the acts of eating and drinking he always supported himself on the knees of his fore-feet; and would often rest in this position. His eyes were so situated as to prevent his seeing around him, being interrupted by the wattles and prominences of his face; but, in compensation for this defect, his senses of smelling and hearing were wonderfully acute.

Dr. Sparman, when he was in Africa, pursued several Pigs with the old Sows, with the intention of shooting one of them; but though he failed in this object, their chase afforded him singular pleasure. The heads of the females, which had before appeared of a tolerable size, seemed on a sudden to have grown larger and more shapeless than they were. This momentary and wonderful change astonished him so much the more, as, riding hard over a country full of bushes and pits, he had been prevented from giving sufficient attention to the manner in which it was brought about. The whole of the mystery, however, consisted in this: each of the old ones, during its flight, had taken a Pig in its mouth; a circumstance that also explained to him another subject of his surprise, which was, that all the Pigs which he had just before been chasing along with the old-ones, had vanished on a sudden. But in this action we find a kind of unanimity among these animals, in which they resemble the tame species, and

which they have in a greater degree than many others. It is likewise very astonishing, that the Pigs should be carried about in this manner between such large tusks as those of their mother, without being hurt, or crying out in the least. He was twice afterwards witness to a similar occurrence.

The flesh of the Ethiopian Hog is good, and not unlike that of the German wild boar.

Review these numerous scenes; at once survey
Nature's extended face; then, Sceptics, say,
In this wide field of wonders can you find
No art discover'd, and no end design'd?

END OF VOL. I.