

sometimes even vegetable substances must be likewise added.

Strictly speaking, the Bats, as we have seen, are insectivorous; but, as they possess striking peculiarities of structure, outweighing this characteristic, they form with propriety a separate family; like them, however, the *Insectivora*, "par excellence," have their molar teeth bristling with conical points, are most commonly nocturnal in their habits, and in colder climates pass the winter in a state of lethargy. Their limbs are short, their motions feeble, and in walking their entire sole is applied to the ground. Some lead a life entirely subterraneous.

One of the most familiar examples of this family is that cruelly treated animal the COMMON HEDGEHOG, (*Erinaceus Eusopæus*).

This well known animal frequents woods, copses, and thick tangled hedges, where, closely concealed in some crevice between the moss-grown roots of a tree, among a mass of withered leaves, or in a hole it has excavated, it remains rolled up like a ball during the day, presenting a surface of bristling spines, which constitute an apparatus of defence, should its retreat be discovered. As the dusk of evening comes on, the Hedgehog issues from its lurking-place, and prowls about for food. Often while walking at night-fall among the woods near Bakenell, where these animals abound, has the author watched them tripping along the narrow paths and among the long grass with a noiseless step, and ears attentive to the slightest sound: if pursued, they make no attempt to escape by flight, but instantly roll themselves up, and trust to their panoply of spines for safety; when the danger is over, they cautiously unfold, listen attentively, and, if all seems safe, continue their ramble. This faculty of assuming the figure of a ball of spines is the only means of self-preservation bestowed by the Author of Nature on this little animal: weak and timid, it has only this panoply in which to trust; but it may be said to be strong in its weakness, since this passive mode of defence renders it nearly impregnable to the attacks of its enemies.

The feet of the Hedgehog are plantigrade, and furnished with five toes, armed with very long nails, adapted to the purpose of digging; the ear is rounded; the eye small; the two middle incisor teeth are long and cylindrical, and between those in the upper jaw some distance intervenes, while in the lower they are close together; the true molars are furnished with four pointed tubercles, except in the first, where there are only three. Its food is insects, snails, frogs, fruit, together with succulent roots, for which it burrows with the nose. It is useful in gardens, and often kept at

large in kitchens for the destruction of beetles. Pallas has remarked, as a singular fact, that it will eat hundreds of the blistering fly with impunity, while in other animals a single one is the cause of excruciating torments and death. In the second volume of the Zoological Journal, we have a curious relation of an encounter between a Hedgehog and a snake, from which we are led to conclude that snakes not unfrequently furnish a meal to these carnivorous little quadrupeds. The Hedgehog was, and we believe is regarded in some countries by the ignorant with aversion, who allege, as an excuse for their cruelty towards it, that it is guilty of draining the milk and poisoning the udders of the cows while sleeping in their pasture, an opinion too absurd to be worth the trouble of refuting. This animal is an inhabitant of the whole of Europe, excepting the colder regions of the north; and even in the warmest countries passes the winter in a state of lethargy, covered with leaves and moss. India, Egypt, Turkey, and Africa, present other species, making up a group of about six; and their habits, as far as known, resemble those of the European species.

Differing from the hedgehog in many essential points, but possessed like it of a spiny coat of mail, and the faculty of rolling up, though not into so complete a ball, are three animals peculiar to Madagascar, which form the genus *Centetes*: two of these were known to Linnæus, and placed by him in the genus *Erinaceus*, from which they are now rightly separated. These animals are the TENREC, (*Centetes acandatus*;) the TENDRAC, (*C. setosus*;) and the varied TENREC, (*C. semispinosus*;) which last is scarcely larger than a mole. The first has been naturalized in the Isle of France. All we know of them is, that they are nocturnal, and, although in the torrid zone, pass three months of the year in lethargy. In each jaw there are four or six incisors and two large canine, behind which are placed one or two little teeth, and four triangular and pointed molars. They have no tail, and the muzzle is very pointed.

The next genus of the *Insectivorous Family* which we shall notice is that of the SHREWS, (*Sorex*.) The Shrews form a numerous group, confined to the older continents, and almost entirely of recent discovery. The sole species which was formerly known to naturalists, before strict accuracy characterized scientific studies, was confounded with the mice, a genus belonging to quite a different order, namely, *Rodentia*; and Pliny notices it under the name of *Mus araneus*, from which its present French name, *musaraigne*, is derived. On Pliny's authority it was long retained among the mice, till Daubenton, in 1756, added another to the list and confirmed

the propriety of the genus *Sorex*, which had then been recently established.

The Shrews are yet accounted as *kinds of mice* by persons in general; they have, however, no immediate relation to these animals; and if any of our intelligent readers will take the trouble to examine and compare their teeth together, he will immediately be satisfied upon the subject. The two middle incisor teeth above are crooked and indented at their base; those of the lower jaw prolonged and inclining; five little teeth in the upper jaw succeed; two only in the lower; and after these, in each, three pointed molars; to which, in the upper jaw, a little tubercular molar is added, which terminates the series.

These little animals are easily distinguishable from mice by the conical form of the head also, and the attenuated nose tapering to a long projecting point. They place the entire sole of the foot on the ground, a circumstance which gives the legs the appearance of shortness; the ears are rounded; along the sides of the body are small glands secreting a humor of a peculiar and unpleasant odor. In England there are three species; the one the well known common Shrew, (*Sorex araneus*;) which frequents meadows and sunny banks, where its shrill piercing cry may be often heard in spring and summer. In August numbers of these animals are found dead by the sides of banks and along the pathways, without any known cause to account for this extensive mortality.

The two others are called *Water Shrews*, and frequent the banks of rivers, ponds, and marshes. The larger species is the *Sorex fodiens*, of which we have the following notice in No. 23 of *Loudon's Magazine*, for 1832:—"This curious little animal is not often seen except by those acquainted with its habits; it resembles the common Shrew, but is twice the size; the upper part of the body black; beneath, dirty white; the fur like that of a mole. Water Shrews live in the banks of rivulets and spring-water ditches, and appear to collect their food, which probably consists of the larvæ of the ephemeral flies, from among the loose mud. If cautiously watched, they being naturally shy, they may be seen crouching at the mouths of their holes looking intently into the water. Should a shoal of minnows or sticklebacks pass near, the Shrew plunges amongst them, but seldom succeeds in making a capture; and, retiring to his station, looks out for another chance. They dive with much adroitness, and can remain under water for the space of a minute. Their fur repels the water from their bodies, as while they are submerged, they appear to be almost white. When pursued by the weasel, they drop into the water and pass to the opposite side."

The other species is very similar in