

with white cloaks; and light yellow shoes. Many of the women of the poorer sort wear their dress till it becomes so dirty, patched, and ragged, that you can scarcely trace what it has originally been. Some Breton females, however, appear decently dressed in their singular costume, and are of a florid, healthy look.

In some districts the women wear high muslin caps. Knitting-pins in hand, they work away at stockings, whether walking, talking, or with a load of butter on the head. When not at work the knitting-pins are stuck in their hair. When the great Breton commander, Du Guesclin, was a prisoner to Edward the Black Prince, and was asked how he could raise the large sum required for

his ransom, he replied, that "the women of Brittany would rather spin for a year, and ransom him with the work of their distaffs, than that he should remain prisoner."

There are large forests of chestnut and oak trees in the land, whose fruit, boiled in milk, supplies the means of subsistence during the greater part of the year. The people grovel on from age to age, with little change in their habits. If you ask a Breton why he does not plant more fruit-trees, he will tell you his father never did so. If you say, "Why not grow more corn, instead of depending so much on chestnuts and acorns?" he will answer, "I have gathered chestnuts and acorns from the time when I was a boy; why should I not do so now?"

THE BEAVER FAMILY.



THE castoridæ, or beaver family, have two incisor or cutting teeth and eight molars in each jaw, twenty in all, and are particularly distinguished from all the rest of the order by their broad horizontally flattened tail, which is ten or eleven inches long, covered with hair, similar to the back, for about a third of its length; the rest of it is covered by hexagonal scales. The body of the animal is about forty inches long, having two sorts of hair upon its skin: one which is long, stiff, and elastic, is of a grey colour near the base, and terminated by shining reddish-brown points; the other is short, very fine, and of a silver-grey colour.

The beaver was once a very common animal in Europe, but the value of its fur has led almost to its extermination.

It is still found along the Euphrates in Asia; and by some of the larger rivers of Europe, as the Rhone, the Danube, the Weser; and in the Nuthe, near its

confluence with the Elbe, in 1828 there was a small colony which worked on the co-operative system. Naturalists have been unable to discover any difference in the habits or structure of the American and European species, and it may be assumed that they are identical. "The beaver being so plentiful (says Hearne, the traveller), the attention of my companions was chiefly engaged on them, as they not only furnished delicious food, but their skins proved a valuable acquisition, being a principal article of trade as well as a serviceable one for clothing. The situation of the beaver-houses is various. Where the beavers are numerous they are found to inhabit lakes, ponds, and rivers, as well as those narrow creeks which connect the numerous lakes with which this country abounds; but the two latter are generally chosen by them when the depth of water and other circumstances are suitable, as they have then the advantage of a current to convey wood and other necessaries to their habitations, and because,

in general, they are more difficult to be taken than those that are built in standing water. They always choose those parts that have such a depth of water as will resist the frost in winter, and prevent it from freezing to the bottom. The beavers that build their houses in small rivers, or creeks, in which water is liable to be drained off when the back supplies are dried up by the frost, are wonderfully taught by instinct to provide against that evil by making a dam quite across the river, at a convenient distance from their houses.

The beaver-dams differ in shape according to the nature of the place in which they are built. If the water in the river, or creek, have but little motion, the dam is almost straight; but when the current is more rapid, it is always made with a considerable curve, convex toward the stream. The materials made use of are driftwood, green willows, birch, and poplars if they can be got; also, mud and stones intermixed in such a manner as must evidently contribute to the strength of the dam; but there is no other order or method observed in the dams, except that of the work being carried on with a regular sweep, and all the parts being made of equal strength. In places which have been long frequented by beavers undisturbed, their dams, by frequent repairing, become a solid bank, capable of resisting a great force both of water and ice; and as the willow, poplar, and birch generally take root and shoot up, they by degrees form a kind of regular planted edge, which I have seen in some places so tall that birds have built their nests among the branches.

The beaver-houses are built of the same materials as their dams, and are always proportioned in size to the number of inhabitants, which seldom exceeds four old and six or eight young ones; though, by chance, I have seen above double the number. Instead of order or regulation being observed in rearing

their houses, they are of a much ruder structure than their dams; for, notwithstanding the sagacity of these animals, it has never been observed that they aim at any other convenience in their houses than to have a dry place to lie on; and there they usually eat their victuals, which they occasionally take out of the water. It frequently happens that some of the large houses are found to have one or more partitions, if they deserve that appellation, but it is no more than a part of the main building left by the sagacity of the beaver to support the roof.

On such occasions it is common for those different apartments, as some are pleased to call them, to have no communication with each other but by water; so that, in fact, they may be called double or treble houses, rather than different apartments of the same house. I have seen a large beaver-house built in a small island that had near a dozen apartments under one roof; and, two or three of these only excepted, none of them had any communication with each other but by water. As there were beavers enough to inhabit each apartment, it is more than probable that each family knew their own, and always entered at their own doors, without any further connection with their neighbours than a friendly intercourse, and to join their united labours in erecting their separate habitations, and building their dams where required. Travellers who assert that the beavers have two doors to their houses, one on the land side and the other next the water, seem to be less acquainted with these animals than others who assign them an elegant suite of apartments. Such a construction would render their houses of no use, either to protect them from their enemies, or guard them against the extreme cold of winter.

So far are the beavers from driving stakes into the ground when building their houses, that they lay most of the

wood crosswise, and nearly horizontal, and without any other order than that of leaving a hollow or cavity in the middle. When any unnecessary branches project inward they cut them off with their teeth, and throw them in among the rest, to prevent the mud from falling through the roof. It is a mistaken notion that the wood-work is first completed and then plastered; for the whole of their houses, as well as their dams, are, from the foundation, one mass of mud and wood mixed with stones, if they can be procured. The mud is always taken from the edge of the bank, or the bottom of the creek or pond near the door of the house; and though their fore-paws are so small, yet it is held close up between them under their throat; thus they carry both mud and stones, while they always drag the wood with their teeth. All their work is executed in the night, and they are so expeditious that, in the course of one night, I have known them to have collected as much as amounted to some thousands of their little handful.

It is a great piece of policy in these animals to cover the outside of their houses every fall with fresh mud, and as late as possible in the autumn, even when the frost becomes pretty severe, as by this means it soon freezes as hard as a stone, and prevents their common enemy, the wolverene, from disturbing them during the winter; and as they are frequently seen to walk over their work, and sometimes to give a flap with their tail, particularly when plunging into the water, this has, without doubt, given rise to the vulgar opinion that they used their tails as a trowel, with which they plaster their houses; whereas that flapping of the tail is, in my opinion, no more than a custom which they always preserve, even when they become tame and domestic, and more particularly so when they are startled.

Their food consists of a large root, something resembling a cabbage-stalk,

which grows at the bottom of the lakes and rivers. They also eat the bark of trees, particularly those of the poplar, birch, and willow; but the ice preventing them from getting to the land in the winter, they have not any barks to feed on in that season, except that of such sticks as they cut down in summer, and throw into the water opposite the doors of their houses; and as they generally eat a great deal, the roots above mentioned constitute a principal part of their food during the winter. In summer they vary their diet, by eating various kinds of herbage, and such berries as grow near their haunts during that season. When the ice breaks up in the spring, the beavers always leave their houses, and rove about until a little before the fall of the leaf, when they return again to their old habitations, and lay in their winter stock of wood. They seldom begin to repair their houses till the frost commences, and never finish the outer coat till the cold is pretty severe, as has been already mentioned. When they erect a new habitation, they begin felling the wood early in the summer, but seldom begin to build until the middle or latter end of August, and never complete it till the cold weather be set in.

Persons who attempt to take beaver in winter should be thoroughly acquainted with their manner of life, otherwise they will have endless trouble to effect their purpose, because they have always a number of holes in the banks, which serve them as places of retreat when any injury is offered to their houses, and in general it is in those holes that they are taken. When the beavers which are situate in a small river or creek are to be taken, the Indians sometimes find it necessary to stake the river across, to prevent them from passing; after which they endeavour to find out all their holes or places of retreat in the banks. This requires much practice, and is performed in the following manner:—

Every man being furnished with an ice-chisel, lashes it to the end of a small staff about four or five feet long; he then walks along the edge of the banks, and keeps knocking his chisel against the ice. Those who are acquainted with that kind of work well know by the sound of the ice when they are opposite to any of the beavers' holes or vaults. As soon as they suspect any, they cut a hole through the ice big enough to admit an old beaver, and in this manner proceed till they have found out all their places of retreat, or at least as many of them as possible. While the principal men are thus employed, some of the understrappers and the women are busy in breaking open the house, which at times is no easy task, for I have frequently known these houses to be five or six feet thick, and one, in particular, was more than eight feet thick in the crown.

When the beavers find that their habitations are invaded, they fly to their holes in the banks for shelter; and on being perceived by the Indians, which is easily done by attending to the motion of the water, they block up the entrance with stakes of wood, and then haul the beaver out of its hole, either by hand, if they can reach it, or with a large hook made for that purpose, which is fastened to the end of a long stick. In this kind of hunting, every man has the sole right to all the beavers caught by him in the holes or vaults; and as this is a constant rule, each person takes care to mark such as he discovers by sticking up a branch of a tree, by which he may know them. All that are caught in the house are the property of the person who finds it. The beaver is an animal which cannot keep under water long at a time, so that when their houses are broken open, and all their places of retreat are discovered, they have but one choice left, as it may be called, either to be taken in their house or their vaults; in general they prefer the latter, for where there is

one beaver caught in the house, many thousands are taken in the vaults in the banks. Sometimes they are caught in nets, and in the summer very frequently in traps.

The beavers are very cleanly in their habits. I am the better enabled to make this assertion from having kept several of them till they became so domesticated as to answer to their name and follow those to whom they were accustomed in the same manner as a dog would do, and they were as much pleased at being fondled as any animal I ever saw. In cold weather they were kept in my own sitting-room, where they were the constant companions of the Indian women and children, and were so fond of their company that when the Indians were absent for any considerable time, the beaver discovered great signs of uneasiness, and on their return showed equal marks of pleasure by fondling on them, crawling into their laps, lying on their backs, sitting erect like a squirrel, and behaving like children who see their parents but seldom. In general, during the winter, they lived on the same food as the women did, and were remarkably fond of rice and plum-pudding; they would eat partridges and fresh venison very freely, but I never tried them with fish, though I have heard they will at times prey on them. In fact there are few graminivorous animals that may not be brought to be carnivorous."

Having thus presented the reader with a narrative of the habits of the American beaver in a state of nature principally, we now proceed to give one descriptive of its manners in captivity. The account is from the pen of Mr. Broderip, whose pet the beaver was, and is interesting inasmuch as the faculties displayed by the animal must, from its extreme youth, have proceeded from unassisted instinct.

"The animal arrived in England in the winter of 1825, very young, being small and woolly, and without the covering of

long hair which marks the adult beaver. It was the sole survivor of five or six which were shipped at the same time, and it was in a very pitiable condition. Good treatment quickly restored it to health, and kindness soon made it familiar. When called by its name, 'Binny,' it generally answered with a little cry, and came to its owner. The hearth-rug was its favourite haunt, and thereon it would lie stretched out, sometimes on its back, sometimes on its side, and sometimes flat on its belly, but always near its master. The building instinct showed itself immediately it was let out of its cage, and materials were placed in its way, and this before it had been a week in its new quarters. Its strength, even before it was half-grown, was great. It would drag along a large sweeping-brush, or a warming-pan, grasping the handle with its teeth so that the load came over its shoulder, and advancing in an oblique direction till it arrived at the point where it wished to place it. The long and large materials were always taken first, and two of the longest were generally laid crosswise, with one of the ends of each touching the wall, and the other ends projecting out into the room. The area formed by the cross brushes and the wall he would fill up with hand-brushes, rush baskets, books, boots, sticks, cloths, dried turf, or anything portable. As the work grew high he supported himself on his tail, which propped him up admirably, and he would often, after laying on one of his building materials, sit up over against it, appearing to consider his work, or, as the country people say, 'judge it.' This pause was sometimes followed by changing the position of the material 'judged,' and sometimes it was left in its place.

After he had piled up his materials in one part of the room (for he generally chose the same place), he proceeded to wall up the space between the feet of a chest of drawers which stood at a little

distance from it, high enough on its legs to make the bottom a roof for him, using for this purpose dried turf and sticks, which he laid very even, and filling up the interstices with bits of coal, hay, cloth, or anything he could pick up. This last place he seemed to appropriate for his dwelling; the former work seemed to be intended for a dam. When he had walled up the space between the feet of the chest of drawers, he proceeded to carry in sticks, cloths, hay, cotton, and to make a nest; and when he had done he would sit up under the drawers and comb himself with the nails of his hind feet. In this operation, that which appeared at first a malformation was shown to be a beautiful adaptation to the necessities of the animal. The huge, webbed hind feet of the beaver turn in so as to give the appearance of deformity; but if the toes were straight instead of being incurved, the animal could not use them for the purpose of keeping its fur in order and cleansing it from dirt and moisture.

Binny generally carried small and light articles between his right fore-leg and his chin, walking on the other three legs; and large masses, which he could not grasp readily with his teeth, he pushed forwards, leaning against them with his right fore-paw and his chin. He never carried anything on his tail, which he liked to dip in water, but he was not fond of plunging in the whole of his body. If his tail was kept moist he never cared to drink; but if it was kept dry it became hot, and the animal appeared distressed and would drink a great deal. It is not impossible that the tail may have the power of absorbing water, like the skin of frogs, though it must be owned that the scaly integument which invests that member has not much of the character which generally belongs to absorbing surfaces.

Bread, and bread and milk and sugar, formed the principal part of Binny's food; but he was very fond of fruits and roots."