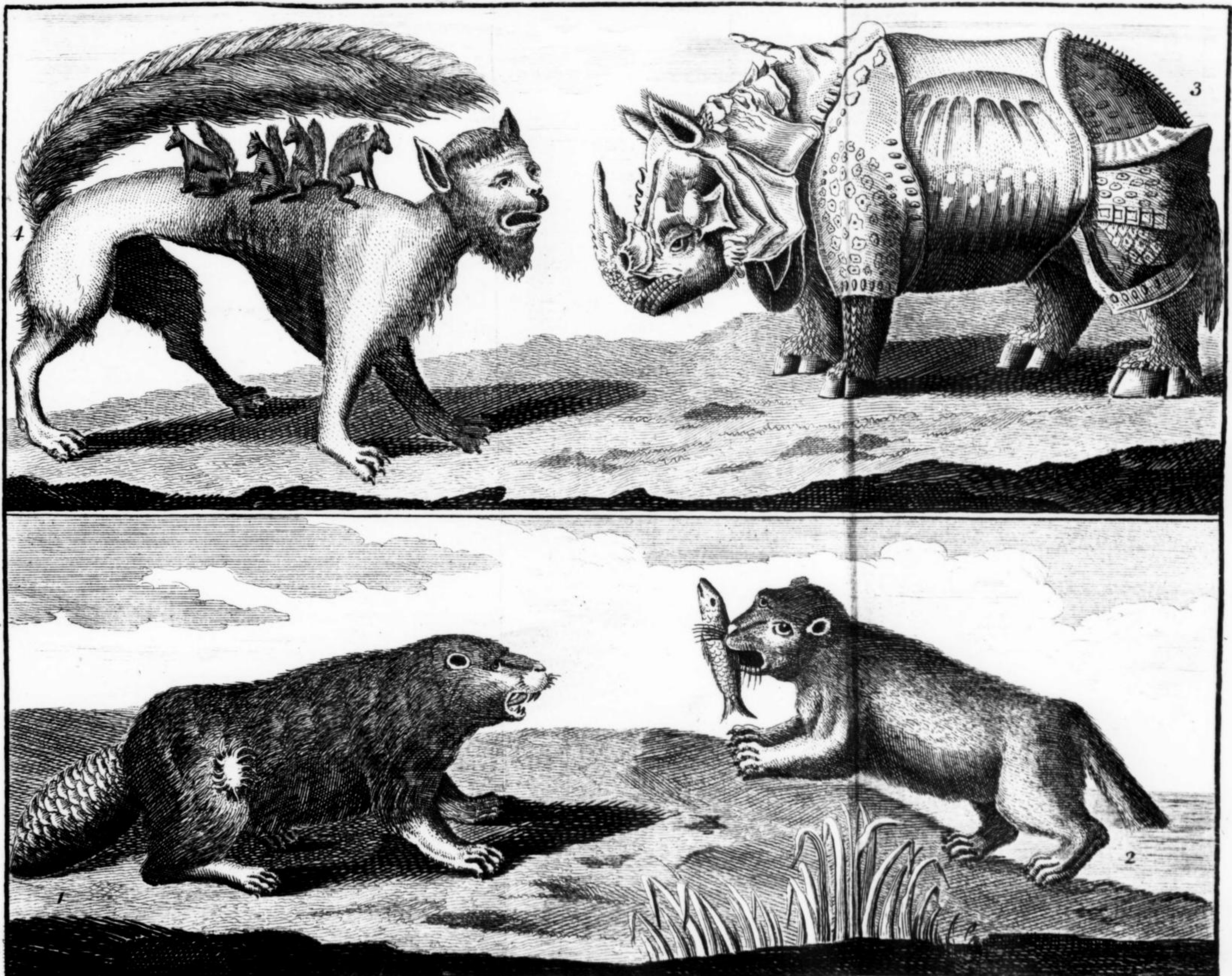


GOD'S Providence Display'd in the Animal Creation of Brute Beasts.



Engraved for the Universal Magazine, according to Act of Parliament, 1719, for J. Hinton at the Kings Arms, in St. Pauls Church Yard, London.

*An Explication of the Plate of ANIMALS, intitled, GOD's Providence
displayed in the ANIMAL CREATION.*

ALL the parts of our terraqueous globe, fit for an animal to live in, and to act in, are sufficiently stocked with proper inhabitants. The watery element, though, to the common and unthinking spectator, it appears unfit for respiration and life, abounds with creatures fitted for it: its bowels are abundantly stored, and its surface is well bespread. The earth, also, is plentifully stocked, in all its parts, where animals can be of any use: and, what should be most admired, and plainly indicateth a divine management in the case, is, that those creatures are manifestly designed for the place in which they are, and for the use and services they perform therein.

If the animals on this globe had started up by chance, or been placed otherwise than under the direction of a divine providence, all the animal world would have been in a confused, inconvenient, and disorderly mixture. One animal would have wanted food, another habitation, and all of them safety: they would have poisoned, starved, or greatly incommoded one another, as they would all have coveted one thing and place. But now, as providence has ordered it, the globe is equally bespread: no place wanteth its proper inhabitants; nor is any creature destitute either of a proper place, nor of any thing necessary for its life, health, and pleasure. As the surface of the terraqueous globe is covered with different soils, hills, and vales; with seas, rivers, lakes, ponds; with divers trees, plants, and shrubs in the several parts of it; so all these places have their animal inhabitants, whose organs of life and action are manifestly adapted to such and such places and things; as may be exemplified in part,

By the *Beaver* (fig. 1.) whose make, sagacity, and use to other parts of the creation, wonderfully testify the truth of a divine providence. This creature is generally about four feet long from head to the rump, and fifteen inches broad. It is covered with two sorts of hair, one long, the other a soft down, which, in temperate climates, is reddish; but generally black in cold regions. The down, an inch long, may properly be called its cloathing, designed by providence to keep it warm; for it is extremely fine, and close laid upon the skin: and the long hair is so spread over all, as to preserve the down cloathing from dirt and wet.—Of the down are made the best hats and furs.

This creature, whether male or female, is furnished with two bags under its intestines, from whence it ejects a liquid substance that soon congeals in the air, and under the name of *Castoreum*, becomes an excellent medicine in the hands of the Physician, for the use of

man, against poisons, vapours, and other indispositions, as you will find hereafter.

His composition, in every other respect, is marvellous. His mouth is beset with very strong teeth, riveted deeply into his jaws with a long and crooked root: providence having designed that the *beaver* shall cut wood with them, wherewith to build his habitation, as well as to furnish himself with, and to masticate, his food.—His forefeet resemble those of an ape, rat, and squirrel, who hold what they eat in their paws, as he does: and with these he digs, softens, and works the clay or loam, which is also necessary for his preservation: and, particularly, the structure of the hind feet of this creature is very extraordinary, and plainly demonstrate, that its maker did design it to live in the water, as well as on the land; they seem more proper to swim than to walk with; the five toes of each foot being joined like those of a goose by a membrane, which keeps him above water.—His tail is long, a little flat, and entirely covered with scales, supplied with strong muscles, and perpetually lubricated with oil or fat: because, as this animal is an architect from its birth, he uses his tail, instead of a hod, to carry his clay or mortar, and as a trowel to spread and form it into an incrustation: the scales preserve the flesh from the cold, humid, and other noxious qualities of the burden; and the oil or fat, which he rubs upon these scales, with his snout, from the bags abovementioned, defends them from the noxious air and water.

Their habitations, and the manner of building them, carry in them the visible marks of the same directing providence. And as they chuse to cohabit in great numbers in the same mansion, unless forced to separate by violent heats, inundations, pursuit of hunters, or by scarcity of provision, or by the extraordinary increase of their offspring, they chuse a situation near some rivulet, and abounding with sustenance, where they may form a convenient *bagnio*.—The first work is to build a mole or causeway, in which the water may rise to a level with the first story of their habitation. This causeway is built of wood and clay, about twelve feet thick at the bottom, descending in a slope on the side next the water, which, in proportion to its elevation, gravitates upon the work, and presses it with a strong tendency towards the earth. But the opposite side is raised perpendicularly, like our walls: and the slope, which at its basis is twelve feet thick, diminisheth so much towards the top, that the summit does not exceed two feet in breadth. In this work the *beavers*, with great ease, cut their wood, though as thick as one's thigh, into pieces,
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from two to six feet in length, or in proportion to the ascent of the slope: drive them into the earth very close at their extremities, and lace them together with boughs, closing up all the openings within and without with a strong plaister made of clay, so as to prevent all leakage out of their bagnio or reservoir. And if the water increases upon them, they raise their wall higher proportionally. They are likewise very sensible that such materials are more easily transported by water, than brought by land; and so take the opportunity of its increase to swim with mortar placed on their tails, and stakes of wood between their teeth, to the proper place where they are necessary.—When the causeway or dike is finished, they begin their apartments or cells, which are oval or round, and divided into three partitions one above another. They use the same materials and industry in their habitations, as before in building the dike. But the walls of these are only two feet thick, and perpendicular. With their teeth they cut off all the wood that projects beyond the perpendicular of these walls; and, with a mixture of clay and dry grass, they rough-cast the out and inside of the work by the help of their tails.—The first partition is sunk below the level of the dike, and generally full of water: the other two are formed above it in a very solid manner on the edge of their causeway, and always in stories, that, in case the water should ascend, they may dwell in a higher situation. If they find any little island near the reservoir, they fix their dwelling there, which is then more solid, and they are less incommoded by the water, in which they can live but a short time: but if they do not meet with such a retreat, they fortify their building against wind and water by driving stakes into the earth with their teeth.—At the bottom they strike out two openings to the stream; one to lead them to the place where they bathe, and which they keep always very decent: the other is a passage to that quarter where they ease themselves. Besides these, there is a third apartment much higher, so built, as to prevent (as much as they can) their being closed up with the ice. And sometimes they build their houses entirely on dry land, and sink ditches five or six feet deep, to carry them into the water.

The dimensions of these apartments are proportioned to the number of inhabitants. Twelve feet in length, and ten in breadth, are sufficient for eight or ten *beavers*. And, when all is finished below, they vault the top or roof in an oval form, and like the handle of a basket.

They associate to the number of ten or a dozen; seldom more: for they are better acquainted with their own interests, than to live in a tumultuous manner. And as they are an amicable and sagacious sort of animals, they pass the winter together with as much harmo-

ny, as, you have heard, they work in summer with diligence.

There are another sort of *beavers* called *Terriers*, who live in caverns dug by themselves in a rising ground: from which, if at a distance from the water, they scoop subterraneous trenches, declining from ten to a hundred feet in depth. In which they also provide several retreats, by gradual ascents, to shelter them from the water when it flows. Their beds are made of chips, which, as an ingenious author words it, serve instead of a quilt; and of grass, which accommodates them in the nature of a feather-bed.

All these works, especially in cold regions, are compleated in *August*, or *September*. During the summer season they regale themselves with all the fruits and plants the country will afford. But in the winter they are content with willow, ash, plane, and other sorts of dry wood, stored in a proper season, and steeped in water, in quantities proportionable to their necessary consumption; for the digestion of which hard meat, kind providence has provided this animal with a double stomach, to facilitate the digestion of such solid food at two operations. The method of collecting and storing up their food for winter is also very extraordinary. They cut boughs, from three to six feet in length; the large pieces are carried to their magazine by several *beavers*, who range themselves methodically for that labour and service. The smaller are conveyed to the same place by one alone: but they take different ways, each individual having his proper walk assigned him, to prevent the labour being interrupted. Again, they build up their piles with as much art as they use in other particulars. The dimensions of their pile of timber food are regulated in proportion to the number of inhabitants; about thirty-feet in a square surface, and ten thick, for a company of ten *beavers*. But these parcels of wood are not piled up in one continued heap, as you pile up billets, or babbins, but they are laid a-cross one another, with cavities between, for the conveniency of drawing out what quantity they want; they always using first the parcel at bottom, which lies in the water. And when it is taken up for use, they cut this wood into small pieces, and convey it to their proper cell, where the whole family come to receive their proper share. But, if the winter proves open, and the woods undisturbed with hunters, they frequently regale their young ones, with a fresh collation of green twigs, in the adjacent country. And the hunters, who have observed how these creatures delight in green food, frequently endeavour to decoy them out of their cells, by placing a parcel of such wood about their lodge, and lay their traps, or nets, to ensnare them, if they come out to eat thereof. If the winter proves severe, and has frozen them up, these hunters then try to take them by break-

breaking the ice, at the entrance of their cells, and, when the *beaver* puts out its nose for the benefit of the air, they are placed conveniently to knock it down, and kill it with hatchets: Or, making a large opening in the ice, they cover it with a very strong net, and overturn the whole lodge; upon which the *beavers*, who think to escape by their usual way, by falling into the water, and emerging at the hole in the ice, fall into the snare, and are taken.

These animals are in many parts of *France*, *Italy*, and *Germany*; but they are most numerous in *Poland*, *Lithuania*, *Muscovy*, the lakes of *Canada*, and *Hudson's-bay*, in *America*. And it is almost a general rule, that the fur is finer, longer, and softer, according to the coldness of the regions they are bred in.

If you would take hold of a *beaver*, seize him by the tail, and he cannot bite you; and you may, by that means, turn him as you please. They generate in the beginning of *Summer*, and bring forth young in the end of *Autumn*, of which they are exceedingly fond. They cry like a human infant; and supply us with several extraordinary particulars for health and cloathing. It is true, being half flesh and half fish, the *beaver* is not palatable, except the tail, and the hinder legs, which are sweet like the *tunny*, and accounted a great dainty, both boiled and roasted.

From this animal we have the valuable medicine, called *Castoreum*, of which the public has received so many fabulous accounts, as if it was made of the testicles of the *beavers*; whereas nothing is more certain, than that the female produceth the same, as the male *beavers*; which is a liquid matter, contained in small bags or purses, about the bigness of a goose's egg, situated near the *Anus*. The use of this liquor, to the animal itself, is to create appetite; which, at proper times, that creature presseth with its foot, out of the bag. When these bags are taken off, the matter dries, and condenses, so as it may be reduced to powder, and by hanging in a chimney, it will grow to the consistence of wax. It is oily, of a sharp bitter taste, and a strong disagreeable smell. The *Russians*, according to the *Philosophical Transactions*, No. 193, p. 501, first take the bags (falsely called *stones*) and get the milk out of them as clean as they can; then they set on the fire a skillet, or kettle of water, big enough to contain the quantity of bags designed for cure; after the water boils, they put into it half a shovel of clean wood-ashes, and then tying the bags together by pairs, they put them into the water also, and boil them for seven minutes. Being taken out of the water, they smoke and dry them well, for the space of an hour, over a fire of birch-bark; then they hang them up in a kitchen, or in the air, to dry for a week; and when they are perfectly dry and hard,

they pack them up in casks, or otherwise, for sale. Its use to the human species is great; for it fortifies the head, and all nervous parts; it rallies the languishing spirits, resists poisons, provokes the *menfes* in women, cures lethargies, helps apoplexies, vertigo's, tremblings and suffocations in women; and is said to bring away both the birth, and after birth, and a dead child.

It is prepared several ways; but the powder, according to *Pomet*, may be thus prepared:

Take pure Castor in fine powder two ounces; saffron, pepper, bay-berries, tartar vitriolated, camphire, of each one drachm; mix them, and take of this mixture, from one drachm, to four scruples, in any convenient vehicle.

But as this valuable medicine has put many upon means to adulterate it with honey, *Gum Ammoniacum*, blood, and powder of kidneys, &c. great care must be had in its use, lest you be imposed upon by a bad commodity, which you may distinguish by squeezing it; for the sophisticated is softish, and yields a liquid stinking honey; whereas the natural is hard, heavy, brisk in smell, and full of filaments.—The best *Castoreum* is that of *Dantzick*: and the largest lumps; and those that smell strongest, especially if heavy, and well fleshed, are in greatest esteem.

The *beaver* also yields an oil, from its fat, called oil of *Castor*, which in its liquid state is good in several sorts of ointments, and good against nervous disorders, palsy, convulsions, hysterical fits, apoplexy, and falling sickness. A proper ointment for any of those purposes may be made thus:

Take oils of rosemary, nutmegs, amber, and mace, of each one drachm: and half a pound of beavers's fat. Mix them. f. a.

The very skin of this creature burnt to ashes, and the powder applied to the nose, will stop its bleeding.

Its use in the necessaries of life, as cloathing, is also very great. Some people have attempted to manufacture its hair and down into cloths, flannels, stockings, &c. with a mixture of wool. But as these stuffs were found by experience to lose their dye, when wet, and to remain hard and stiff, as felts, after they had been dried; their chief use now is to cloath the wild *Americans*, on the shores where they abound; to supply *Europe* with rich furs for tippets, &c. in cold seasons; and for hats chiefly, all over the world. And, after the hair is cut off, the skin is serviceable for mails, trunks, slippers, &c.

This animal did once delight on the banks of the rivers in this island; but it has been long entirely extirpated, and left us only its resemblance, without its good properties, in the *otter*, of which take the following remarks.


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An Account of the OTTER, Fig. 2.

The *Otter* is supposed to be of the *Castor* or *Beaver* kind, being, like it, an amphibious creature, and living both in the water and on land; beside that, the resemblance in point of shape is such, as, were his tail off, he would in all respects be like the *beaver*, differing in nothing but habitation; the *beaver* frequenting both the salt water and the fresh, but the *otter* only the fresh.

Though the *otter* lives much in the water, he does not breathe like fishes, but after the manner of four-footed animals.—He is web-footed like our water-fowl, and can endure to be under water a long time without respiration; and yet in fishing he is frequently found to pop up his nose for breath.—He has an admirable smell, whereby he will directly wind a fish in the water a mile or two off; and is a most pernicious beast to a fish-pond, his dexterity at diving, and hunting under water, being such, that scarce any fish escape him: if by painful hunting ashore he cannot fill his belly, he will feed on herbs, snails, or frogs: he will swim a-fishing two miles together, always against the stream, that, when his belly is full, the current may carry him down again to his lodging, which is near the water, artificially built with boughs, sprigs, and sticks, couched together in fine order; not much unlike the *beaver's*.

The flesh of this beast is cold and fishy, as feeding on stinking fish: for which reason it is not eaten among us. Though among the *Germans* it is a pretty common food; and the *Carthusian* friars, who are forbidden to eat all manner of flesh, are allowed this. Some,

 *The Description of the Beasts, Fig. 3, 4, on the Plate facing Page 230, will be inserted in our next.*

The Political State of Europe, &c.

November 1.

L Eghorn, Oct. 2. We lately have felt several shocks of an earthquake, but without any considerable damage. We are more affrighted with a ship that arrived a few days ago from *Algiers*, with the plague aboard. Thirty of the crew died in its passage; the rest are confined in the *Lazaretto*.

November 2.

London. They write from *Philadelphia*, that on the 13th of *August* last, arrived there *Conrad Weiser*, Esq; and with him the Deputies of eleven different nations of *Indians*, in order to transact some affairs with that government, viz. the Deputies of the *Onondagas*, *Senecas*, *Mohawks*, *Cayngos*, *Oncidas*, *Tuscaroras*, *Sabawanas*, *Nanticoques*, *Delawares*, *Mohigans*, and *Tutelos*; the whole number amounting to 260 persons.

November 3.

Genoa, Oct. 18. We have an account here, that the *Dey of Algiers* has sent dispatches to

in *England*, have, of late, said much in praise of *otter-pye*.

The *otter* is to be hunted by particular dogs, called *Otter-hounds*; and also with special instruments, called *Otter-spears*.—To find him out, some are to go on one side of the river, and some on the other; beating all the way on the banks, with the dogs following.—Thus it is soon found, if there be an *otter* in that quarter; for the *otter* cannot endure long in the water, but must come forth to make his spraints; and in the nights, sometimes, to feed on grass, and other herbs. If the hounds find an *otter*, look in the soft and moist places, to learn by the prints which way he bent his head: if these make no discovery, it may be partly perceived by the spraints.—This done, follow the hounds, and lodge him as a *Hart* or *Deer*.

The *otter* always endeavours to keep to the water, where he is master.—In hunting him, therefore, you are to be ready with your spears, to watch his vents, for that is the chief advantage. If you perceive where he swims under water, strive to set a stand before him, where you expect he will vent, and there endeavour to strike him with the spear: if you miss, pursue him with the hounds, which if they be good, and well entered, will come chaunting and trailing along by the river-side, and beat every tree-root, every osier bed, and tuft of bulrushes; nay, sometimes they will take the water, and beat it like a spaniel, by which means the *otter* can hardly escape.

If the beast finds himself wounded with a spear, he makes to land, where he will maintain a furious battle with the dogs.

the Ministry of *England*, whose contents import, that this *Barbarian* Chief no way intends to give satisfaction to his *Britannic* Majesty, nor to restore the money or other effects, which were taken out of the Prince *Frederick* packet-boat; but, on the contrary, claims considerable sums from the court of *London*, for reasons which one of his Ministers, whom he shall send, will lay before the King. It is said, that they continue at *Algiers* to make great preparations for war; that they have lately launched two ships, one of 50, and the other of 60 guns; and that their rovers are divided into many squadrons from 40 to 60 xebecques each.

Madrid, Oct. 21. A treaty is concluded between this court, that of *France*, and the King of *Sardinia*. It is purely defensive, and designed to maintain in their possessions those of the contractors, whose dominions are situated in *Italy*. It is agreed to comprehend in this treaty the King of the two *Sicilies*.

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