

NATURAL HISTORY

THE MOLE.

This curious little quadruped seems formed to live wholly under the earth, as if the Supreme Being meant that no place should be left wholly untenanted. Were we, from our own sensations to pronounce upon the life of an animal that was never to appear above ground, but be always condemned to hunt for its prey underneath, and obliged, whenever it removed from one place to another, to bore its way through a resisting body, we should be apt to assert that such an existence must be the most frightful and solitary in nature. In the mole, however, though condemned to all these seeming inconveniences, we discover no signs of wretchedness or distress. No quadruped is fatter, none has a more sleek or glossy skin; and though denied many advantages that most animals enjoy, it is more liberally possessed of others, which they have in a more scanty proportion.

The size of the mole is between that of the rat and the mouse; but it in no way resembles either, being an animal entirely of a singular kind, and perfectly unlike any other quadruped whatever. Its nose is long and pointed, resembling that of a hog, but much longer. Its eyes are so small that it is scarcely possible to discern them; and instead of ears it has only holes in the place. Its neck is so short that the head seems stuck upon the shoulders. The body is thick and round, terminating by a very small short tail, and its legs also are short, that the animal seems to lie flat on its belly. Thus it appears to us, at first view, as a mass of flesh covered with a fine shining black skin, with a little head, and scarce any eyes, legs or tail. The ancients and some of the moderns were of opinion, that the mole was utterly blind; but Derham, by the help of a microscope, plainly discovered all parts of the eye that are known in other animals. The smallness of its eyes, which induced the ancients to think it blind, is to the animal a peculiar advantage. A small degree of vision is sufficient for a creature that is destined to live in darkness: a more extensive sight would only have served to show the horrors of its prison, while nature had denied it the means of escape. Had this organ been larger, it would have been perpetually liable to injuries, by the falling of the earth into it; but nature, to prevent that inconvenience, has not only made them very small, but has also covered them with hair. Besides these advantages, anatomists mention another, that contributes to its security; namely, a certain muscle, by which the animal can draw back

the eye whenever it is necessary, or in danger. Indeed, the whole figure and formation of the mole is most admirably adapted to its manner of living, and strikingly illustrates the wisdom and skill of the Almighty Creator.

THE TORPEDO

This fish is remarkable for its shape and character. It is distinguished by its short and somewhat fleshy tail, and a head nearly as large as its body. Its teeth are small and very sharp. It attains a very large size, and is said sometimes to weigh nearly 100 pounds. Fishermen call it the *numb fish* or *cramp-fish*. They are not very numerous, at least, they are not often taken. Those few are usually caught by the hook and line, in fishing for cod. They frequent sandy coasts, and are found both in Europe and America.

The electrical apparatus, which gives this fish the power of shocking or benumbing the animal it touches, consists of small membranous tubes, disposed like honey-comb, and divided by horizontal partitions, into small cells, which are filled by mucous substance. They are situated between the gills and the forward fins.

The power of the torpedo, to benumb animals, enables it not only to secure its food, but to defend itself against enemies. Whoever attempts to lay hold of it receives a sudden, paralyzing shock in his arms, and small fishes, it is said, are completely stunned by it.

Not only the torpedo, and the electrical eel possess this electrical faculty: it is stated by naturalists, that the African eelish and several other fishes have the same power, though in a much smaller degree.

COMMON THINGS

No. 2.—COMBUSTION

The first time an infant witnesses the burning of a candle or the fire, he views it with intense interest, and is not satisfied with seeing, but is eager to learn its nature by feeling. Putting the finger into a candle is a chemical experiment we have probably all tried, and learned from it an important lesson. It is only because combustion is common, that it is ever viewed with indifference.

The uses of combustion, like those of evaporation, are too numerous to admit, and too common to need enumeration. We witness and experience them, every time we dispel from our dwellings, the darkness of night or the frost of winter. The thousands of steamboats accommodating almost mil-

lions of passengers, are moved by its power. Mechanics resort to it daily, and some of them constantly. Our hot coffee, roasted beet and rich puddings remind us of it.

A half century ago, the process of combustion, although so interesting and so important, was misunderstood, and the theory respecting it exactly wrong, or opposite to truth. And though it is now well understood and perfectly familiar and simple, the present occasion will not admit of an explanation. It may be given hereafter.

OXYGEN

This is not perhaps a very common name, but the thing is more common than any other, with the exception of heat. It forms a large, and by far the most interesting part of our atmosphere, much the greatest part of water, a portion of every vegetable from the oak to the mould upon bread, is essential to animal matter, is a part of every mountain and every particle of dust, is combined with most metals in their ores, gives pungency to acids, and an opposite power to alkalis.

In the atmosphere, it supports life, carries on combustion, changes metals into rust and paints, gives the beautiful colours to our dyes, bleaches our linens, carries on fermentation in yeast, in bread, in beer and in wine, aids the farmer in preparing his soil, and performs innumerable other services for him, and every other living thing.

HYDROGEN

Another uncommon name, but a very common thing. Except the substance last mentioned, it is the only ingredient which composes water, and is an essential ingredient in every animal, and vegetable substance. That and oxygen are almost the sole agents in producing a blaze, in the wood or coal fire, the candle, the lamp and the gas light. Although an ingredient in water, the common destroyer of combustion, when separated from its oxygen, it is itself highly combustible, and produces the combustion, by again uniting with its oxygen. It is the lightest of all known substances, and is hence used for raising balloons.

The process of separating hydrogen from the oxygen, which together compose water, is simple and easy. It is done by passing the vapor of water through a red hot iron tube, or easier by putting iron filings into water, and adding a little sulphuric acid.

NITROGEN

What uncommon names for common things, and there is so much gas mixed with them—oxygen, hydrogen, nitrogen—and it would seem for a temperance society too much gin. But it is a very temperate kind