

THE THORNBAC.

SKATES AND LAMPREYS.



ANY species of skates, or rays, are natives of our coasts. The singular depression of these fish, the wing-like expansion of their side-fins, or pectorals, their long and spiny tails, their peaked snout, the position of the eyes and temporal orifices on the top of the head, and of the mouth, nostrils, and gills, orifices on the under surface, render them at once distinct from all other fishes. In these skates, or rays, the internal surface of both the upper and lower jaws are covered with a close array of teeth, like a tessellated pavement; in some species these teeth are flat or rounded, to act as crushers; in others, they are sharp and conical; and what is singular, the males of some species have the teeth sharp, the females rounded or flat, and the young of both sexes flat teeth. Few fish are more voracious than these tenants of the muddy or sandy bed of the sea; they feed on crustacea and shell-fish, crushing them with ease; their

movements are undulatory, or sliding, and performed by flappings, more or less violent, of their wing-like fins, the long slender tail being lashed from side to side. The skates produce their young in horny cases, much resembling those of the dog-fish, but broader in proportion, and with thicker and shorter filaments. They breed in the spring and summer, and are consequently in the best condition during the winter, and the flaky flesh of various parts is then very delicate. The females of the skates, or rays, of most common occurrence, are called by the fishermen maids; as the skate-maid, the thornback-maid, etc.

Of the species most frequently met with, we may notice the long-nosed skate (*Raia chagrinea*), a large species, and at once distinguishable by its long, slender, tapering snout. In the old males the teeth are very sharp, but flat in the females. Besides this, there is the true skate (*Raia batis*), also called the blue or grey skate. In this species both sexes when adult have sharp teeth. It is common on our coast.

A species, termed the sharp-nosed ray, or white skate (*Raia oxyrhynchus*), is taken in abundance, and great numbers are sold at Plymouth to the French fishermen for their markets during Lent, as it is in high estimation as an article of food. Its nose is not so much elongated as it is sharp and pointed. The male has sharp teeth, and the skin of the upper surface is spiny.

The homelyn, or spotted ray (*Raia maculata*), is another common species on our coast, and is to be seen in considerable abundance in the London markets. The upper surface is variously spotted.

The thornback (*Raia davata*) is also among the most frequent species in our seas, and is taken in great numbers for the markets, where the female is sold as the maid. This species, like the rays in general, is in perfection in winter, but is chiefly taken during the spring, when it leaves the deep sea for the shallower parts in order to deposit its roe. Its fins are very ample, and the upper surface is studded with recurved conical spines. The teeth of the two sexes differ very decidedly. Like the rest of its tribe, this species preys on crustacea, shelled mollusks, soles, the sand-lance, and other ground fish. Some other species of this group are classed among British fishes, but they are rare.

Among the cartilaginous fishes with fixed gills are to be placed those eel-like slimy fishes, termed lampreys and lamperns, which form a distinct family (*Petromyzidæ*). These singular creatures have the lips thick, flexible, and adapted for forming a circular sucker continued around the mouth. The mouth is also circular, and armed with hard tooth-like processes; it is usually concealed by the lips, which cover it when not acting as a sucker. On each side of the neck are seven branchial orifices, opening into branchial cells. The respiratory apparatus of the lamprey engaged the attention of Sir E. Home, and it would appear that when the lamprey clings to

a stone, by means of its sucking mouth, that the water is received in through the orifices on one side, traverses the internal apparatus, and is discharged from the orifices of the opposite side, a regular succession of currents being maintained. The hinder caudal portion of the body only is furnished with a continuous fin above and below.

The lamprey, or sea lamprey (*Petromyzon marinus*), is widely spread in the seas of Europe and America. It exists in the Mediterranean, as well as in the colder latitudes, and is everywhere migratory in its habits, ascending the rivers in the spring or summer, according to the advance of the warmer season in their countries. Formerly great numbers worked their way up the Thames to a considerable distance, in order to deposit their roe, but few are now taken. In the Severn, there is a periodical influx of these fishes in considerable numbers, during the months of April and May, and also in various rivers which open into the sea, along our southern coast. Many of the Scottish rivers are also visited, but not until summer has set in. They remain in the fresh water about two months, making furrows in the bed, not by boring like the salmon, but by fixing their sucker upon the stones, and removing them from their places, and at this work they assiduously labour. Into these furrows the eggs are deposited, and covered up. The progressive motion of the lamprey in the water is undulatory, like that of an eel, but from time to time it seeks to moor itself to any fixed object that offers, and then darts again onwards. With regard to its food, soft animal substances, and even fish, constitute its nutriment. It fixes on its prey like a leech, and rasps away with its hard teeth till it deeply penetrates. When full grown, this species attains to the length of twenty-five or twenty-six inches.

The lamprey has from early times been regarded a delicacy for the table; the potted lampreys of Worcester are

celebrated. Henry I., surnamed the Beauclerk, who, as Rapin says, was exceedingly regular in his diet, and "never known to be guilty of any excess in eating or drinking," excepting on the occasion which fatally terminated, brought on his illness, as it is said, by partaking too immoderately of a dish of lampreys, a fish of which he was very fond.

The colour of the sea-lamprey is olive-brown, marbled with a dark green and dusky brown.

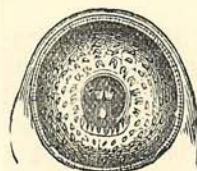
There is a smaller species, termed the river lamprey, or lampern (*Petromyzon fluviatilis*), about twelve or fourteen inches in length, of a bluish colour above, passing into white beneath, which is a permanent resident in many of our rivers, and those of Scotland and Ireland. Formerly this fish was taken in enormous quantities in the Thames, as many as a million or twelve hundred thousand having been captured in a single year. At present, the lampern is far less plentiful in the Thames than formerly. In the Severn, the Dee, the Mersey, etc., it still abounds.

This species breeds in May, and is in the best condition from October to March, during which period only its fishing is permitted. Cuvier states that it is common in the fresh waters of the continent. Like the sea-lamprey, the lampern is in repute as a delicacy.

A distinct species of lampern, called the fringe-lipped (*Petromyzon planeri*), is occasionally to be met with in our rivers, and more frequently in those of the continent. It is as thick, but shorter than the preceding species, and has its sucking lip peculiarly broad and fringed.

This little lamprey lives in the mud, and so rarely emerges from its lurking-place that it is never to be discovered without some search. Cuvier says it has been accused of sucking the gills of fishes. He adds, that it is employed as a bait for hooks. It is for this purpose that the Cornish fishermen use it; it abounds in the smaller streams of that county.

Along the coasts of Europe, including that of our own island, a singular slender fish, about twelve inches long, is to be found, which Linnæus regarded as belonging to the class of worms. It is, indeed, one of the lowest in structural organization among the fishes, its vertebral column being merely a soft flexible tube; it has no eyes, its mouth is circular,



Mouth of the Lamprey.

with eight feelers or barbules, and there is one hooked tooth on the palate, and two rows of teeth are on each side of the tongue. Its skin, which is smooth, is most copiously lubricated with a

slimy gelatinous secretion, poured out from two rows of glands, extending along the under surface. The head is blunt, with only one spiracle connected with the interior of the mouth; on each side of the body is an orifice, whence proceeds a membranous tube, leading to the respiratory apparatus on its own side. This singular fish is called the myxine, or glutinous hag (*Gastrobranchus cæcus*). It is a deadly foe to fish, into the bodies of which it enters, in some way not understood, and devours the whole of the flesh. Nilsson says that several have been found in the body of a single haddock, which was all eaten away internally. The cod-fishers of Scarborough and Berwick often capture this fish in the bodies of cod or haddock drawn up by their lines, and some believe it enters their mouth while they are held by the hook. But Cuvier says it attacks and pierces the fish; aided, perhaps, by the sense of touch implanted in its feelers, it may have the power of suddenly fixing itself by means of its hooked palatal teeth, and then boring and rasping with its lingual teeth, insinuate itself beneath the skin, and gradually work its way into the very body of its victim. Indeed, on some parts of our eastern coast it is called "the borer."