

# PNEUMATIC FISHES.

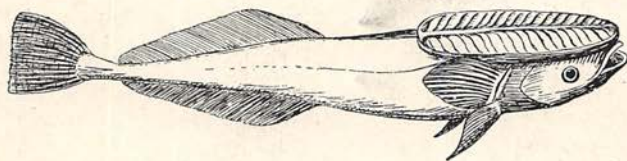
BY EDWARD STEP, F.L.S.

MANY of the virtues we take pleasure in applauding or condemning when practised by our fellow-bipeds are reproduced among the lower animals, and the student of living Nature is constantly being struck by them. This fact is calculated to give equal joy to two classes of men often opposed to each other—the theologian must see in it proof that man has fallen from a higher estate to the level of the beasts, whilst the evolutionist would accept it as part of the evidence that man has risen from a lowlier condition. This thought has been suggested by the fact that as there are men who prosper by the avoidance of all corporal exertion, so are there lower creatures who range the globe without an effort, and instead of pursuing the unending search for food, get themselves conveyed to it, and do little more than open their mouths to receive it.

A notable instance of this truth is found in the Ship Barnacle, who starts life as an active swimming crustacean, but soon tires of exertion and says: "Here's a fine ship! Go to! Let us charter it for our pleasure!" It is true, he does not occupy cabins and state-rooms, but he fixes himself permanently on the bottom, casts off all his swimming gear, and becomes a nondescript character with whom no respectable crab or lobster would acknowledge kinship. But a Barnacle always thrives and has the run of all the oceans. The crustaceans are notorious for tricks of this sort, and are willing to humble themselves to the position of clinging parasites if by so doing they may live well and avoid exertion. I could give other instances, but I should be taken far off the real subject of this paper.

There are fishes who act in like fashion, to some extent, at least, though they decline to give up the likeness of their class. One of these has been notorious from days of hoary antiquity, and even the ancient poets

took note of his ways—working a little embroidery of their own round the story, of course. This fish was known to them as the Remora, and it was reputed to have such enormous power that it could stay a ship in its course though all the sails were set and a good breeze were blowing. It was declared that on the fateful day of the battle of Actium, Antony's ship was held back by a Remora that had fixed itself to the bottom, in spite of the efforts of hundreds of oarsmen. A like annoyance befell Caligula in a journey from Astura to Antium, when a Remora attached itself to his vessel and stayed its progress. Now, the Remora on this occasion was simply desirous of getting a free passage, and attached itself to the bottom of the imperial galley, where its discovery afforded sufficient evidence of its monstrous strength.



REMORA.

The degree of power accredited to this fish by the ancients is well shown by Oppian in his *Halieutica*:—

The Sucking Fish beneath, with secret chains  
Clung to the keel, the swiftest ship detains;  
The seamen run confused, no labour spared,  
Let fly the sheets and hoist the topmost yard;  
The master bids them give her all the sails,  
To court the wind and catch the coming gales.  
But though the canvas bellies with the blast,  
And boisterous winds bow down the cracking mast,  
The bark stands firmly rooted in the sea,  
And will unmoved nor winds nor waves obey.  
Still as when calms have flattened all the plain,  
And infant waves scarce wrinkle on the main,  
No ship in harbour moored so careless rides  
When ruffling waters mark the flowing tides.  
Such sudden force the floating captive binds,  
Though beat by waves and urged by driving winds;  
Appalled, the sailors stare through strange surprise,  
Believe they dream and rub their waking eyes.

That this staying power was universally believed is attested by the name given to the fish, which is none other than the Latin word for a hindrance. The reader may well be pardoned if the foregoing has given him the notion that the Remora is a huge sea-beast. If he will picture it mentally as the size of a large sprat, he will understand that

the possession of an adhesive disc, by which it clings to sharks and ships, does not also confer the power to stay the course of a large body. This sucking instrument is apparently a modification of the first back fin. It has a central ridge, and a variable number of transverse plates, each ending in a small marginal spine, and enclosed in a fleshy border. On applying the flexible border to the surface of some transport agent, the transverse plates are depressed and a vacuum created. It is said that when not so fixed, the Remora swims with its back downwards, a statement borne out to a certain extent by the fact that its under side is dark and the upper side light, a complete reversal of the plan generally followed in the coloration of fishes. The Remora is common in the Mediterranean, and has been taken rarely on our own shores; but we have several other fishes endowed with sucking-discs, whose occurrence is by no means infrequent on the British coasts, though the fishes do not go for free trips attached to ships

The best known of these native sea-suckers is the Lump, one of the most remarkable in form of our fishes. Its facial expression is not particularly fish-like, but rather that of a happy fat boy, with full lips, plump rosy cheeks, and prominent red eyes. This non-fish-like appearance has earned it the name of Sea-owl in some places. Its coloration, too, is singular — pink, carmine, purple, blue, orange, dark brown, and black, laid on in no definite pattern, but in promiscuous streaks and clouds which suggest that the

colours have run somewhat one into the other. The Lump's skeleton shows no very great departure from the usual type of structure, but the living Lump is so invested by a thick coat of blubber that his structural plan is hidden. His headquarters are in northern seas, where he probably finds his great-coat serviceable, as do the seals and whales. The

seal, by the way, is reputed to be very fond of the Lump-sucker's flesh, but objects to this elastic envelope, and is said to peel it off much as we peel oranges.

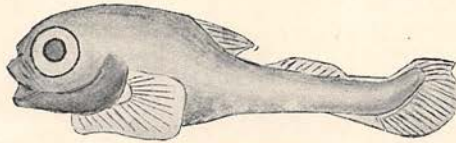
Looking at this fish end on from the front, anyone could tell that it was not built for "scorching" or record-breaking in submarine races; in truth, a vertical section of the Lump would show a close approach in outline to the haystack style of architecture rather than to a clipper-built fish. Instead of sharp prow, gently swelling clean sides, and deep keel,

we have large bows, fenders out in the shape of warty ridges to hold the water, a keelless flat bottom like a punt, no air-bladder, and, in fact, every point attended to that is calculated to unfit the Lump for mid-water locomotion, and to condemn it to hasten slowly on the rocky bottom. There his shape, his colour, his wartiness doubtless combine to render him very inconspicuous to his enemies. In the rush of flood-tide, ground-swell, or rollers, he has only to cast anchor by using his extensive and powerful sucker, and he can defy all the motions of the water. Inhabiting rocky places as he does, he would probably be dashed to pieces in storms but for this useful sucker.

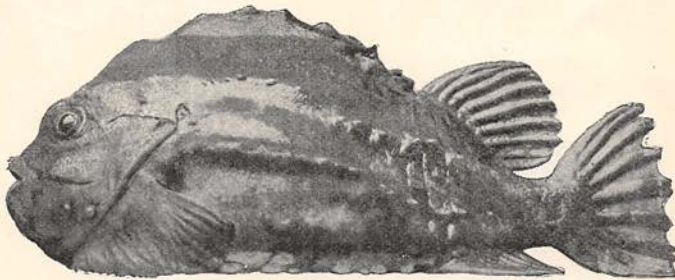
The Lump does not carry his adhesive apparatus on his head as does the Remora; with him it is placed on the lower surface just behind the head and between the breast

fins. It is, in fact, composed of the throat fins. They form a circular depression bounded by a ring of thick skin. This ring being applied to a stone, and the air pressed

out of the centre, the muscles are then contracted, and you have reproduced the London street-boy's leathern disc, with which he lifts loose flagstones and the iron covers of coal-shoots. I have no doubt that with a good-sized Lump-sucker you could lift a small flagstone to which it had adhered; for Pennant tells how he lifted a pail containing



YOUNG LUMP-SUCKER,  
SHOWING THE TWO BACK FINS.



THE LUMP-SUCKER.

several gallons of water by a Lump which had attached itself to the bottom. He did not take hold of the handle of the pail, but the fleshy tail of the fish!

British fishermen do not seek Lumps, but they often find them in their trammel nets. The Greenlanders are said to make a business of fishing for them, and to salt and dry the flesh for use as food. Couch quotes Holinshed to show that there was a time when it was esteemed in this country: "Lumps are ugly fish to sight, and yet verie delicate in eating, if it be kindlie dressed." I had a notion of eating the specimen that sat for the portrait on page 619, but the Chief Directress of Commissariat in our establishment, prejudiced by the colour and general external appearance of the fish, vetoed the proposal. However, I achieved my end by proxy. A friend who could boast a long list of heterodox dishes he had eaten, cheerfully responded to my suggestion that he should add Lump-flesh to the catalogue. He cooked and ate it, and agreed with Holinshed that it was a delicious dish, adding that the pink flesh tasted like young and tender chicken or like frog's thighs. It is a fine thing to have a friend like that, free from prejudices, upon whom one can make gastronomic experiments. Unfortunately, he is now out of my reach, being engaged in the search for gold at the Klondike, and I hope he will find it in plenty.

The very young Lump figured has a couple of back fins, but as he grows bigger and older, the first one gets so enveloped in blubber that it is more like a gigantic cock's-comb than a fin. This is the reason why the Scots call the fish "cock-paidle," though I am not sure of the exact equivalent for "paidle" in the English tongue. The female deposits about 100,000 large pink eggs in a sponge-like mass, usually in a hole of the rock, and then appears to have done with the business; but the male has the parental instinct well developed, and he keeps watch and ward over those eggs until

they hatch, sending constant currents of water through the mass by the action of his breast fins, and returning again and again when driven away by experimental man. The young Lump, when it leaves the egg, is about one-fifth of an inch long, and it is already provided with the sucking apparatus. This, coupled with the practical character of

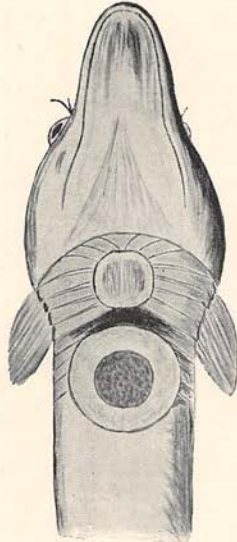
its first dorsal fin, goes to show that the sucker was acquired by its ancestors before they partially gave up the use of the swimming machinery. The Lump attains to a length of about two feet; the example photographed measured eighteen inches.

My third example of these adhesive fishes presents a striking resemblance to the large brown land-slug. This is known as the Cornish Sucker, not because it is confined to the shores of the delectable duchy, but because it is there plentiful, and was first made known as British from a Cornish specimen. Like the Lump and the smaller suckers to be mentioned later, the Cornish Sucker is devoid of scales and air-bladder. Much of its slug-like appearance is due to its soft exterior, yet more to the peculiar depressed shape of the head. The

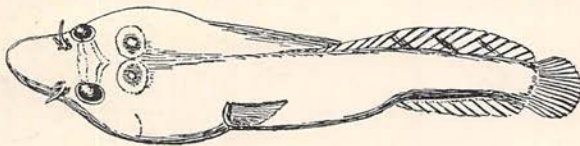
formation of its sucking organ is similar to that of the Lump, but whereas the Lump maintains an erect attitude, the Cornish Sucker is one of the topsy-turvy creatures that like to spend their lives upside down. If you wish to find this remarkable fish, go at ebb-tide to the edge of the water on a rocky coast, and there look for flat pieces of rock so resting on other stones that they leave a small clear space beneath. Turn the

stone quickly, and you may find your Cornish Sucker adhering to what was the lower surface, and watching you with its lively,

upturned eyes. Owing to the depression of the fore part of the head, the eyes come nearly to the top, and having free movement, they are for ever twinkling with the appearance of intelligence. In spite of the superficial resemblance of the fish to a slug, this view of the head is very suggestive of that of a dog when he is lying in the attitude

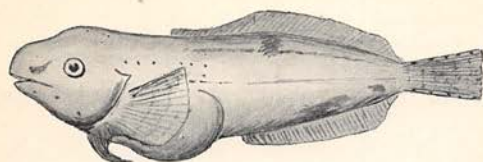


SUCKING APPARATUS OF  
CORNISH SUCKER.



CORNISH SUCKER.

of watchful repose, with his lower jaw pressed to the ground and his eyes taking note of all that passes. This sucker really spends all his days in this attitude, and if he



MONTAGU'S SUCKER.

changes his position, it is only for a spot a few inches away, or to chase some small crustacean and snap at it with his hound-like jaws, the lower one being narrower than, and overlapped by, the upper. At night he becomes more lively and wanders about a bit; but if one can safely judge his habits in freedom from his behaviour in an aquarium, he returns to his favourite stone before morning. Here the female attaches her large amber-coloured eggs to the stone, and the pair keep watch over them for about four weeks, when they hatch.

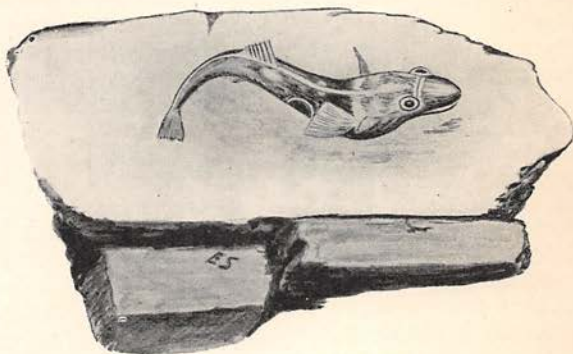
Beside the nostrils and a little in front of the eyes are little fleshy threads, evidently sense organs; but the most striking features of the upper surface are the two large eye-like spots behind the real eyes. These spots, which give a fierce aspect to the fish, are purple, with a central point of gleaming blue, and are surrounded by an outer ring of pale brown. The Cornish Sucker is a fish that bears confinement well. I have kept them for months at the time, and they got so far acclimatised that on one occasion I had a promising batch of eggs deposited which I had hoped to rear. One morning, however, only the marks where they had been were visible on the stone. They had been eaten in the night, but by whom was not clear. A small Shanny sharing the same vessel appeared to be particularly well pleased with things in general next morning, and I have a notion that he knew something respecting the fate of those eggs.

We have several other small suckers on our shores which space will not permit me to describe at length. Among them is one called the Sea Snail, because its flesh, in common with that of the other small species, is very soft and mucilaginous, and rapidly

disappears on the death of the fish. The Sea Snail is four or five inches in length—about the same as the Cornish Sucker—and is usually coloured with some shade of brown on the upper surface, streaked with wavy longitudinal lines of a darker tint. Then there is an allied species called Montagu's Sucker, in compliment to the indefatigable Colonel Montagu, whose researches on the Devon coast in the early days of last century added so many creatures to the list of known British animals. This is of a clear yellow hue, tinged with red on the upper parts. It is found under stones at low water, its favourite attitude being curled round so that the tail and the head are side by side. The face is chubby, and the fore part of the body correspondingly stout to give sufficient breadth for the suckers beneath; but the hinder half is much compressed.

The Two-spotted Sucker is more like the Cornish Sucker in form, with a shorter muzzle, and its eye-like spots are placed on the sides behind the throat fins. Its eyes are very prominent and exceedingly beautiful.

These instances will suffice to show that the power of swimming is not universally developed to anything like its full in all fishes. Evidently the evolution of the sucking disc has taken place in these species in consequence of the absence of an air-bladder and the resulting feebleness of the swimming capacity. Heavy fishes like the Blennies and Gobies, which are mostly



TWO-SPOTTED SUCKER.

without air-bladders, have the habit of climbing vertical rock-faces by the aid of their breast fins, and then clinging for a time by pressing their bodies closely to the rock.