

mond-shaped pointed coupling bar, and of a draw head provided with an internal shoulder and a swinging metallic plate, which engage and hold the point of the coupling bar.

**THE JAPANESE AND CHINESE SECTIONS OF THE BERLIN INTERNATIONAL FISHERIES EXHIBITION.**

BY A. W. ROBERTS.

The fishes and marine animals in the Japanese and Chinese sections of the Berlin International Fisheries Exhibition were objects of the greatest interest. These specimens of the marine life of Eastern Asia were prepared by native taxidermists, and to obtain a more artistic and picturesque effect they were grouped (by Mr. K. Slemenroth) to represent Japanese and Chinese marine life.

No. 1 represents the polypus, or devil fish (*Megateuthus martensii*), the body measuring thirteen feet in length, the head being provided with eight arms, each being fourteen feet long, the ends of which are provided with powerful suckers.

short thick cylinder, the center of which can be raised so as to establish a vacuum between itself and the object to which it is attached. As the weight of a man in water is about five pounds, it would not be difficult for a medium sized devil fish to drag him under water. The food of the devil fish consists of crustaceans and bottom fishes.

In the illustration the devil fish is shown in the act of entangling a coral diver in his terrible embrace.

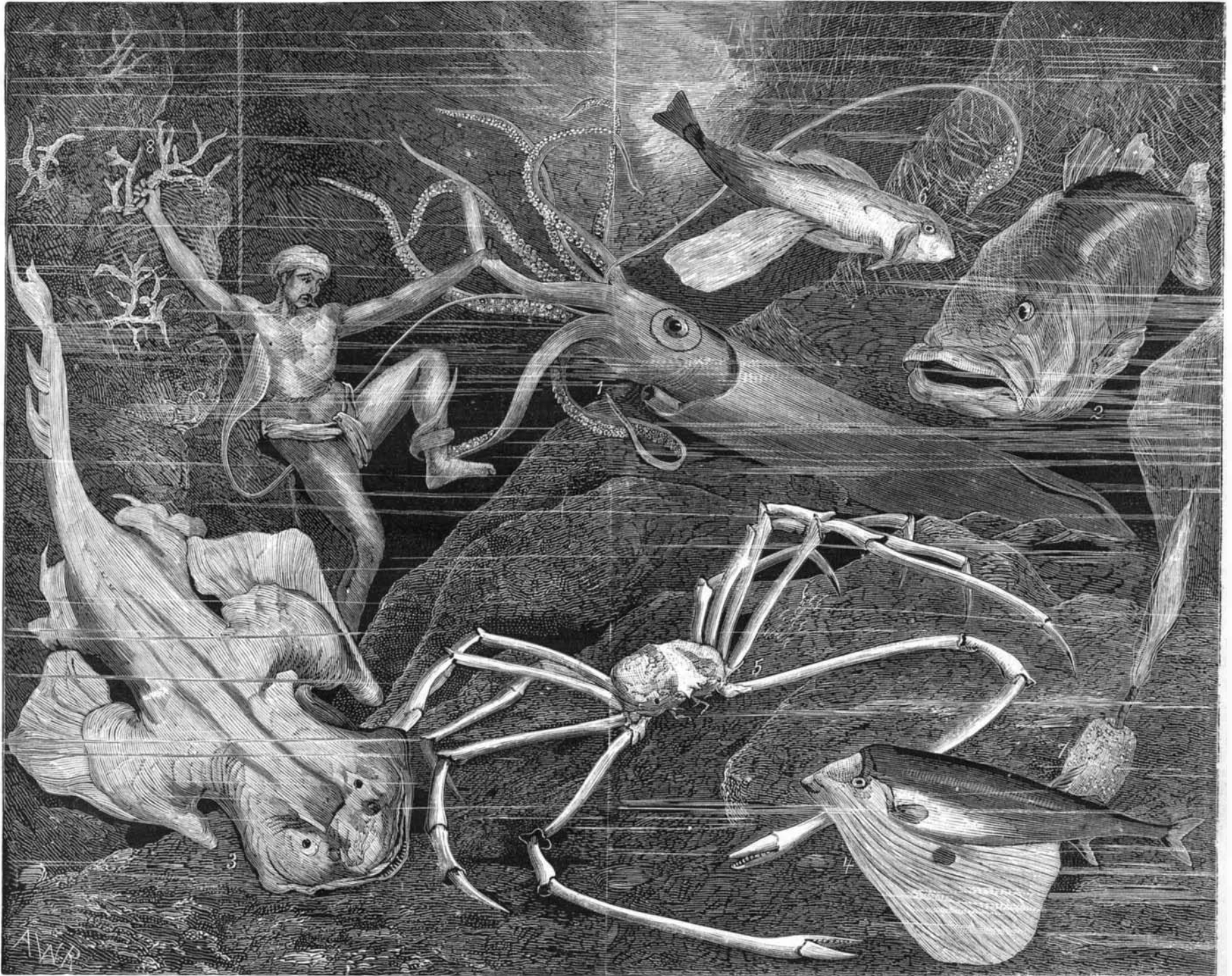
No. 2 is an example of Japanese perch, being only six feet in length, and is the largest known variety of the perch tribe.

At No. 3 we have the old-fashioned angel fish (not the exquisite angel fish (*Chrotodon*) of the tropics). It got its name of angel fish from its supposed resemblance to a cherub, such as are to be seen at the present day on ancient headstones in Trinity churchyard. It is also known by the name of monk fish, exactly why I don't know, as it has anything but a holy look when fresh from the ocean. The most proper name it has received is the shark-ray, as it looks like an exact connecting link between the shark and ray or skate

I have had several living specimens of a variety closely resembling the one figured above, and known to fishermen as the flying sea robin. In coloring they were beyond describing, and for exquisite grace of motion were perfection itself. When resting on the bottom and with wings folded up close to their sides like a fan, they often gave forth a pleasant musical sound, from which is derived their tribe name, *volitans*. I lost several specimens of this gorgeous fish from their habit of leaving the aquarium at night, and their wings drying before they were able to return to the water. But one that I had kept for a long time had learned how to pass from one tank to another during the night, often making a run of six tanks. Their favorite food is the bait shrimp.

Some years ago great numbers of these fish, of a large size, visited our coast and were sold in the markets under the name "dolly vardens," on account of their brilliant colors.

The gigantic spider crab (Fig. 5), *Macrocheira*, or long-armed crab of Japan, is the largest crab known. In the cabinet at Rutgers College, N. J., is a specimen of this variety, which, when the claws are extended, measures eleven feet



**MARINE ANIMALS OF THE JAPANESE AND CHINESE SECTIONS OF THE BERLIN INTERNATIONAL FISHERIES EXHIBITION.**

1. Polypus. 2. Giant Perch. 3. Angel Fish. 4. Fan Fish. 5. Giant Crab. 6. Flying Fish. 7. Glass Sponge. 8. Coral.

The devil fish fisheries of Eastern Asia are of great importance, as the following figures will show: In 1873, 9,000 boats were engaged in capturing devil fish, each boat being manned by six fishers, the annual yield being over 14,520,080 pounds, valued at \$375,000; 80,000 persons were also engaged in preparing and packing the flesh.

Through the establishment of public aquaria more correct information of the habits of these (the smaller varieties) wonderful fishes has been obtained.

We call them fishes, but they bear no resemblance to fish that have scales and swim by means of their fins and tail. Scientifically they are not fishes at all, but are very closely related to our oysters, clams, and other mollusks. Scientists classify the devil fish or octopus (meaning eight-armed) as belonging to the division of soft-bodied mollusca and of the class *Cephalopoda*, meaning feet projecting from the head.

They breathe by taking in water at the broad and open end of their bag-like body through two large gills, and ejecting it through a short and thick tube or funnel situated below the head in front. By this means they propel themselves backwards through the water.

One of the most curious features about a devil fish is that he has several hundreds of sharp and serrated sucking disks distributed in two rows along each arm. Each disk is a

tribes. It is a bottom fish and feeder, living on crustaceans, and is particularly partial to all the flat fish family. Its flesh, unlike the skate, is coarse and fibrous, and is seldom eaten, except by the very poorest classes. The only useful part of this fish is its skin, which, when dried, is used in place of sandpaper on woodwork, also for handles for swords, knives, etc.

In New York city this fish has been the means on several occasions of supplying our traveling shows with that class of circus natural history in the way of a mer-man. This wonderful production was the result of the artistic mind and delicate manipulation of a New York taxidermist (I use the term advisedly—stuffer would be better). I have seen white whales made out of sides of sole leather from the Swamp swim out of this same factory, and gorillas start up-town who, only a few days before, had been a living polar bear at Central Park.

Above the devil fish, at No. 6, is figured the flying fish (*Dactylopterus orientalis*). It derives its name from its ability to leave the water and skim over the surface, by means of its highly developed pectoral fins. It assumes this habit as a means of escape from its enemies.

No. 4 is the fan fish. Its beautiful pectoral fins are developed to an extent that enables it to rise out of the water and soar along its surface, after the manner of a bird.

and six inches. There was at Barnum's (old museum) a specimen of this crab, presented by Mr. Carsom Brevoort, Esq., of Brooklyn, which measured twenty feet. This specimen was lost at the burning of the museum. The long-armed spider crab common on our coast is a close relation to this Japanese variety.

At No. 7 is shown the *Hyalenema*, or glass sponge, the skeleton or spicula of which is shown in the illustration as looking like a long bunch of slightly twisted fibers. This spicula is transparent and consists of pure silica. The wonderful Venus horn is a close relation to this Japanese variety. Under a microscope the spicula of various sponges present the appearance of stars, spades, hooks, spears, etc. There is a variety of sponge that grows on our oysters called oyster beard. This sponge is so full of fine spicula that the fishers' wives use it for scouring and polishing their cooking utensils.

No. 8 is the well known red coral of commerce. In Persia, China, and Japan this red coral (or the "daughter of the sea") used to bear the same value as gold. In Johnson's dictionary is the following definition: "Coral—a plant of as great hardness and stony nature while growing in the water as it is after long exposure to the air." Peyssonel was the first to make known its animal origin, but it was many years after that the scientists of Europe had to acknowledge that after all Peyssonel was right.