and broad, its mouth wide, furnished with six barbels, of which those of the upper jaw are very long. Both jaws and the palate are armed with broad bands of small closely- set teeth, which give the bones a rasp-like appearance. The eyes are exceedingly small. The short body terminates in a long, compressed, muscular tail, and the whole fish is covered with a smooth, scaleless, slippery skin. Specimens of 4 and 5 feet in length, and of 50 to 80 lb in weight, are of common occurrence. Its food consists chiefly of other bottom-feeding fishes, and in inland countries it is considered one of the better class of food fishes. Stories about children having been found in the stomach of very large individuals are probably inventions.

III. The *Siluridæ Anomalopteræ* are a small section from tropical America, in which the dorsal and adipose fins are very short and belong to the caudal vertebral column, while the anal is very long, and the gill-membranes are entirely separate, overlapping the isthmus.

IV. The *Siluridæ Proteropteræ* are a section extremely numerous in species, and represented throughout the tropics. The dorsal fin consists of a short-rayed and an adipose portion, the former belonging to the abdominal vertebral column ; the anal is always much shorter than the tail. The gill-membranes are not confluent with the skin of the isthmus ; they have a free posterior margin. When a nasal barbel is present, it belongs to the posterior nostril. This section includes among many others the genus *Bagrus,* of which the “Bayad” *(B. bayad)* and “Docmac” *(B. docmac)* frequently come under the notice of travellers on the Nile ; they grow to a length of 5 feet, and are eaten. Of the “Cat-Fishes” of North America *(Amiurus),* locally called “bull-heads” or “horned-pouts,” with eight barbels, some twenty species are known. Some of them are valued as food, especially one which is abundant in the ponds of New England, and capable of easy introduction into other localities (A. *nebulosus).* Others which inhabit the great lakes *(A. nigricans)* and the Mississippi *(A. ponderosus)* often exceed the weight of 100 lb. *Platystoma* and *Pimelodus* people the rivers and lakes of tropical America, and many of them are conspicuous in this fauna by the ornamentation of their body, by long spatulate snouts, and by their great size. The genus *Arius* is composed of the greatest number of species (about seventy), and has the widest distribution of all Siluroids, being represented in almost all tropical countries which are drained by large rivers. Some of the species enter salt water. They possess six barbels, and their head is extensively osseous on its upper surface ; their dorsal and pectoral spines are generally developed into powerful weapons. *Bagarius,* one of the largest Siluroids of the rivers of India and Java, ex­ceeding a length of 6 feet, differs from *Arius* in having eight barbels, and the head covered with skin.

V. In the *Siluridæ Stenobranchiæ* the dorsal fin consists of an adipose portion and a short-rayed fin which belongs to the abdominal vertebral column, and, like the adipose fin, may be sometimes absent. The gill-membranes are ∞nfluent with the skin of the isthmus. The Siluroids belonging to this section are either South-American or African. Among the former we notice specially the genus *Doras,* which is distinguished by having a series of bony scutes along the middle of the side. The narrowness of their gill-openings appears to have developed in them a habit which has excited the attention of all naturalists who have visited the countries bordering upon the Atlantic rivers of tropical America, viz., the habit of travelling during seasons of drought from a piece of water about to dry up to ponds of greater capacity. These journeys are occasionally of such a length that the fish have to travel all night; they are so numerous that the Indians fill

many baskets of them. Hancock supposes that the fish carry a small supply of water with them in their gill-cavity, which they can easily retain by closing their branchial apertures. The same naturalist adds that they make regular nests, in which they cover up their eggs with care and defend them,—male and female uniting in this parental duty until the eggs are hatched. *Syngdontis* is

an African genus and common in the Nile, where the various species are known by the name of “Shal.” They frequently occur among the representations of animals left by the ancient Egyptians. The upper part of their head is protected by strong osseous scutes, and both the dorsal and pectoral fins are armed with powerful spines. Their mouth is small, surrounded by six barbels, which are more or less fringed with a membrane or with branched tentacles. Finally, the Electric Cat- or Sheath-Fishes (*Malapterurus)* also belong to this section. Externally

they are at once recognized by the absence of a rayed dorsal fin, of which only a rudiment remains as a small interneural spine concealed below the skin. The entire fish is covered with soft skin, an osseous defensive armour having become unnecessary in consequence of the develop­ment of a powerful electric apparatus, the strength of which, however, is exceeded by that of the electric eel and the large species of *Torpedo.* It has been noticed in vol. xii. p. 650. Three species have been described from rivers of tropical Africa, of which one (*M*. *electricus)* occurs in the Nile ; it rarely reaches a length of 4 feet.

VI. The section of *Siluridæ Proteropodes* contains small forms, some of which are of interest by the degree of specialization to which they have attained in one or the other direction. Many of them are completely mailed; but all have in common a short-rayed dorsal fin, with the ventrals below or rarely in front of it. Their gill-openings are reduced to a short slit ; their pectorals and ventrals have assumed a horizontal position ; and their vent is before, or not much behind, the middle of the length of the body. The first group of this section comprises alpine forms of the Andes, without any armature, and with a very broad and pendent lower lip. They have been referred to several genera (*Stygogenes, Arges, Brontes, Astroplebus),* but are collectively called “preñadillas” by the natives, who state that they live in subterranean craters within the bowels of the volcanoes of the Andes, and are ejected with streams of mud and water during eruptions. These fishes may, however, be found in sur­face waters at all times, and their appearance in great quantities in the low country during volcanic eruptions can be accounted for by numbers being killed by the sulphuretted gases which escape during an eruption and