

*Occurrence in the Gulf of Maine.*—The cow-nosed ray has even less claim to be called a Gulf of Maine fish than have the sting rays just mentioned, for while it is often taken in the traps at Woods Hole—145 in one day on one occasion—and is recorded from Nantucket, it has never actually been seen east or north of Cape Cod.

### Chimæroids. Subclass Holocephali

#### THE CHIMÆRAS. FAMILY CHIMÆRIDÆ

The chimæras find their nearest affinities in the sharks but are separated from the latter by many important anatomic characters, the most obvious of which are the facts that there is no spiracle, there is but one gill opening on either side, the tail is symmetrical, and the gills are fringelike and free at the tips like those of bony fishes. In general aspect the chimæras remotely suggest the grenadiers (p. 467), but are easily separable from them by the location of the ventral fins, which are set far back under or behind the tips of the pectorals; by the fact that the fin on the back is separated by a deep notch into dorsal and caudal portions; by the very small eye; and by the large size of the pectoral fins, to list only the most obvious differences. There is no danger of confusing them with any other Gulf of Maine fishes, so curious is their appearance.

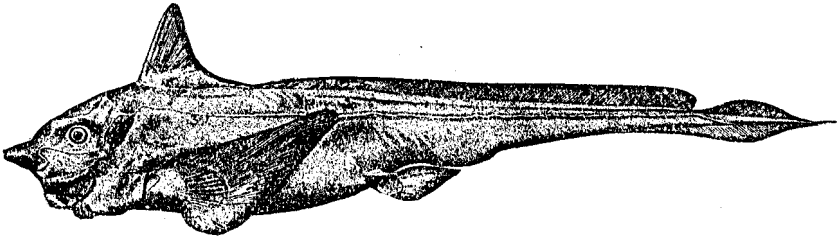


FIG. 31.—Chimæra (*Chimæra affinis*)

### 30. Chimæra. (*Chimæra affinis* Capello)

Jordan and Evermann, 1896-1900, p. 95.

*Description.*—The chimæra is deepest (one-seventh to one-eighth as deep as long) just behind the gills, tapering gradually backward to a weak slender tail, and is very soft bodied. The head is short, its dorsal profile oblique and prolonged into a short, soft, conical knob above the mouth. The forehead of the male bears a curious cartilaginous hook, armed with recurved prickles on its lower surface, which probably serve to clasp the female. The mouth is inferior in position, relatively small, the upper jaw with four, the lower with two, flat plates, set edgewise, in place of teeth, and with thick fleshy lips. The gill openings are vertical, set low down on the sides of the neck, and each is covered with a flap of skin paralleling the gill covers of bony fishes.

There are two distinct dorsal fins. The first of these originates over the gill opening, is triangular, about as high as long, and supported at its anterior margin by a stout spine that is free at the tip. The second dorsal is separated from the first by a space that probably varies in length, and is less than half as high as the

first, with straight margin. The small caudal fin is demarked from the second dorsal by a deep notch; it is lanceolate in outline, terminates rearward as a short whiplike filament, and extends a short distance forward on the ventral surface of the trunk, there being no separate anal fin. The ventrals and pectorals are both triangular and pointed, the latter being much the larger and reaching back nearly to the point of origin of the ventrals. In the male the lower part of each ventral fin is modified as a trifold clasping organ. The skin is smooth, or perhaps slightly prickly, the lateral line well developed, ramifying in several branches over the head.

This species<sup>59</sup> is a close ally of the well-known chimæra of north European seas (*C. monstrosa*), but is distinguishable from it by the facts that it has no separate anal fin, that there is a considerable free space between its two dorsal fins, that the outline of the second dorsal fin is straight, that its caudal filament is much shorter, and that its pectorals hardly reach back to the ventrals.

*Color*.—Leaden all over.

*Size*.—Maximum length about 3 feet.

*General range*.—Not uncommon on the continental slope of North America from the latitude of Cape Cod northward, in 300 to more than 900 fathoms.

*Occurrence in the Gulf of Maine*.—We mention the chimæra here because one (or more) was brought in from Georges Bank some time between 1877 and 1880.<sup>60</sup> It would be no surprise to find them on the seaward slope of the bank, for halibut fishermen have often caught them off LaHave and the more easterly banks. One has even been found in the harbor of Noank (Conn.), but there is no record of it in the inner parts of the Gulf of Maine.

*Habits and food*.—Nothing whatever is known of the habits of this chimæra; little more of the northern European species except that it is a ground fish, omnivorous, eating small fish, mollusks, Crustacea, echinoderms, and worms, and that it produces large eggs with horny oval cases, bearing threadlike filaments.

## The bony fishes. Subclass Teleostomi

### THE STURGEONS. FAMILY ACIPENSERIDÆ

The sturgeons—the only Gulf of Maine representatives of the ganoid fishes—share with the sharks an uneven tail with the vertebral column extending out into the upper lobe, but there is no danger of taking one for a shark as there is but one gill opening on each side, and the gills are inclosed by bony gill covers.

#### 31. Sturgeon (*Acipenser sturio* Linnæus)

Jordan and Evermann, 1896-1900, p. 105.

*Description*.—Sturgeons are easily distinguished from all our other salt-water fishes by the fact that the head is covered by bony plates united by sutures, and the skin is armored by a row of large bony shields or bucklers along the mid-back,

<sup>59</sup> This fish is generally considered identical with a chimæra taken off the coast of Portugal, hence the choice of the specific name *affinis* instead of *plumbea*, by which the chimæra of North American waters was first known.

<sup>60</sup> Report, U. S. Commission of Fisheries, 1879 (1872), p. 788.