

NOTE ON *ICICHTHYS LOCKINGTONI* JORDAN AND GILBERT, A PELAGIC FISH FROM CALIFORNIA.

By DAVID STARR JORDAN,

Of Stanford University, California.

In the year 1880, while investigating the fish fauna of California with my colleague, Dr. Charles H. Gilbert, a very peculiar fish of uncertain family was placed in our hands. It was secured in the market of San Francisco, from off Point Reyes, by W. G. W. Harford, curator in the California Academy of Sciences, and described by us¹ as *Icichthys lockingtoni*. The specimen, in bad condition, was inadequately figured in the Oceanic Ichthyology of Goode and Bean, the figure (No. 226) being copied by Jordan and Evermann, Fishes of North and Middle America (fig. 406). The type was deposited in the National Museum (Cat. No. 27397).

In July, 1922, a second specimen 18.05 cm. ($7\frac{1}{2}$ inches) long, was received from a Monterey fisherman by Dr. Walter K. Fisher, director of the Hopkins Marine Station of Stanford University at Pacific Grove. This was reported as one of 8 or 10 found swimming at the surface under the disk of a large jelly fish supposed to be *Pelagia*. The fish was unknown to its captors, who saved one specimen, throwing the others away.

Of this example, 18.05 cm. ($7\frac{1}{2}$ inches) in length, I present a new figure and a description.

Head, $4\frac{1}{4}$ times in length to base of caudal; depth, $3\frac{1}{3}$ times. Dorsal rays X, 32; anal rays III, 28; caudal 5-17-5; ventral rays I, 5; pectoral 18; eye $4\frac{1}{3}$ times in head; snout $4\frac{1}{3}$; maxillary $3\frac{1}{3}$; caudal fin $1\frac{1}{2}$ in head; pectoral fin $2\frac{1}{5}$; ventral fin 3; scales 16-110-20; longest (posterior) dorsal ray 4; longest anal ray 4; longest (tenth) dorsal spine $4\frac{1}{3}$.

Body oblong, moderately elongate, somewhat compressed, the caudal peduncle rather long. Head moderate, compressed, the cheeks vertical, the snout blunt, the profile convex, descending evenly; top of head with thick spongy skin; premaxillary not pro-

¹ Proc. U. S. Nat. Mus., vol. 3, 1880, p. 305.

tractile, its tip just below level of eye; maxillary extending to opposite middle of pupil, slipping entirely under the membranous edge of the moderate preorbital, which is a little wider than pupil and with about three rows of scales; lower jaw somewhat included; jaws with minute, even, pointed teeth; slight deciduous asperities on vomer and palatines, perhaps not teeth; one toothlike appendage found in the gullet, but this and other structures are so weak and fragile that the extent of this type of dentition could not be ascertained. Eye moderate, about equal to snout; cheek long, opercle large, extremely thin and fragile, crossed by four or five rather conspicuous radiating spriae. All the bones of the head covered by very thin cycloid scales, like those on the body, but somewhat smaller; about 15 in an oblique series across cheek downward and backward from the eye.

Gill openings wide, the membranes not connected, free from the isthmus; pseudobranchiae present. Branchiostegals 7; gill rakers long and slender, about three-fourths diameter of eye. Gills 4, a short slit behind the last.

Scales very small, thin, soft and smooth, covering the body evenly, those below slightly reduced; scales extending high on the bases of each of the vertical fins. Lateral line faint, with a slight curvature behind the end of the pectoral, not extending on caudal fin.

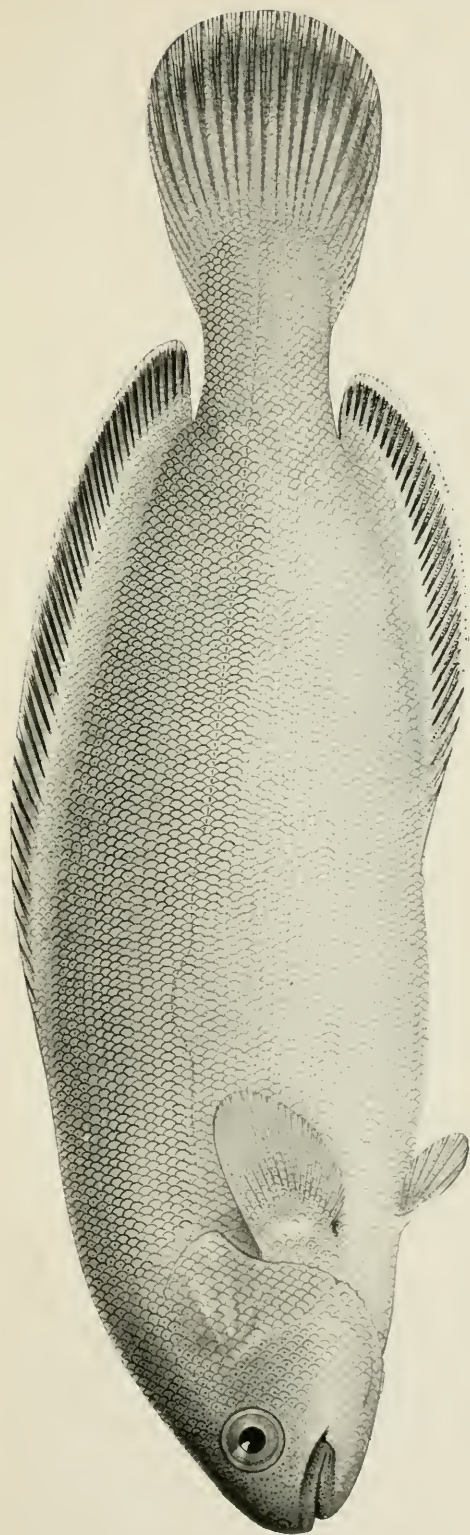
Dorsal fin continuous, very low, rising slowly from the first (spine) to the last ray, its insertion about midway between base of ventrals and vent, its rays all very soft and slender, most of them apparently articulate, about 10 of the anterior unbranched; the spines and soft rays entirely similar. Anal like dorsal but shorter, beginning very near middle of body (without caudal) and ending just in front of last dorsal ray, its first three rays simple. Caudal fin broad, fan-shaped, rounded behind, the accessory rays numerous. (The tip of the fin is broken in both the type and the specimen now described so that its exact form is uncertain, but it can not have been forked.) Pectorals short and rounded, scaly at base; ventrals short and small, inserted below axil of pectoral, not adnate to the belly and not depressible in a groove. No spinules on any of the fins. Vent normal, close to the anal fin.

Bones of the skeleton all soft and flexible, so that the body is as limp as a wet rag, and every part very fragile. For this reason, I have not opened this example, but in the original type we found six long pyloric coeca, and no evident air-bladder.

Color everywhere dusky, the head and back with fine dark punctulations; base and margin of each of the vertical fins pale, the mesial part black; inside of mouth dark.

It is plain that this genus is allied to the Japanese genus *Icticus* and to *Schedophilus*, two pelagic genera in which the body is equally

soft and limp. It is also evident that both are not far from *Centrolophus*. In the genus *Icosteus* the bones are quite as weak as in *Icichthys*, but the naked skin is thick and firm and the lateral line and the finrays are armed with prickles. We did not find gullet teeth in *Icosteus* nor in *Icticus*, but these fragile structures may have existed in either case. From the other "Rag-fishes" *Icosteus* differs widely in having but four soft rays in the ventral fin. While *Icticus* has many points in common with *Icichthys*, its dorsal fin is divided into two, as in *Nomeus*, the first being well developed. All these forms are allies of the Stromateidae, but this group seems too varied in form and structure to be placed in a single family. For the present *Icichthys* may be left with the Centrolophidae. The genus *Ectenias* Jordan and Thompson was based on a young *Coryphaena*.



ICICHTHYS LOCKINGTONI JORDAN AND GILBERT.

FOR EXPLANATION OF PLATE SEE PAGE I.

