

**Article X.—A NOTE ON THE DOLPHINS (CORYPHÆNA
EQUISETIS AND CORYPHÆNA HIPPURUS).**

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As the writer knows of no published English description of the two recognized species of Dolphins, which gives the differences between them in a satisfactory manner, a detailed comparison of two specimens of about the same size, in the collections of the American Museum of Natural History, a *Coryphæna equisetis* Linn. from the eastern tropical Pacific (taken in approximately 10° North Latitude and 119° West Longitude), and a *Coryphæna hippurus* Linn. from Sandy Hook, should be useful. Our *C. equisetus* is a female full of spawn, and was obtained from a large school of fish, December 4, 1906.

***Coryphæna equisetis* Linn.**

Length, inclusive of caudal, 14 inches. Length, head and body, 11.4 inches. Weight 12.5 oz. Body moderately compressed, its greatest depth about in the center, tapering evenly towards head and tail. Depth 3.7 in length of head and body. Greatest thickness about 1.7 in head. Least depth of caudal peduncle 4.2. Lower jaw slightly projecting. Head and gill-covers mostly scaleless, except for a scaled area behind and below the eye. About 180 scales in longitudinal series. Lateral line complete. A short arch in it, over the posterior part of the appressed pectoral fin. Head 4.5 in length of head and body. Eye 5 in head. Snout 3. Nostril with double opening, midway between eye and snout. Maxillary 2.5 in head, reaching past front of eye, not quite to anterior margin of pupil. Branchiostegal rays 6 or 7.

Numerous small teeth on jaws. Smaller teeth on vomer and palatines, and a large area on back of tongue with minute teeth. This toothed area with parallel sides, cut by a broad arc in front, and acutely rounded or broadly pointed behind, slightly longer than broad. The tongue itself large, filling the floor of the mouth, truncate in front. Distance from posterior border of teeth on tongue to tip of tongue 5 times in head. Breadth of tongue 5.8. (Fig. 1.)

Dorsal long, of 51 rays. Its origin a little in advance of half way between posterior margins of eye and of gill-cover. Dorsal fin so formed that its posterior rays suggest finlets. About 12 of these "finlets" noticeably developed, each with one dorsal ray, except the hindermost with three. Anal resembles dorsal, and has 22 rays, and about 12 finlets suggested posteriorly. These "finlets" are more nearly isolated than the dorsal ones. The last with two rays, the others with one each. Pectorals very small, 2.2 in head, with 18 rays. Ventrals 1.6 in head, pointed about under pectorals, the more sloping ventral outline of the fish

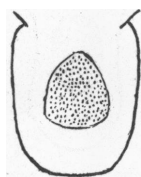


Fig. 1. Diagram of tongue of *Coryphæna equisetis* Linn. Enlarged about one-fourth.

making them appear further back than in our specimen of *hippurus*. Rays I, 5, fins with delicate attachment to middle line of chest, and fitting into a shallow depression, prolonged behind in a narrow crack which does not nearly reach vent. Caudal deeply forked, its dorsal fork slightly longest; the distance from the center of the base of caudal fin to this tip, .9 in head. Longest dorsal ray 3.3 in head. Longest anal ray 5.4.

Color of preserved specimen: Above dusky, becoming paler, vinaceous, on lower parts. Sides with irregular, scattered, small black spots, varying in size, and resembling specks of ink. In fact the writer believed that they were some foreign substance with which the specimen had accidentally become soiled, until similar spots were observed on two specimens of *equisetis* from the Indian Ocean, in the Museum of Comparative Zoölogy, Cambridge, Mass., and also on Günther's figure of the species.¹ Pectoral fins pale, except for the base and upper edge, and the upper part of the side nearest the body, which are dusky. Ventrals mostly pale on their lower side and dusky on the upper side which is appressed to the body. The caudal appears to have been dusky, its central rays tipped with whitish. Dorsal dusky, its posterior part tipped with whitish. Anal whitish, more or less dusky at its base, the last ray whitish.

***Coryphæna hippurus* Linn.**

Length inclusive of caudal 17.1 inches. Length, head and body, 13.5 inches. Weight 10 oz. Body compressed, its greatest depth forward of the center, and becoming attenuate towards tail. Depth 4.9 in head and body. Greatest thickness (through posterior part of head) 2.4 in head. Least depth of caudal peduncle 4.2. Lower jaw slightly projecting. Body covered with small scales. Head and gill-covers mostly scaleless. A scaled area behind and below the eye. The scales are more numerous and more crowded than in our specimen of *equisetis*. There are about 250 in longitudinal series. Lateral line complete, its anterior part wavy, its greatest flexure an angular, upward bend about over the center of appressed pectoral fin.

Head 4.6 in length of head and body. Eye 5.2 in head. Snout 3. Nostril nearer front of eye than tip of snout. Maxillary 2.2 in head, reaching about to center of pupil. Branchiostegal rays 6 or 7. Numerous teeth or jaws, some of the front ones enlarged. Area of densely set, small teeth on vomer, palatines and tongue. The area on tongue somewhat oval. Tongue moderate in size, not filling floor of mouth, rounded in front. Distance from posterior border of its toothed area to its tip 6.5 in head. Its breadth 9 in head. (Fig. 2.)



Fig. 2. Diagram of tongue of *Coryphæna hippurus* Linn. Enlarged about one-half.

Dorsal with 56 rays, its origin behind posterior border of eye, but much nearer that than posterior margin of gill-cover. Posterior dorsal rays normal. Anal of 27 rays, the tips of some of them slightly suggesting finlets in appearance.

Pectorals falcate, 1.5 in head, of 19-20 rays. Ventrals 1.14 in head, narrowly pointed, fitting into a depression which extends as a narrow crack to vent. Ventral placed directly below pectoral. Caudal deeply forked, the forks

¹ Günther, Fische der Südsee, V, pl. 93.

about equal in length, not as widely flaring as in our specimen of *equisetis*. The distance from the center of the base of caudal fin to its dorsal tip .9 in head. Longest ray of dorsal fin 1.7 in the head; of anal 3.7.

The color of our preserved specimen is silvery, darker on the back, and white on the belly. It shows a regular row of indistinct dark spots along its dorsal outline and a few smaller, indistinct dark spots scattered on the lower part of the sides. The dorsal fin is dusky, the tip of its last ray pale. The anal appears to have been less dusky, and its last ray is light colored. The caudal appears to have been dusky, but invaded by the silver of the flanks; it is noticeably scaled almost throughout. Ventrals whitish below and blackish on the surface, appressed to the body. Pectorals dull yellowish, the base and upper part of the appressed surface dusky.

The writer wishes to call attention to the most striking differences of these two specimens, probably diagnostic of the species which they represent.

- (1) The longer, posteriorly more narrowed body of *hippurus*.
- (2) Its longer pectoral and ventral fins.
- (3) Its larger mouth, stronger dentition and different tongue.
- (4) Its much more numerous scale.
- (5) Its more numerous fin rays.

The finlet tendency in dorsal and anal fins, particularly noticeable in our specimen of *equisetis*, is probably, to a considerable extent, a matter of individual variation. Our fish possesses it in the extreme, one in the Museum of Comparative Zoölogy shows it, but to a decidedly less degree. If Günther's figure of *equisetis* is correct, the fish from which it was drawn was without such tendency. I believe it to be rare in *C. hippurus*, if it ever occurs markedly.

