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CARANGOIDES JORDANI FROM THE HAWAIIAN ISLANDS WITH NOTES ON RELATED FISHES

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In the summer of 1921, Dr. David Starr Jordan, of Stanford University, made a collection of fishes in the Hawaiian Islands, the locality where I had had the pleasure of first meeting him twenty years previous. A series of this material was to come to The American Museum of Natural History. As I had been making an especial study of the subfamily Caranginæ, all the carangids were courteously sent here to be worked up. The following notes are placed on record as a contribution to a knowledge of certain of these forms and of the Hawaiian fish fauna.

Decapterus maruadsi (Temminck and Schlegel)

The collection contains two specimens (300 and 305 mm. in length to base of caudal) of this species, previously known from Japan and China coasts. They are at once recognizable as distinct from *Decapterus macarellus pinnulatus*, the common form in Hawaiian waters, by greater depth, longer pectoral, and greater development of scutes. It is not surprising that *Decapterus maruadsi* is common to the western and central Pacific, for the other Pacific species of *Decapterus* is also found in Japan, though there previsionally recognized as a distinct race, *muroadsi*. We have no Japanese *maruadsi* material available for comparison with these Hawaiian specimens. The larger (305 mm.) specimen has the following measurements:

Depth in length to base of caudal, 4.5 (in length to notch of caudal, 4.7); head, 3.9; eye in head, 3.5; snout, 3.0; maxillary (which barely reaches front of eye), 3.0; pectoral (which is pointed), 1.2; thickness of body, 1.8. Teeth are minute but evident. Dorsal has about 34 soft rays; anal 28. The straight part of the lateral line is contained 1.5 in the arc of the low curve. The scutes are traceable forward for almost the entire length of the straight part of the lateral line, and number about 36. A conspicuous black spot at the angle of the opercle.

Caranx affinis lundini (Jordan and Seale)

Carangus affinis Jordan and Evermann, 1905, 'Fishes Hawaiian Islands.'
Decapterus lundini Jordan and Seale, 1906, 'Fishes of Samoa.'

Six specimens 130 to 200 mm. standard length (to base of caudal) have been compared with two, 179 to 182 mm., from Somaliland (Barnum Brown, Collector). These latter, which presumably are true *C. affinis* Rüppell, with type from the Red Sea, have appreciably smaller teeth, forming a broader band, where they cease to be uniserial in the front of the jaw, have more pointed heads, and are less compressed, thus agreeing with the figure and description of *affinis* in Day, 1889, 'Fauna British India,' Fishes. The Hawaiian fish, however, is exceedingly close to *affinis* if specifically distinct.

Caranx cheilio (Snyder)

One 400 mm. long to base of caudal has been compared with a smaller (270 mm.) specimen of *C. guara* from Bermuda. The two species are close, a slightly shorter dorsal in *cheilio* (24 versus 26 soft dorsal rays) the most obvious technical distinction. *Cheilio* has back more elevated, profile steeper, ventral outline more horizontal, lips thicker, eye nearer snout instead of in the center of head.

Carangoides jordani, new species

Carangoides ferdau Jordan and Evermann, 1905, 'Fishes of Hawaiian Islands,' p. 198, fig. 77. Not *Scomber ferdau* Forskal.

The type, No. 8104, American Museum of Natural History, Hawaiian Islands, 1921, D. S. Jordan, is 200 mm. long to base of caudal. Villiform teeth on palate and in bands on jaws; arch of lateral line low, its arc 1.1 in straight part; scutes small, restricted to posterior portion of straight part, about 30.

Depth, 2.4 in length; head, 3.5. Eye, 4.4 in head; maxillary, 2.4; dorsal lobe, 1.0; anal lobe, 1.5; pectoral, 1.0. Maxillary to under front of orbit, not reaching pupil. Gill-rakers 23 on lower limb of first arch. Height of anterior lobe of soft dorsal 1.4 in base of that fin (not following curve of back), 1.3 in depth of body. Dorsal soft rays 30, anal 27. Chest before the ventrals scaleless, the naked area widening as it reaches gill-covers. Color in alcohol bluish plumbeous, paler below, fins dark gray, darkest on dorsal and anal lobes.

Two specimens, 200 mm. in length to base of caudal, are identical with *Carangoides ferdau* Jordan and Evermann, which differs from *ferdau* of Forskal in the larger number of fin rays (dorsal soft rays 29 to 30, anal 25 to 27), and differs from *C. gymnostethoides evermanni* in the character of the lobe of the soft dorsal which ends in a slender filament and is contained 1.4 to 1.6 times in the base of that fin, 1.3 to 1.4 in depth of body. It is more slender than *Carangoides gilberti*, with differently shaped body and fins.

Carangoides gymnostethoides evermanni Nichols

A specimen referred to this form is somewhat larger (330 versus 313 mm. to base of caudal) than the type, with which it has been compared (see 1921, American Museum Novitates, No. 3). It agrees closely with same in most respects, and differs from it in being less compressed, thickness 1.7 versus 2.0 in head. The dorsal lobe is shorter 1.5 versus 1.4 in head, 2.5 versus 2.0 in base of fin; maxillary just reaches front of pupil; and the naked area on chest broadens more anteriorly, where it meets the gill-covers.

This individual is not differentiable from *orthogrammus* by higher dorsal lobe, but is less slender than the description of that fish, depth 2.7 versus 3⅔.

Alectis ciliaris (Bloch)

One, 19¼ inches long to base of caudal, is the largest that the writer has ever had the pleasure of examining. A table of the variations of this species with size will be found on page 287, XLII, Bulletin, American Museum of Natural History (J. T. Nichols, 1920). The following measurements of this large individual (which has one of two dorsal filaments extending to beyond caudal, an anal filament to caudal base, and lacks dark cross-bands) carry on, in a manner to be expected, the proportional changes with growth indicated by smaller material. Thus depth in length is 2.1; eye in head 3.8; snout 2.8; pectoral 0.8; ventral 2.1. The curve of the lateral line in straight part, 1.0, does not show the anticipated change; but the most surprising condition is found in the gill-rakers, 17 in number, but the most anterior, and also the only one well on the upper limb of the arch, rudimentary, as though they might be dropped out in still further growth. If gill-rakers are dropped out by growth, *Alectis ciliaris* might easily become *Alectis hopkinsi* in reaching 26 inches, the size of the unique type of that species (*loc. cit.*, p. 291).