THE SNAPPING SHRIMPS (ALPHEIDÆ) OF THE DRY TORTUGAS, FLORIDA.

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The Alpheidæ collected by Dr. J. F. McClendon at the Tortugas, Florida, in the course of his study of the habits of crustaceans during the summer of 1908, are referable to eight different forms, including one new species and one new subspecies. **They are as follows:**

ALPHEUS FORMOSUS Gibbes.

ALPHEUS CRISTULIFRONS Rathbun.

ALPHEUS ARMILLATUS H. Milne Edwards.

This species, one of the most abundant and the most widely distributed on the American coast, very often accompanies *A. heterochælis*. It has nearly always been confused with that species, perhaps by Say himself. So far as I know, the types of *A. heterochælis* no longer exist, but those of *A. armillatus* H. Milne Edwards are in the museum at Paris and permit the differentiation of the two forms almost with certainty.

A. heterochælis has a rostrum with rounded borders, and the rostro-orbital depressions are not definitely limited behind, but gradually join the carapace. Furthermore, the small claw of the male is armed with longitudinal crests furnished with hairs on the movable finger. The claw suggests the beak of *Balæniceps* (the Whale-headed Stork of Africa), following the comparison of Hilgendorf.

In *A. armillatus* the rostrum has the form of a sharp crest which widens abruptly into a triangular space. The concave borders of this triangle very distinctly limit the rostro-orbital depressions behind and even slightly overhang them in the adult specimens. Lastly the small claw of the male is never comparable to the beak of *Balæniceps*. The specimen collected by Doctor McClendon is a young male in which the typical form of the rostrum is little marked. The hooks terminating the third, fourth, and fifth feet are also longer than in the adult.

?ALPHEUS CANDEI Guérin.

Guérin's type was from Cuba. The figure and description which he gives, although insufficient, apply to the specimens from Tortugas with singular accuracy. The form of the frontal border, sinuous between the spinous orbital arches and the rostrum, the proportion of the articles of the antennule, the stylocerite, the spine of the basicerite, the relative proportions of the two pairs of antennæ, of the carpocerite and of the scaphocerite; all these details agree with the figure and the description of *A. candei*. The stylocerite is, however, a little shorter in the specimens from Tortugas. In the drawing by Guérin the scale of the scaphocerite is not distinct, but this inaccuracy may be explained by the long slender form of the scale, the internal border of which is in the prolongation of the strong lateral spine.

FIG. 1.—ALPHEUS CANDEI. *b*. INFERO-EXTERNAL SURFACE OF LARGE CHELA. *b'*. SUPERO-INTERNAL SURFACE OF LARGE CHELA. *c*. SMALL CHELA. *d*. MEROPODITE OF THIRD FOOT. *d'*. DACTYL OF FIFTH FOOT. *n*. ANTERIOR REGION.

The large chela has its lower border scarcely interrupted by constriction and the inferior margin of the article may be called almost straight as in Guérin's description. Also the meropodites of the third pair are unarmed. Unfortunately the single specimen collected by Doctor McClendon has only one member intact, a foot of the fifth pair, showing the bifid dactyl. The third pair is represented on but one side and there only by the meropodite. It is therefore impossible to ascertain whether the second pair is, as Guérin says, much longer than the following. But that is a common character in the "*megacheles*" group of species. Consequently, I am strongly inclined to believe that Doctor McClendon has found Guérin's species in Florida.

SYNALPHEUS MINUS (Say).

SYNALPHEUS TOWNSENDI SCAPHOCERIS, new subspecies.

I consider this form a new subspecies of *S. townsendi* Coutière which differs from the type form in the following points: The carpocerite surpasses the antennule by half its distal article. The scaphocerite has a very broad scale, only 3.8 times as long as wide, this proportion reaching 6 in *S. townsendi*, 5 in the form *brevispinis*. The stylocerite

reaches the extremity of the median antennular article. The anterior palmar border of the large chela is unarmed. Lastly the posterior border of the telson is very convex, and the spines at the angles are shorter than in typical *S. townsendi*. These last three characters connect the new form with *S. townsendi brevispinis* from Lower California.

Type-specimen.—Cat. No. 40019, U.S.N.M., from the Dry Tortugas, Florida, collected by J. F. McClendon.

FIG. 2.—SYNALPHEUS TOWNSENDI SCAPHOCERIS. *a.* CARPOCERITE. *n.* ANTERIOR REGION. *t.* TELSON.

SYNALPHEUS BROOKSI Coutière.

Lives in the loggerhead sponge and nowhere else, according to Doctor McClendon.

SYNALPHEUS MCCLENDONI, new species.

This species is very like *S. sanctithomæ* Coutière, from which it is distinguished by the following characters: The stylocerite reaches the extremity of the basal antennular article. The spine of the scaphocerite is very stout, wider than the scale, and slightly overreaches the antennule. The scale does not exceed the middle antennular article. The carpocerite is at least 5 times as long as wide. The large claw is more slender and the fingers more elongated than in *S. sanctithomæ*. The thickness of the palm is scarcely greater than the length of the fingers, while the proportion is equal to 1.28 in the species cited. Furthermore, the fingers are curved inward, and flattened, crossing at their extremities. The upper border of the palm is terminated by a sharp and regularly conical spine. The telson is wide at its extremity; its posterior border is contained only 2.8 times in its length, instead of 4.7 times in *S. sanctithomæ*.

FIG. 3.—SYNALPHEUS MCCLENDONI. *a.* CARPOCERITE. *b.* LARGE CHELA. *c.* SMALL CHELA. *d.* THIRD FOOT. *n.* ANTERIOR REGION.

This species belongs very near the form which I described as *S. longicarpus approxima*, but it differs from it in the shape of the large chela, in the meropodite, the supero-external border of which is unarmed and regularly rounded, and in the telson, which is broader at the extremity.

Type-specimen.—Cat. No. 40018, U.S.N.M., from the Dry Tortugas, Florida, collected by J. F. McClendon.