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U. S. COMMISSION OF FISH AND FISHERIES,
GEORGE M. BOWERS, Commissioner.

SCHIZOPODS OF THE HAWAIIAN ISLANDS COLLECTED
BY THE STEAMER ALBATROSS IN 1902.

BY

A. E. ORTMANN,

Curator of Invertebrate Zoology, Carnegie Museum, Pittsburg, Pa.

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In the present collection there are represented 21 recognizable species, none of which are new, although one might be regarded as a new variety. Six species are already known from this region, 5 of which are distinctly pelagic forms, although the two species of *Stylocheiron* seem to prefer a certain depth. These 5 are: *Euphausia bidentata*, which was captured by the *Albatross* on a previous trip between San Francisco and the Hawaiian Islands; *Stylocheiron carinatum*, which is known from the "North Pacific" (*Challenger*, without exact locality); *Stylocheiron abbreviatum*, which was captured by the *Challenger* north of the Hawaiian Islands; *Siriella thompsoni*, which is known from the "North Pacific" (*Challenger*) and from between San Francisco and the Hawaiian Islands (*Albatross*); and *Siriella gracilis*, which has been reported from the Northern Pacific by Streets and the *Challenger*. The sixth species previously known from this region is *Boreomysis obtusata*, which was found by the *Challenger* north of the Hawaiian Islands. This seems to be a deep-sea form.

The other 15 species in this collection have not been found previously near the Hawaiian Islands. For some of them this new locality is not remarkable, since they have been found in other parts of the Pacific Ocean; but other cases are more or less interesting on account of the great distance of the localities from which they have been previously recorded. The discovery in the Pacific of the two pelagic forms, *Euphausia pseudogibba* and *Stylocheiron longicorne*, which were known hitherto only from the Atlantic Ocean, is in keeping with what is known of the distribution of related forms, and the same may be said of *Nematodactylus boöpis*, which up to the present time was known only from Ireland. In two instances, however, *Lophogaster* and *Anchialus*, a very close examination of the material at hand was necessary to remove all doubt as to the actual identity of the species in question, since the known facts of distribution rather led to the expectation that the Hawaiian forms would prove to be distinct.

Further detail concerning the geographical distribution of the single species will be given below at the proper places.

SYSTEMATIC ACCOUNT OF THE SPECIES.

Order EUPHAUSIACEA Boas.

Family EUPHAUSIIDÆ Dana.

Genus THYSANOPODA Milne-Edwards.

1. *Thysanopoda obtusifrons* G. O. Sars.

Thysanopoda obtusifrons G. O. Sars, Rep. Voy. *Challenger*, 13, 102, pl. 18, figs. 1-14, 1885; Alcock & Anderson, Journ. Asiat. Soc. Bengal, 1894, 63, 3.

A careful comparison of the present material with Sars's description has led to the conviction that these specimens agree better with this species than those collected by the Plankton Expedition in the Atlantic, and described by the present writer under this name.^a The only difference from Sars's account I am able to discover is that the preanal spine in most of our specimens is present and simple; it was seen in 14 of them, while 3 did not show it (the remaining 1 was dissected before it was examined in this respect). Sars calls this spine "obsolete," but we must bear in mind that he had only 3 individuals at his disposal.

Further, the lobe of the first joint of the antennula is different in shape from that given in Sars's figure (fig. 2 on pl. 18); its inner portion, projecting over the base of the second joint, is drawn as square (with rounded angles), while in our specimens (I have made, however, only one slide) it is rather triangular, the inner angle being produced.

For the rest, our specimens agree completely with *T. obtusifrons*, and we are to mention especially that there is no lateral denticle on the carapace, and that the serrate keels of the telson correspond closely to Sars's description and figure (fig. 3, pl. 18). In these respects and in size (our largest is 19 mm. long; Sars gives 23 mm.) they differ from the specimens taken by the Plankton Expedition and specimens recorded under this name from the Mediterranean.^b This Atlantic species has recently been called *T. vulgaris* by Hansen.^c

Stations: 3806, 50 fathoms, 23° 25' 36" N., 152° 24' 30" W., Erben Bank to Kaiwi Channel, 5 specimens; 3808, 50 fathoms, 22° 10' N., 155° 35' 45" W., northeast of Kaiwi Channel, 13 specimens. 3808: T. aquatilis

Distribution.—"Pacific" and "South Pacific" are the localities given for the specimens collected by the *Challenger*. Alcock and Anderson mention it from the Laccadive Sea, Indian Ocean, 1,250 fathoms.

2. *Thysanopoda agassizi* Ortmann. = *T. monacantha*, Ort. 25'

Thysanopoda agassizi Ortmann, Bull. Mus. Harvard, 14, 1894, 99.

The individual at hand is much larger than the specimens previously recorded. The largest from the Panama region measures 19 mm., while the present one is 32 mm.; but it agrees completely with the description, except that the preanal spine is well developed and has two points, one shorter than the other.

Color in life, according to label: "Light vermilion, darkest on thoracic feet."

Station: 3804, 50 fathoms, 24° 58' 42" N., 149° 11' W., between Erben Bank and Kaiwi Channel, 1 specimen.

Distribution.—Gulf of Panama, 200 fathoms, and between Galapagos and Acapulco, 0-200 fathoms (Ortmann).

Genus EUPHAUSIA Dana.

3. *Euphausia bidentata* (G. O. Sars).

Euphausia pellucida G. O. Sars, Rep. Voy. *Challenger*, 13, 1885, 75, pl. 11 and 12; Ortmann, Decap. & Schizop. Plankton Exped., 11, 1893; Ortmann, Bull. Mus. Harvard, 25, 1894, 101. Caullery, Ann. Univ. Lyon, fasc. 2, 1896, 367. Holt & Tattersall, Rept. Fish. Ireland, 2 app., 4, 1905, 101 and 133.

^aOrtmann, Decapoden und Schizopoden Plankton Exped., 1893, p. 10.

^bSalv. lo Bianco, Pelagische Tiefseefischerei der "Maja," p. 35, pl. 14, fig. 48, 1904. Capri, Naples, about 1,000 m.

^cHansen, Bull. Mus. Oceanogr. Monaco, No. 30, 1905, p. 15.

