

I. EUPHAUSIACEA

As to literature, it may be sufficient to refer to my paper (1911), "The Genera and Species of the Order Euphausiacea."

1. *Euphausia pacifica* H. J. H.

Euphausia pacifica H. J. Hansen (1911), p. 28, fig. 10

A number of moderately preserved specimens from stomachs of ten dog-salmon *Onchorhynchus keta* (Walbaum), Admiralty Head, Whitby Island, Alaska, June 30, 1903.

2. *Thysanoessa spinifera* Holmes

Thysanoessa spinifera H. J. Hansen (1911), pp. 38, 41

Holmes (1900) has published a good description with figure of his single specimen. In the paper quoted (1911) I have added some particulars, basing them on material from the United States national Museum, and in a future paper a new representation of this fine species will be given.

A couple of small specimens, of which at least the larger belongs probably to *T. spinifera*, were taken from seven dog-salmon (*Onchorhynchus keta*) fingerlings, Dundas Bay, Alaska, July 24, 1903.

3. *Thysanoessa raschii* M. Sars

Thysanoessa raschii, H. J. Hansen (1911), pp. 33, 42

Three specimens, but unfortunately without locality, taken in stomachs of salmon belong to this species. A single specimen was found among the above named specimens of *Euphausia pacifica* from dog-salmon, taken at Admiralty Head, Whitby Island, June 30, 1903. Fragments from dog-salmon stomach, Isanotski Straits, Alaska, July 15, 1904, seem to belong to this species.

4. *Thysanoessa gregaria* G. O. Sars

Thysanoessa gregaria H. J. Hansen (1911), pp. 39, 43-44, fig. 15

Having examined three specimens named by Holmes, I can confirm his determination. It is interesting that this species has also been taken off California, at Avalon, Santa Catalina Island.

II. MYSIDACEA

1. *Siriella pacifica* Holmes

Pl. 9, figs. 1a-f

In the report on the "Siboga" Schizopoda I (1910) enumerated twenty species of this genus, eleven of which were established as new to science, and some hitherto overlooked or not sufficiently valued characters were pointed out. As to *Siriella pacifica* Holmes, I stated that it "ought to be re-examined," because it probably belongs "to a group of the genus, whose forms must be established on full-grown males, as the females in two or three cases cannot be separated with certainty, while the males show excellent specific characters in the fourth pair of pleopods."

Having now examined two specimens determined by Holmes, viz., an adult male and a female, my supposition as to the affinities of *S. pacifica* prove to be correct. The species is on the whole more nearly related to *S. inornata* H. J. H. and *S. media* H. J. H. than to any other form.

Description.—Moderately robust. Carapace in both sexes somewhat produced, the frontal plate (pl. 9, figs. 1a, 1f) being a broad, rather low triangle with the vertex somewhat produced, acuminate and acute. Eyes in the male (fig. 1a) considerably smaller than in allied forms, seen from above conspicuously shorter and narrower than the last joint of the peduncle, the posterior margin of which is rather convex; eyes in the female distinctly larger than in the male, seen from above (fig. 1f) conspicuously shorter but slightly broader than the peduncular joint. Antennule in the male with third peduncular joint only a little longer than broad; flagellum in the male extremely long, reaching beyond the hind margin of fourth abdominal segment. Antennal squama subequal in both sexes, with the terminal lobe much broader than long (fig. 1a).

Pseudobranchial rami on second to fourth pairs of male pleopods somewhat circularly curved, less spirally twisted than in *S. inornata*. Both rami of third pair of male pleopods terminating in a robust, spiniform, nearly straight, seemingly naked seta not longer than the normal setae on the preceding joint and with the

from near the middle of each margin the spines increase conspicuously in length backwards, and the intervals are occupied by quite small spines, one or two in the first interval, four spines in most of the other intervals, while no small spines are found between the larger ones along the proximal half of the lateral margins. The telson is subtruncate with four terminal spines; those of the median pair are very large, while those of the outer pair are less than half as long.

Length of the specimen seen, 8 millimeters.

3. *Neomysis franciscorum* Holmes

Pl. 9, figs. 3a, b

The single mutilated type-specimen is at hand. Holmes (1900) said: "This species is closely allied to *Neomysis rayii* (Murdoch) from Point Barrow, but differs in having the telson acute instead of 'truncated', and in having the terminal portions of the thoracic legs divided into a greater number of articulations." Whether the last named feature is of real value as a specific character I am not prepared to decide, but Holmes's statement that the telson is acute in *N. franciscorum* is incorrect. In order to make *N. franciscorum* recognizable I have drawn two figures (pl. 9, figs. 3a, b). The species is very closely allied to *N. rayii* Murdoch, of which I have two co-types (received from the United States National Museum) and a large number from various localities in northeastern Asia.

The antennal squamae are long and very narrow in both species, but both squamae of *N. franciscorum* having lost the distal part no possible difference between the two species in this feature can be pointed out by me. The eyes and eye-stalks are subsimilar in both forms, perhaps comparatively a little more slender in *N. rayii*. The frontal plate of the carapace is in *N. franciscorum* (fig. 3a) considerably shorter than in *N. rayii*; in *N. franciscorum* it is considerably less than half as long as broad, while in *N. rayii* it is longer and proportionately narrower, being distinctly more than half as long as broad. The telson (fig. 3b) is proportionately narrower than in *N. vulgaris*, being somewhat more than two and a half times as long as broad, but otherwise, in the main, as in the last named species. Each margin has

twenty-four or twenty-five somewhat short spines, the more distal pairs decidedly longer than those on the proximal half; the end is truncate and had been furnished with a couple of spines lost in the specimen, and between these spines an extremely small pair of spines is discernible. In *N. rayii* the telson has only nineteen to twenty-one or twenty-two spines on each lateral margin, and its most distal part is distinctly broader than in *N. franciscorum*, the terminal part between the last pair of lateral spines and the end being in *N. rayii* broader than long, in *N. franciscorum* only as broad as long.

Judging from the conspicuous difference in the length of the frontal plate between *N. franciscorum* and *N. rayii*, together with the smaller differences in the number of lateral spines and the shape of the terminal part of telson, I am inclined to think that *N. franciscorum* is a valid species. Unfortunately only a single specimen has been seen.

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LITERATURE CITED

- * CZERINIAVSKY, V.
1882-83. Monographia Mysidarum imprimio Imperii Rossici (marin., lacustr. et fluviatiliium). Fasc. I. Arb. St. Petersburg Naturf. Ges., 12, Beilage, 170 pp.; Fasc. II. *Ibid.*, 13, 1-85, pls. 1-4; Fasc. III. *Ibid.*, 18, i-viii, 1-106, pls. 5-33.
- HANSEN, H. J.
1910. The Schizopoda of the Siboga Expedition. Res. Siboga Exped., 37, 123 pp., 16 pls.
1911. The genera and species of the order Euphausiacea, with an account of remarkable variation. Bull. Inst. Océanogr. Monaco, 211, 54 pp. 18 figs. in text.
- HOLMES, S. J.
1900. Synopsis of California stalk-eyed Crustacea. Occ. Papers Calif. Acad. Sci., 7, 262 pp., 4 pls., 2 figs. in text.

EXPLANATION OF PLATE 9

1. *Siricella pacifica* Holmes

- Fig. 1a. Anterior part of an adult male, from above. $\times 20$.
 Fig. 1b. Left eye of the male, from the outer side. $\times 22$.
 Fig. 1c. Terminal parts of both rami of fourth right pleopod. $\times 82$
en, endopod; *ex*, exopod.
 Fig. 1d. End of abdomen with left uropod of the male, from above.
 $\times 20$.
 Fig. 1e. Distal portion of the telson shown in figure 1d, from above.
 $\times 67$.
 Fig. 1f. Front end of carapace with eyes of a female, from above.
 $\times 22$.

2. *Mysis costata* Holmes

- Fig. 2a. Distal part of left antennal squama, from below. $\times 52$.
 Fig. 2b. Fifth and sixth abdominal segments of a female, from above.
 $\times 22$, *V*, fifth segment; *VI*, sixth segment.
 Fig. 2c. Telson of a female, from above. $\times 34$.
 Fig. 2d. Distal portion of the same telson, from above. $\times 52$.

3. *Neomysis franciscorum* Holmes

- Fig. 3a. Anterior part of the type-specimen, from above. $\times 19\frac{1}{2}$.
 Fig. 3b. Telson of the type-specimen, from above. $\times 11$.

