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NOTES ON THE SKELETON SHRIMPS (CRUSTACEA:
CAPRELLIDAE) OF CALIFORNIA

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There are relatively few published records of those bizarre amphipods—the skeleton shrimps, or caprellids—from California. Stimpson (1857) described *Caprella californica*¹ from San Francisco Bay, and Boeck (1872), *Caprella verrucosa* presumably from near San Francisco. Stebbing's monumental monograph on the Amphipoda (1888) contains abstracts of almost all works on the Caprellidae up to that date. The three great monographs on the Caprellidae by Paul Mayer (1882, 1890, 1903) review most literature on the family during the nineteenth century. In the second (1890) and primarily in the third (1903) Mayer newly described several species and what he called "varieties" from the California coast and recorded several more previously described. Since 1903 there have been only three papers specifically on California caprellids—two by La Follette (1914, 1915) and one by Shaw (1916). Johnson and Snook (1927) and Ricketts and Calvin (1952) in their respective texts on Pacific Coast invertebrates include brief sections on caprellids. Light (1941) in his syllabus on marine invertebrates has listed those of the Moss Beach and San Francisco Bay areas. No one except Mayer has, however, recognized the diversity of the skeleton shrimp fauna in California, and because of certain idiosyncrasies in his classification he himself did not express their division into species in a manner compatible with generally held modern views on speciation.

We have collected skeleton shrimps rather intensively in three regions along the Pacific coast of California—the Dillon Beach area (38° 15' N, 122° 57' W) which is north of San Francisco Bay, and the Moss Beach (37° 30' N, 122° 30' W) and Pacific Grove-Monterey Bay areas (36° 30'-39' N, 121° 54'-57' W) which are south thereof. These collections were made in 1941-42 by the senior author and in 1952 by the junior author. In addition we have had available to us collections from these three areas made by other investigators—including specimens from the U. S. National Museum, loaned to the senior author by Dr. Waldo L. Schmitt.

Although we have specimens from several localities in California in addition to the three mentioned, we have not collected in those areas ourselves and are largely confining ourselves here to a consideration of the material from coastal waters in the vicinity of Dillon Beach, Moss Beach, and Pacific Grove. However, we have found in these areas, taken collectively, all but one of the named species previously reported for California.

Separately we are publishing a key (Dougherty and Steinberg, in press) to all species of the family Caprellidae recorded from California by previous workers and by us and accepted by us as valid.

It is the purpose of this brief paper to record 17 species found in the regions indicated and to give taxonomic notes on the California fauna, revising the nomenclature and including descriptions of two hitherto unnamed species and erection of one new genus (for the one named California species not available to us and hitherto known as *Paedaridium breve* La Follette, 1915).

The two new species and one new genus are described herewith:

Caprella pilipalma sp. nov.

Diagnosis.—*Caprella*: cephalon bearing small, erect spine as well as some very small tubercles posterior to it. Dorsal and lateral regions of body bearing low tubercles, especially on posterior segments; ventral surface, particularly of the more anterior segments, also bearing a few low tubercles—especially in the male. 2nd, 3rd, and 4th peraeods approximately of equal length; 5th peraeod $\frac{1}{2}$ length of 2nd; 6th and 7th combined $\frac{2}{3}$ length of 2nd. Pleura on peraeods 3 and 4 only slightly developed. Gills elliptical and somewhat elongate.

First antenna roughly $\frac{1}{3}$ length of body; flagellum slightly shorter than peduncle and composed of 8-9 segments. 2nd antenna $\frac{3}{4}$ length of 1st and bearing natatory hairs on inner surface.

First gnathopod small, propodus a right triangle in outline; palm minutely denticulate and bearing a pair of grasping spines at base; dactyl slightly curved and minutely denticulate on its inner surface. 2nd gnathopod about equal in length to 3rd and 4th peraeods, attached posteriorly to middle of 2nd peraeod in male, but at anterior end of this segment in female—in younger males attached to middle of segment; 1st segment (coxa) of gnathopod slightly longer than 2nd and 3rd combined, bearing a pair of anterior ridges, the outer prolonged into a prominent spine; 2nd segment (basis) also bearing a distal spine anterolaterally; basal segments and propodus all bearing numerous small hairs; propodus comprising about $\frac{2}{3}$ entire appendage; palm slightly concave in outline and bearing neither poison tooth nor grasping spines, thickly set with long, colorless hairs; a tooth-like projection at distal end of palm, dactyl resting on this when closed; dactyl slightly curved—in females and young males smooth on its inner surface, in old males crooked and bearing a number of irregular denticulations on inner surface.

Three peraeopods progressively shorter from peraeod 5-7, set with a few short spine-like hairs as well as with low tubercles; palm of each bearing a pair of grasping spines proximally; rest of palmar surface set with two rows of spine-like hairs, one on either side of a row of small denticulations.

A large male measures 11 mm. in length; a large female, 9 mm.

Type specimen.—Adult male, U.S.N.M. Cat. No. 94086. *Allotype*.—Female, U.S.N.M. Cat. No. 94087. *Type locality*.—Pescadero Point, Monterey County, California.

Discussion.—*C. pilipalma* is a deviant member of the "acutifrons" group which was established by Mayer. It agrees with the already described "varieties" (= species) in bearing a single, medially situated spine on the cephalon, in having the basal segment of the 2nd gnathopod only slightly longer than the 2nd and 3rd segments combined, in having the 2nd, 3rd, and 4th peraeods approximately equal in length, the 5th-7th being progressively shorter, and in having, in the female, the point of attachment of the 2nd gnathopod at the anterior end of the 2nd peraeod. It differs from those described from California primarily in details of tuberculation, in the structure of the propodus of the 2nd gnathopod and in the development of pleura on the peraeods.

Within "*Caprella acutifrons*" Mayer (1903, p. 89) recognized four morphologically distinct groups. These were based on the structure of the appendages, especially of the 2nd gnathopod. The three already named species from California, *C. incisa*, *C. angusta*, and *C. verrucosa*, all belong to the group which bears a proximal poison tooth on the 2nd gnathopod. *C. pilipalma*, on the other hand, belongs to the group which lacks a poison tooth. In bearing small tubercles on the body and cephalon, it shows a certain similarity to *C. scabra* Holmes, 1904. The latter, however, is an Alaskan form which is akin to the group which possesses a distal poison tooth. It also lacks the palmar hairs which are so characteristic of *C. pilipalma* and from which the trival name has been taken.

Mayer included two forms in the group which lacks a poison tooth, namely, *C. acutifrons* var. *simulatrix* Mayer, 1903, and *C.a.* var. *tabida* (= *C. tabida* Lucas, 1849). *C. pilipalma* differs from both in being tuberculated and in bearing an erect spine on the cephalon, rather than an anteriorly directed one. *C. acutifrons* var. *simulatrix* is recorded from Barfleur, France, on the English Channel; *C. tabida*, from the Algerian coast.

C. pilipalma may occur together with *C. angusta*, *C. incisa*, and *C. verrucosa* on the same hydroids.

Tritella tenuissima sp. nov.

Diagnosis—*Tritella*: Body very much elongated, slender and completely smooth. No spine on cephalon, which is as long as 2nd peraeod, which, in turn, is $\frac{1}{2}$ length of 3rd peraeod. 3rd, 4th, and 5th peraeods all approximately equal in length. 6th and 7th peraeods together slightly shorter than 2nd. 7th peraeod a little more than $\frac{1}{2}$ length of 6th. Gills elliptical and quite elongated. Mandible bearing 3-jointed palp, which has numerous hairs on end segment.

1st antenna $\frac{1}{2}$ length of body; flagellum composed of 14-18 segments and comprising $\frac{1}{2}$ length of antenna. 2nd antenna $\frac{2}{3}$ length of 1st; flagellum composed of 2 segments; without natatory hairs.

1st gnathopod slightly shorter than cephalon; propodus a right triangle in outline; palm bearing a pair of grasping spines proximally and minutely denticulate; whole gnathopod bearing a number of stiff bristlelike hairs. 2nd gnathopod about as long as 3rd peraeod; attached

anteriorly to middle of 2nd peraeod; coxa nearly 5 times length of 2nd and 3rd segments combined and twice length of propodus; palm of propodus bearing a small tooth at base, which, in turn, bears a single grasping spine; another tooth in middle of palm, separated by a small cleft from a slight concavity which is densely set with hairs; dactyl curved and also bearing a concavity on middle third of inner surface which is also set with hairs.

Appendages on peraeods 3 and 4 each consist of one segment, attached to bases of gills. Appendage (peraeopod) of 5th peraeod normal (six segmented) and attached posteriorly to middle of peraeod; a pair of grasping spines located at middle of palm and reached by short dactyl. Peraeopods on peraeods 6 and 7 with grasping spines proximally on palms; dactyl long, curved, and extending beyond spines. Peraeopod 7 longest of three.

Abdomen typical of genus, bearing $\frac{1}{2}$ pair of appendages in male and no appendages in female.

A large male measures 18 mm. in length; only female, 14 mm.

Type Specimen.²—Adult male, U.S.N.M. Cat. No. 94089. *Allotype*.—Female, U.S.N.M. Cat. No. 94090. *Type locality*.—South of Carmel Bay, California, 300+ fath. *Other localities*: Point San Pedro, Santa Cruz Islands (Sta. 4427 "Albatross" 447-510 fath.); N.E. point, Santa Barbara Island (Sta. 4415 "Albatross" 131-638 fath.); S.E. point, Santa Catalina Island (Sta. 4407 "Albatross" 334-600 fath.)

Discussion.—This species is, in our estimation, a much modified member of the genus *Tritella*. It is characteristic of the genus in possessing one-segmented appendages on segments 3 and 4, and in bearing only a vestigial pair of abdominal appendages (= Mayer's " $\frac{1}{2}$ pair") in the male and none in the female. It differs, however, from the described members of this genus in lacking natatory hairs on the 2nd antenna and in being extremely long and slender—hence its trivial name.

Mayer (1903) described a genus, *Triliropus*, which appears to be almost identical to *Tritella* except that the former lacks natatory hairs on the 2nd antenna and questionably bears a vestigial pair of abdominal appendages in the female. The single described species of *Triliropus*, *T. uncinatus* Mayer, 1903, also lack grasping spines on the three posterior peraeopods whereas they are present in *Tritella*, and in the three previously named species are located on the middle of the palmar surface. In an unnamed *Tritella* sp. of Mayer (1903) they are located proximally. *Tritella tenuissima*, as described above, possesses grasping spines on these three peraeopods and bears those on the fifth pair in the middle of the palmar surface, the others proximally.

Although this species lacks natatory hairs on the 2nd antennae, we feel that it is indeed a member of the genus *Tritella*. It is also our opinion that, if the female of the genus *Triliropus* is shown to lack ab-

¹A description of this species first appeared in a San Francisco newspaper entitled "The Pacific" for April 28, 1856, but it has been questioned if this constitutes valid publication. Later, in 1863, the original description was reprinted in book form in vol. of the *Proc. Calif. Acad. Nat. Sci.*; in the meantime a description had appeared in 1857 in the *Boston J. Nat. Hist.*

²According to collecting data the type material of *T. tenuissima* occurred with "*Asteronyx* and other bottom stuff," and its color in life was "dark coral red and white."

dominal appendages, then this genus will certainly fall as a synonym of *Tritella*.

Perotripus gen. nov.

Diagnosis.—Caprellidae: mandibular palp 3-segmented; no natatory hairs on 2nd antenna; flagellum of 2nd antenna composed of 2 segments; peraeopods on peraeod 3 3-segmented; on peraeod 4 1-segmented; on peraeod 5 3-segmented; on peraeods 6 and 7 normal; gills on peraeods 3 and 4. (Other generic characters used by Mayer were not described for *P. brevis* by La Follette—namely: number of hairs on end segment of mandibular palp, characteristics of maxilliped, and number and character of abdominal appendages.)

Type and only species.—*Paedaridium breve* La Follette, 1915 [= *Perotripus brevis* (La Follette, 1915) gen. et comb. nov.]

Discussion.—*Perotripus* differs from all other known caprellid genera³ in the number of segments in the peraeopods on peraeods 3, 4, and 5 taken collectively. It is one of the few genera in which the number of segments in the peraeopods of peraeod 3 differs from the number in those of peraeod 4. As regards peraeods 3-5, *Perotripus* is closest to *Triperopus* Mayer, 1903; it is also close to *Mayerella* Huntsman, 1915, to Mayer's *genus incertum* from Southern California, to *Liropus* Mayer, 1890, and possibly to *Proliropus* Mayer, 1903. The segments of the peraeopods of these peraeods may be summarized for the six genera as follows:

<i>Perotripus</i> 3-1-3	Mayer's <i>genus incertum</i> ⁴ 2-2-3
<i>Triperopus</i> 3-3-3	<i>Liropus</i> 1-1-3
<i>Mayerella</i> ⁴ 2-2-3	<i>Proliropus</i> 2-2-†

It may be questioned whether some of these genera might be lumped into a single genus, but such action could only be justified on the basis of a thorough-going revision of the Caprellidae.

We have erected the new genus *Perotripus* with some reluctance, not having material of *Perotripus brevis* available to us. However, we feel that a generic vehicle appropriate for this species is necessary for the purpose of our key to the Californian caprellids being published elsewhere. The generic name *Perotripus* has been formed by anagram of *Triperopus*.

Occurrence and Habitats

Following are listed the 17 species in our hands, with data on their occurrence in the three areas (designated D, M, and PG) and on their habitats. The 13 species actually collected by us are marked with an asterisk (*); specimens of these were all collected in the intertidal zones. Those localities in which we ourselves have collected are marked with a dagger (†). Three species have been available to us, insofar as the areas under consideration are concerned, only in the collections of the U. S. National Museum and are all from deeper waters. The remaining species (*Metacaprella anomala* (Mayer, 1903) comb. nov.) was col-

³All caprellid genera since Mayer's last monograph (1903) are to be found listed by Stephensen (1944).

⁴*Mayerella* and Mayer's *genus incertum* differ in the presence of a mandibular palp in the former and its absence in the latter.

lected from the intertidal zone, as well as from deeper waters, but not by us personally.

- 1.* *Caprella angusta* Mayer, 1903
D: †Tomales Point (on *Aglaophenia* spp. and *Phyllospadix*); †Perch Rock Point, †Second Sled Road (on *Aglaophenia* spp.); M: Frenchman's Reef (on algae); PG: †Hopkins Marine Station (on *Aglaophenia* spp.); †Pescadero Point (on *Cystoseira*)
- 2.* *Caprella brevirostris* Mayer, 1903
D: †Tomales Point, †First Sled Road, †Second Sled Road (on *Aglaophenia* spp.)
- 3.* *Caprella californica* Stimpson, 1857
D: †Tomales Bay (on red and green tuberous algae and *Zostera*); M: Kelp Cove (on coralline algae); PG: †Monterey Bay (in kelp beds; dredged, 13 fath.); Elkhorn Slough (on *Obelia* and *Zostera*)
- 4.* *Caprella equilibra* Say, 1818
D: †First Sled Road, †Second Sled Road (on *Aglaophenia* spp.); M: (locality not recorded); PG: †Monterey Wharf (on campanularid hydroids); †Pescadero Point (on various hydroids and tunicates)
5. *Caprella gracilior* Mayer, 1903
PG: Monterey Bay (755-958 fath. on gorgonians); near Point Pinos Lighthouse (dredged)
- 6.* *Caprella incisa* Mayer, 1903
D: †Tomales Point, †First Sled Road, †Second Sled Road (on *Aglaophenia* spp.); M: †North Reef (on kelp holdfast and various hydroids); Frenchman's Reef; PG: †Monterey Wharf (on campanularid hydroids); †Pescadero Point (on various hydroids and sponges); †Mission Point (on various hydroids)
7. *Caprella laeviuscula* Mayer, 1903
PG: †Monterey Bay (†dredged)
- 8.* *Caprella pilipalma* sp. nov.
PG: †Pescadero Point (on various hydroids)
- 9.* *Caprella uniforma* La Follette, 1915
M: Frenchman's Reef (on *Aglaophenia* spp.); Kelp Cove; PG: †Pescadero Point (on coralline algae)
- 10.* *Caprella verrucosa* Boeck, 1872
D: †Tomales Point, †Perch Rock Point, †First Sled Road, †Second Sled Road (on *Aglaophenia* spp.); PG: †Pescadero Point (on various hydroids and bryozoans); †Mission Point (on various hydroids)
- 11.* *Deutella californica* Mayer, 1890
PG: †Monterey Wharf (on campanularid hydroids); Mussel Point
12. *Metacaprella anomala* (Mayer, 1903) comb. nov.
M: Frenchman's Reef (on *Aglaophenia* spp.); Kelp Cove; PG: Monterey Bay (50-57 fath.)
- 13.* *Metacaprella ferrea* (Mayer, 1903) comb. nov.
M: Montara Point (on algae); PG: †Pescadero Point (on various hydroids)
- 14.* *Metacaprella kennerlyi* (Stimpson, 1854) comb. nov.
D: †First Sled Road, †Second Sled Road (on *Aglaophenia*); M: Frenchman's Reef, Pillar Point (on *Aglaophenia* spp.); North Reef (on various hydroids); PG: †Monterey Wharf (on camp-

- ularid hydroids); †Pescadero Point (on various hydroids, sponges, bryozoans and algae); †Carmel Point; †Sobrantes Point
- 15.* *Tritella laevis* Mayer, 1903
D: †Tomales Point (on coralline algae); M: Marine View Rocks (on coralline algae); PG: Monterey Bay (48 fath., mud)
- 16.* *Tritella pilimana* Mayer, 1890
D: Tomales Bay (on *Zostera* bearing tubularian hydroids); M: †North Reef (on coralline algae)
17. *Tritella tenuissima* sp. nov.
PG: South of Carmel Bay (300+ fath.)

There remains but one named species hitherto recorded from California of which we have no material—namely, *Perotripus brevis* (La Follette, 1915) gen. et comb. nov. An unnamed Californian form from Sausalito on San Francisco Bay, designated by Mayer (1903, p. 129) as an undeterminable *Caprella* and stated to be similar to *M. kennealyi*, has not been identified in our collections. Nor have we found representatives of the species referred to a *genus incertum* by Mayer (1903, p. 70), who recorded a single female from Santa Barbara; it would appear to represent a new genus relatively close to *Perotripus*. In addition, Mayer recorded and figured (1903, p. 86; Plate 3, fig. 26) a single male of an unnamed "variety" of "*C. acutifrons*" from Pacific Grove, which he stated to be similar to, but more slender than, *C. angusta*. It is possible that such a species exists, for, in our material, males of more slender structure and less developed pleura occur; however, these appear to represent less mature specimens of *C. angusta*.

All species encountered by us have been recorded from California waters by previous workers with the exception of *Caprella pilipalma* and *Tritella tenuissima*. Of the 15 species both available to us and previously recorded, Mayer (1903) recorded 14—all but *C. uniforma*, first reported and named by La Follette (1915). Mayer did not report *C. equilibra* by name, but we consider his species *C. mendax* as identical with the former; La Follette (1914) did, however, record *C. equilibra* by name. Like us Mayer did not have material of *Perotripus brevis*, of which La Follette's description is the only record in the literature so far.

Including the two unnamed species of Mayer—*Metacaprella* sp. and the one referred to a *genus incertum*, there appear to be at least 20 species in 5 genera of skeleton shrimps in California, and no doubt systematic collecting, especially from deeper waters will reveal others, perhaps many.

Taxonomic Considerations

Considerable revision in the trivial names hitherto used has been necessary for the purposes of this paper. Most importantly this is necessitated by our disagreement with Mayer's concept of "variety." Especially in the composite species that he called *Caprella acutifrons* Latreille, 1816 (an apparently invalid specific name, but one on which no decision can appropriately be reached in this paper), he has recognized a large number of varieties, which appear by all usual criteria to be full species—for the most part, at least. Whereas it is certainly true that in the Caprellidae there occur, especially in the genus *Caprella*, groups of very

closely related species, it does not appear justifiable to consider them varieties of a single species in the absence of structurally intergrading forms. Moreover, in certain cases, two or more of these "varieties" co-exist in the same habitat. This is true, for example, for *C. angusta*, *C. incisa*, and *C. verrucosa*, which Mayer treated as varieties of *C. acutifrons*; in fact, this is one of the most striking examples of Mayer's lumping of such species.

We have accordingly separated out the foregoing three species from *C. acutifrons* Latreille, 1816—also *C. gracilior* from *C. linearis* (Linné, 1767) Bosc d'Antic, 1802, and *C. californica* from *C. scaura* Templeton, 1836. Our new species, *C. pilipalma*, also belongs to the "*C. acutifrons*" group.

By contrast and with seeming inconsistency, Mayer took a very narrow view of species in certain other cases. An extreme example is that of his *Caprella mendax*, which we have not been able to separate satisfactorily from *C. equilibra* and accordingly have sunk into synonymy therewith.

It may well be that true geographic races, or subspecies, occur in certain widespread species of skeleton shrimps. The establishment of these will, however, demand much further collecting and study of specimens. We have observed no cases in Californian material where subspeciation is indicated, either within the area or in relation to forms in other areas.

A series of three papers from Pomona College, Claremont, California (La Follette, 1914, 1915; Shaw, 1916) contain records of seven acceptable species for the region of Laguna Beach in Southern California, but only three of these were designated by the trivial names that are used here—one species already described (*C. equilibra*) and two forms new at that time (*C. uniforma* and *Perotripus brevis*, of which the latter was incorrectly assigned to the genus *Paedaridium* Mayer, 1903). In the case of a supposedly new species called by La Follette (1915) *Aeginella hirsuta* (= *Tritella pilimana* Mayer, 1890), the existence of one-segmented appendages on the third and fourth thoracic segments or peraeods was completely overlooked. In another case, Shaw (1916) redescribed as a presumably new species, *C. tuberculata* (a preoccupied name) a form already recorded by La Follette as *C. acutifrons* (= *C. verrucosa*).

Following are listed the synonyms, where such exist, of specific names adopted by us. We have retained Mayer's authorship for those trivial names first used by him as variety names. We do this in accordance with the decision of the International Commission on Zoological Nomenclature at Paris in 1948 (Bull. Zool. Nomencl., 1950, vol. 4, pt. 6, p. 91) that ". . . any trivial name published, prior to [January 1, 1951], as the trivial name of a taxonomic unit of less than specific rank should be deemed to have been published as the name of a subspecies . . . when . . . the author concerned . . . did not clearly indicate the status attributable by him to the unit so named, that is to say, whether he regarded it as being a subspecies or as being an infra-subspecific form." We hold that in using the designation "variety" Mayer did not specify whether he considered forms so-named to be subspecific or infra-subspecific in nature; actually, his concept of "variety" was clearly that of an entity of at least subspecific rank.

Name adopted by us	Synonyms
<i>Caprella angusta</i> Mayer, 1903	<i>Caprella acutifrons</i> var. <i>angusta</i> Mayer, 1903; <i>Caprella geometrica</i> , of La Follette, 1914 (non Say, 1818)
<i>Caprella brevirostris</i> Mayer, 1903	<i>Caprella septentrionalis</i> , of La Follette, 1914 (non Krøyer, 1842)
<i>Caprella californica</i> Stimpson, 1857	<i>Caprella scaura</i> var. <i>californica</i> , of Mayer, 1890
<i>Caprella equilibra</i> Say, 1818	<i>Caprella aequilibra</i> Spence Bate, 1862 (emend, pro <i>equilibra</i>); <i>Caprella mendax</i> Mayer, 1903
<i>Caprella gracilior</i> Mayer, 1903	<i>Caprella linearis</i> var. <i>gracilior</i> Mayer, 1903
<i>Caprella incisa</i> Mayer, 1903	<i>Caprella acutifrons</i> var. <i>incisa</i> Mayer, 1903
<i>Caprella verrucosa</i> Boeck, 1872	<i>Caprella septentrionalis</i> var. <i>verrucosa</i> , of Mayer, 1890; <i>Caprella acutifrons</i> var. <i>verrucosa</i> , of Mayer, 1903; <i>Caprella acutifrons</i> , of La Follette, 1914 (non Latreille, 1816); <i>Caprella tuberculata</i> Shaw, 1916 (non Spence Bate and Westwood, 1868)
<i>Metacaprella anomala</i> (Mayer, 1903) comb. nov.	<i>Caprella anomala</i> Mayer, 1903
<i>Metacaprella ferrea</i> (Mayer, 1903) comb. nov.	<i>Caprella ferrea</i> Mayer, 1903
<i>Metacaprella kennerlyi</i> (Stimpson, 1864) comb. nov.	<i>Caprella kennerlyi</i> Stimpson, 1864
<i>Perotripus brevis</i> (La Follette, 1915) gen. et comb. nov.	<i>Paedaridium breve</i> La Follette, 1915
<i>Tritella pilimana</i> Mayer, 1890	<i>Aeginella hirsuta</i> La Follette, 1915

A few words are desirable on the status of the five nominal genera applied to Californian caprellids, these being *Caprella* Lamarek, 1801, *Deutella* Mayer, 1890, *Metacaprella* Mayer, 1903, *Perotripus* gen. nov., and *Tritella* Mayer, 1890. Mayer did not designate type species for any of his genera, although these, in many cases, were automatically indicated by monotypy. In the case of those of Mayer's genera for which no type was indicated we have not been able to find subsequent type selections for a number of them, including *Deutella* and *Metacaprella*. The latter genus was provisionally erected in 1903 for *Caprella kennerlyi* and *C. anomala* on the basis of the presence in the female of a pair of abdominal appendages, each consisting of one well formed segment, as opposed to the rudiments of a segment in the female of *Caprella* proper. Although no one subsequently has adopted this genus, we believe that in light of Mayer's general treatment of the Caprellidae, to which we subscribe, it is justifiable. We have provisionally referred *Caprella ferrea* Mayer, 1903, to it as well because of the general resemblance of this species to *M. kennerlyi* and *M. anomala*, even though, like Mayer, we

have found no females and cannot yet verify that the character of the female abdomen places it in *Metacaprella*.

Following is a list of five genera under consideration with their types—selected by us in the two cases necessary:

Caprella Lamarck, 1801: type (by selection [Spence Bate and Westwood, 1868]) *Cancer linearis* Linné, 1767 [= *Caprella linearis* (Linné, 1767) Bosc d'Antic, 1802]

Deutella Mayer, 1890: type (by present selection), *Deutella californica* Mayer, 1890

Metacaprella Mayer, 1903: type (by present selection), *Caprella kenneerlyi* Stimpson, 1864 [= *Metacaprella kenneerlyi* (Stimpson, 1864) comb. nov.]

Perotripus gen. nov.: type (by present designation), *Paedaridium breve* La Follette, 1915 [= *Perotripus brevis* (La Follette, 1915) gen. et comb. nov.]

Tritella Mayer, 1890: type (by indication [monotypy]), *Tritella pilimana* Mayer, 1890

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⁵These figures were on a plate that was inadvertently not published in the *Forhandling*; however, the copy in the University of California library has a photostatted insert of the original plate, between pp. 50 and 51, apparently obtained by the late Professor S. F. Light (it bears notation in his handwriting).

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