

No. 16. — *Exploration of Lake Titicaca* by ALEXANDER AGASSIZ
and S. W. GARMAN.

IV. *Crustacea.* By WALTER FAXON.

THE crustacean fauna of Lake Titicaca, as indicated by the dredgings of Mr. Agassiz, carried on with the assistance of Mr. S. W. Garman, in January and February, 1875, is very meagre. Excepting a species of *Cypris*, all the specimens collected belong to one amphipodous genus, *Allorchestes*, which had hitherto afforded but one or two authentic fresh-water species, ranging from Maine to Oregon and the Straits of Magellan. Seven new species are described in this paper from Lake Titicaca. Several of them are remarkable among the *Orchestidæ* for their abnormally developed epimeral and tergal spines. Some are also noteworthy as comparatively deep-water forms of a family commonly regarded as pre-eminently littoral. I believe that no *Orchestidæ* have heretofore been found at a depth so great as sixty-six fathoms,* unless it be *Orchestia* (*Talitrus*) *Brasiliensis* Dana and *Nicea media* (Dana), dredged in the harbor of Rio Janeiro (at what depth is not specified) by the Wilkes Exploring Expedition. The marine species usually inhabit the shore above low-water mark, and the previously described fresh-water species are found in the shallow water of brooks, pools, or edges of lakes. No strictly fresh-water *Orchestidæ* have been reported from the Eastern continent, although a few terrestrial *Orchestiæ* are described as inhabiting moist soil away from the sea.

* The greatest depth of the lake is 154 fathoms.

ORDER AMPHIPODA.

FAMILY ORCHESTIDÆ.

GENUS **ALLORCHESTES**.

- Syn. 1849. *Allorchestes* (in part) DANA, Amer. Jour. Sci. [2], VIII. 136.
 1852. *Allorchestes* (in part) DANA, Proc. Amer. Acad. Sci. Boston, II. 205.
 1852. *Allorchestes* (in part) DANA, U. S. Explor. Exped. XIII. Crust. Pt. II. 883.
 1856. *Allorchestes* BATE, Rep. Brit. Assoc. 1855, p. 57 (no descrip.).
 1857. *Allorchestes* BATE, Ann. Mag. Nat. Hist. [2], XIX. 136.
 1861. *Allorchestes* BATE and WESTWOOD, Brit. Sessile-eyed Crust. I. 38.
 1862. *Allorchestes* BATE, Cat. Amphip. Crust. Brit. Mus. p. 34.
 1866. *Allorchestes* HELLER, Beitr. z. näh. Kennt. d. Amphip. d. adriat. Meeress, p. 4. Denkschr. d. Math.-Natur. Classe d. Akad. d. Wissensch.
 1874. *Hyalella* SMITH, Rep. U. S. Fish Comm. for 1872 and 1873, p. 645.
 1874. *Hyalella* SMITH, Rep. U. S. Geolog. Geograph. Survey of Colorado for 1873, p. 608.

First maxillæ with small uniarticulate palpi. Palpus of the maxillipeds composed of four segments, the distal segment usually bearing a movable spine at its apex. First antennæ shorter than the second antennæ, longer than the peduncle of the second antennæ. First and second thoracic legs subcheliform. Propodite of second pair larger than propodite of first pair, and much larger in the male than in the female. Telson short and entire.

Differs from *Nicea* Nicolet (as limited by Bate and Heller) in having the telson single instead of double or cleft. The fourth segment of the palpus of the maxillipeds is well developed, as in *Nicea* and *Gammarus*, and, as in these genera, is commonly unguiculiferous. Neither Dana, in describing *Allorchestes*, nor Nicolet, in his description of *Nicea* * (published in the same year), mentioned the form of the telson. The two names were therefore synonymes. Bate, in a list of British *Amphipoda*, published in 1856 in the Report of the British Association for the Advancement of Science, indicates, without describing, two genera, *Allorchestes* Dana and *Galanthis*, *gen. nov.*, which, as appears from his subsequent descriptions, were based upon the trivial character of a different relative length of the first and second antennæ, and a *differently formed telson*; Dana's name, *Allorchestes*, being restricted to those species in which the first antennæ are (at least) as long

* Gay's *Historia de Chile*. Zool., III. 237, 1849.

as the peduncle of the second antennæ and the telson entire, and his own name *Galanthis* including the species with the two pairs of antennæ subequal and short and the telson cleft or double. In 1861 he suppressed the name *Galanthis* in favor of Nicolet's *Nicea*. The proportion of the antennæ and the form of the telson brought together by Bate in his generic diagnoses are not in reality always concomitant, and Heller for the first time properly distinguished the two genera by the character of the telson alone. Grube* adopts the relative length of the two pairs of antennæ (at most a specific character) as the generic distinction. All his species of *Allorchestes* have a double telson, and should be transferred to *Nicea*.

Boeck,† apparently misled by the fact that Bate carelessly describes *Nicea Nilssonii* with an entire telson, and places it under *Allorchestes*,‡ would unite the two genera, giving as a generic character "*appendix caudalis brevis, crassa et fissa*." He furthermore considers both *Allorchestes* and *Nicea* synonymous with Rathke's older *Hyale*,§ the type of which, *H. Pontica*, was carefully described and figured with the posterior caudal stylets two-branched. Boeck has not had access to Rathke's type, as far as I can learn; but in a specimen from the Mediterranean, "which is doubtless Rathke's species," he finds the last pair of saltatory appendages one-branched. This assumption of identity, it seems to me, cannot outweigh the careful description and illustration of the founder of the genus, unless confirmed by examination of the type of *Hyale Pontica*.

In 1874 Professor S. I. Smith described a new amphipodous genus, *Hyalella*, from the fresh waters of the United States, differing from "*Hyale*" in having a styliform fifth segment to the palpus of the maxillipeds and an entire telson. The so-called fifth segment may perhaps be more correctly regarded as a movable spine, like those seen both lateral and terminal on the caudal stylets, or like the *unguis* which tips the dactylopodite of the thoracic legs. However this may be, it is quite as well developed in several species of "*Hyale*" (*Nicea*), and is not therefore a generic character. *Hyalella* is then a synonyme of *Allorchestes*.

* Beitr. z. Kennt. d. istrischen Amphipodenfauna, Arch. f. Natur. 1866. pp. 382, 387.

† De Skandinaviske og Arktiske Amphipoder, beskrevne af Axel Boeck. Første Hefte. 1872. I am indebted to Dr. Hagen for a translation of Boeck's Norwegian.

‡ Doubtless a large number of the species placed under *Allorchestes* by Bate in his Catalogue of the *Amphipoda* in the British Museum have in reality a divided telson. In fact, it would seem that the telson is cleft in *most* of the marine forms, and such probably formed the bulk of Dana's original genus *Allorchestes*. The only types of Dana's species that I can discover are two specimens of *A. media* in the Museum of Comparative Zoölogy. In these the telson is cleft to the base. This, however, will not affect the synonymy as given above.

§ Zur Fauna der Krym, p. 87, Pl. V. Figs. 20 - 28, 1836.

Allorchestes armatus, *sp. nov.*

Fig. 1.

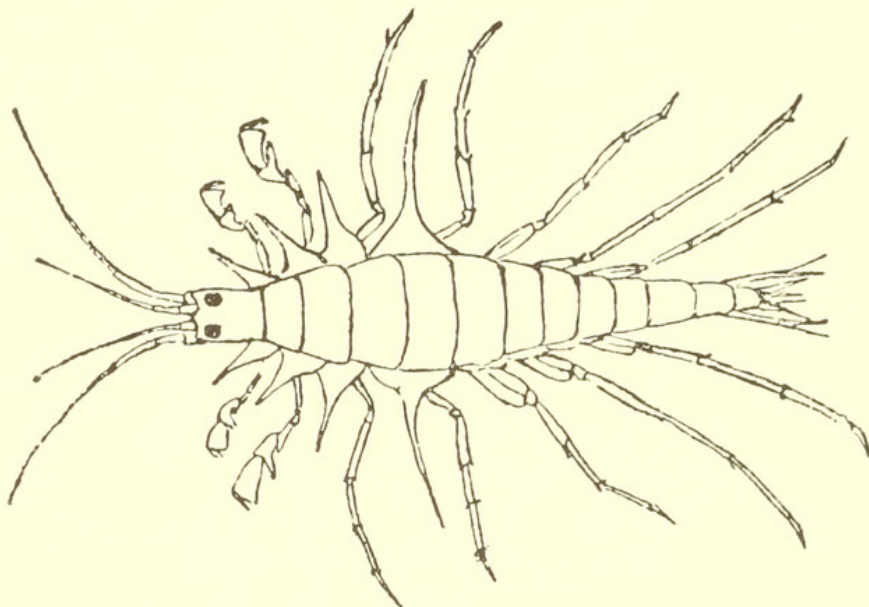


Fig. 2.

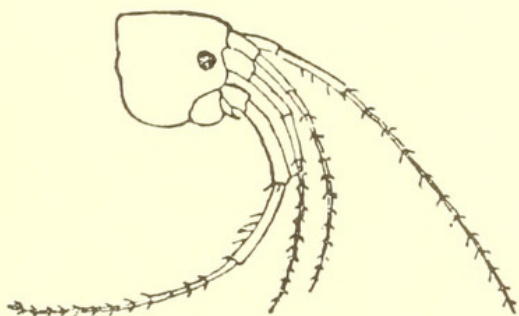


Fig. 3.



Fig. 4.

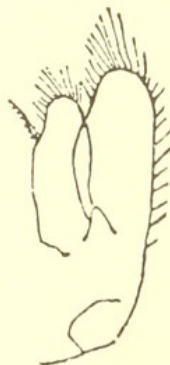


Fig. 5.



Fig. 7.



Fig. 8.



Fig. 6.

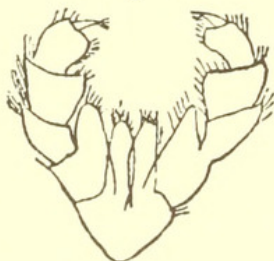


Fig. 9.



Figs. 1-9. *Allorchestes armatus*: 1. Female, dorsal view (nat. s. 9mm.). — 2. Head. — 3. 1st maxilla. — 4. 2d maxilla. — 5. Mandible. — 6. Maxilliped. — 7. Distal end of 4th segment of maxilliped bearing a movable spine. — 8. 1st thoracic leg. — 9. 2d thoracic leg of male.

Fig. 10.

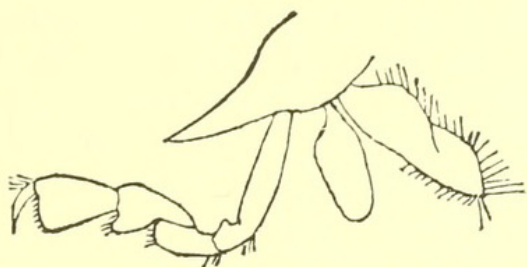


Fig. 11.

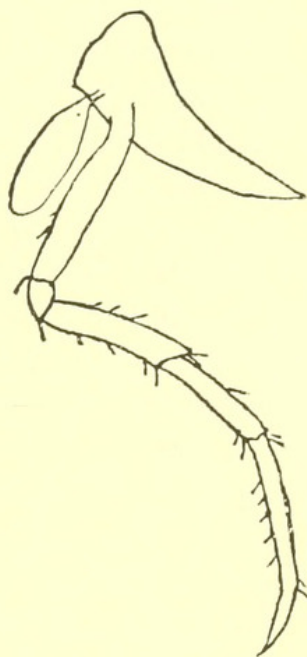


Fig. 12.



Fig. 14.



Fig. 13.

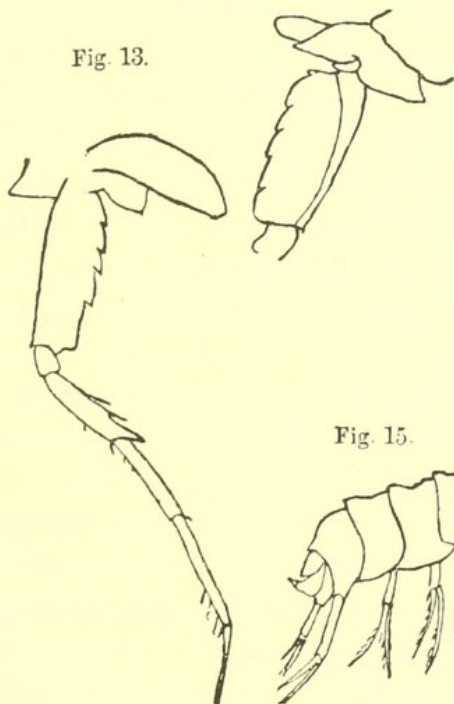


Fig. 16.

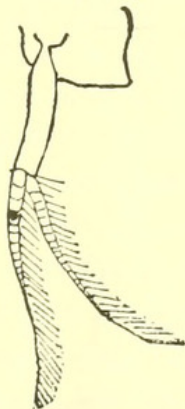


Fig. 17.



Fig. 18.

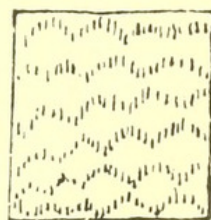
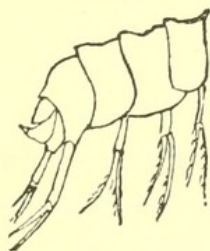


Fig. 15.



Figs. 10-18. *Allorchestes armatus*: 10. 2d thoracic leg of female, with epimeron, gill and incubatory plate. — 11. 3d thoracic leg. — 12. Section of body of female (4th thoracic segment) showing the incubatory pouch with two eggs. — 13. 5th thoracic leg. — 14. 7th thoracic leg. — 15. Abdomen, side view. — 16. 2d abdominal leg. — 17. Caudal stylets. — 18. Hairs on the integument under 625 diameters.

Body stout. Hind margin of the segments raised so as to form conspicuous transverse ridges. Fore margin of the head produced into a point

between the first antennæ, and on each side in front of the eyes. Eyes round. Epimera of the first four thoracic segments produced into prominent spines. The spines of the first and second pair are of about the same length; the third somewhat longer; the fourth longest, being about twice as long as the third, and exceeding the breadth of the broadest segment of the body. The first three pairs are directed downward and forward, while the fourth project at nearly right angles to both the longitudinal and vertical axes of the body. Telson broad, entire.

Peduncle of first antenna reaching the middle of the last segment of the peduncle of second antennæ; flagellum composed of twelve segments. Second antenna much longer than first antenna; basal segment clearly separated from the head; olfactory denticle prominent; flagellum composed of thirteen segments. Carpopodite of first pair of legs triangular, as broad as the propodite, furnished with setæ on its distal margin; palm of propodite slightly concave, transverse; dactylopodite curved. Second pair of legs in the male very large; meropodite armed with prominent setæ at the antero-inferior angle; carpopodite with a long process, setiferous at its extremity, projecting downward and forward between the propodite and the meropodite; propodite large, convex above and below, palm oblique, straight, with small setæ; dactylopodite slender, curved. In the female, the second pair of legs are smaller, the propodite similar to the corresponding segment of the first pair, and not broader than the meropodite; the palm nearly perpendicular to the straight lower margin; lower angle of the meropodite projecting under the propodite as a blunt process, much shorter than the same process in the male. Fifth pair of legs about as long as the fourth. Sixth and seventh of about equal length, much longer than the fifth; when extended backward reaching considerably beyond the end of the longest caudal stylets. Hind margin of the basipodites of the fifth, sixth, and seventh pair of legs slightly serrate. Third pair of caudal stylets very small, curved upward, so as to project but little beyond the telson.

The shell viewed under the microscope is furnished with rows of very minute hairs, arranged as in Fig. 18.

Length from front of head to end of telson, 8^{mm.} to 10^{mm.} Breadth from tip to tip of fourth pair of epimeral spines, 6^{mm.} to 10^{mm.}

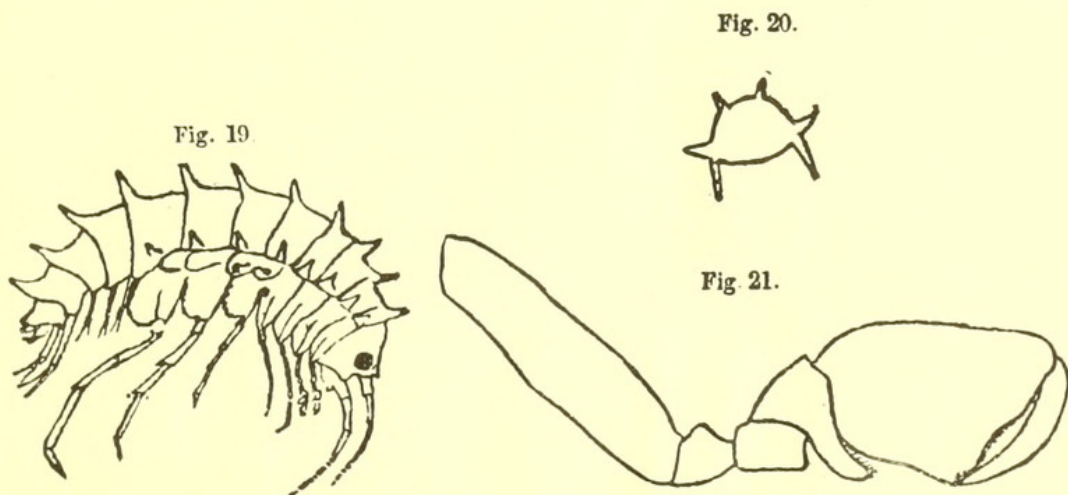
Collected at the following places in the lake:—

✓ Achacache, 11 fathoms,	countless specimens.
✓ Gulf of Puno,	88 specimens.
✓ Gulf of Desaguadero,	1 specimen.
✓ Chuquito, 40 fathoms,	4 specimens.
✓ Juli, 60 fathoms,	25 specimens.
✓ Between Taquili and Amantane, 66 fathoms,	2 specimens.

This seems to be the commonest crustacean of Lake Titicaca. The length

of the lateral spines is variable. In specimens from the deeper soundings they are much longer than in those from shallower depths. The specimens from 66 fathoms measure 10^{mm.} between the tips of the fourth pair of spines; length of a single spine, 4^{mm.}; from front of head to end of telson, 8^{mm.} Average specimens from Achacache, 11 fathoms, measure 7^{mm.} from tip to tip of fourth pair of spines; 9^{mm.} from front of head to end of telson. The former are also lighter colored and more transparent than the latter. Many of the females are with eggs under the thorax.

***Allorchestes echinus*, sp. nov.**



Figs. 19 - 21. *Allorchestes echinus*: 19. Female (nat. s. 6^{mm.}). — 20. Vertical section of body (4th thoracic segment). — 21. 2d thoracic leg of male.

Body short and very stout, with four longitudinal rows of spines. One row on each side of the median line of the back; each spine of this row arises from the hind margin of the terga of the first thoracic to the fourth abdominal segment inclusive. Another row of eight smaller spines lower down on each side of the body; these arise from the terga of the first thoracic to the first abdominal segments inclusive, near their line of junction with the epimera. Slight projection downward and forward from front margin of the head between the first antennæ; a tubercle on each side below the eyes. Eyes round, large, somewhat protuberant. Epimera of first four thoracic segments large, triangular, their apices directed downward; a ridge extends from the base down through the centre of each of these epimera to the apex. The fourth epimeron has beside the ridge a small tubercle on the hind margin. Fifth epimeron bilobed, with a tubercle on each lobe. Telson entire.

Flagellum of first antenna composed of six to eight segments. Basal joint of second antenna swollen and distinct from the head; olfactory den-

ticle prominent; flagellum composed of nine segments. Second pair of legs large in the male; inferior angle of carpopodite produced; palm of propodite concave, notched just above the lower angle and beset with setæ. In the female the carpopodite and propodite of the second pair of legs are of nearly equal size; lower angle of carpopodite produced as in the male. Sixth and seventh pair of legs very long, — one third longer than the fifth. Basipodites of fifth, sixth, and seventh legs serrate on their hind margin. Length from front of head to end of telson, 5^{mm.} to 7^{mm.}

✓ Llampopata,
✓ Juli,

10–20 fathoms, 2 ♂ 1 ♀
60 fathoms, 1 ♂

Allorchestes longipes, *sp. nov.*

Fig. 22.

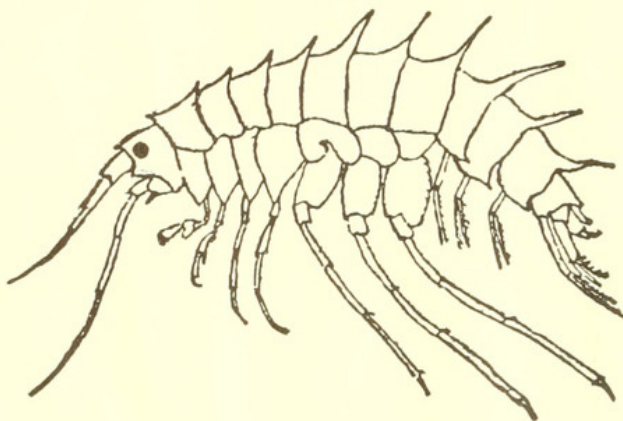


Fig. 23.

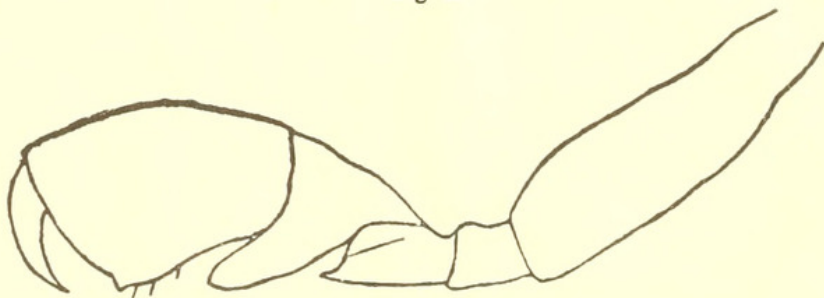


Fig. 25.

Fig. 24.



Figs. 22–25. *Allorchestes longipes*: 22. Female (nat. s. 10^{mm.}). — 23. 2d thoracic leg of male. — 24. End of abdomen, from above. — 25. Posterior dorsal margin of 4th abdominal segment of another individual.

A longitudinal row of eleven spines along the middle of the back. The first spine arises from the fore margin of the first thoracic segment; the rest from the hind margin of the first thoracic to the third abdominal segments. The first five are short, the others long, — the eighth and ninth being the longest. Eye round, protuberant. First to fourth pair of epimera long, produced into a point at their lower extremities. Infero-posterior angles

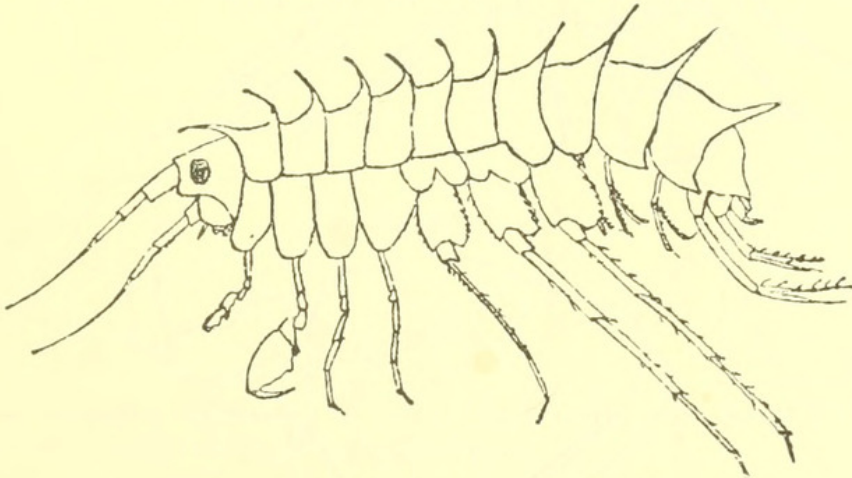
of the first three abdominal segments slightly produced. Hind margin of fourth abdominal segment in some examples has a median projection over the telson, but in others this is reduced to the bold convexity of the whole border (Figs. 24, 25). Telson entire. First antenna equal in length to the distance from the eye to the fifth dorsal spine; flagellum composed of thirteen segments. Second antenna equal to distance from the eye to the sixth dorsal spine; basal segment distinct; olfactory denticle prominent; flagellum composed of fourteen segments. Carpopodite of second pair of legs in the male produced at the lower angle; propodite not very large (but larger in the male than in the female) with a slight projection at the lower angle; a few setæ on the lower margin. Sixth and seventh pair of legs very long, about equal to the distance between the first and ninth dorsal spines. Third pair of caudal stylets very short; a few setæ on the hind margin of penultimate segment, and one very slender seta at the tip of the terminal segment. Length from front of head to end of telson, about 10^{mm}.

Achacache, 11 fathoms,	12 specimens.
Gulf of Puno,	10 specimens.
Gulf of Desaguadero,	1 specimen.
Chuquito, 40 fathoms,	1 specimen.

The specimen from Chuquito is a female with eggs. It is more transparent than the others, the first two dorsal spines longer and curved forward as in *A. lucifugax*. The epimera of the first four thoracic segments are also longer in this specimen than those obtained from other localities.

***Allorchestes lucifugax*, sp. nov.**

Fig. 26.



Allorchestes lucifugax, male (nat. s. 11mm.).

A longitudinal row of eleven spines along the median line of the back. The first spine arises from the fore margin of the first thoracic segment; the

others from the hind margin of the first thoracic to the third abdominal segments. The first spine of the series projects, almost parallel with the longitudinal line of the body, as far as the front of the head. The six following are curved forward. The last three are somewhat longer than the others. Eye oval. First four pairs of epimera long, rounded at their lower ends. Infero-posterior angles of the first three abdominal segments slightly produced.

First and second antennæ of nearly equal length. Propodite of second pair of legs of male with a slight projection at the lower end of the palmary edge; carpopodite produced below. Sixth and seventh pairs of abdominal legs very long, extending far beyond the telson. Telson entire. Length from front of head to end of telson, 11^{mm}.

Juli, 60 fathoms,

1 specimen.

Chuquito, 40 fathoms,

1 specimen.

The two specimens of this species which were taken are males. The integument is delicate and transparent, as in all the specimens dredged in deep water.

This species resembles the last, but differs from it in the longer and pro-curved anterior spines, and the shape of the four anterior pairs of epimera.

***Allorchestes latimanus*, sp. nov.**

Fig. 27.

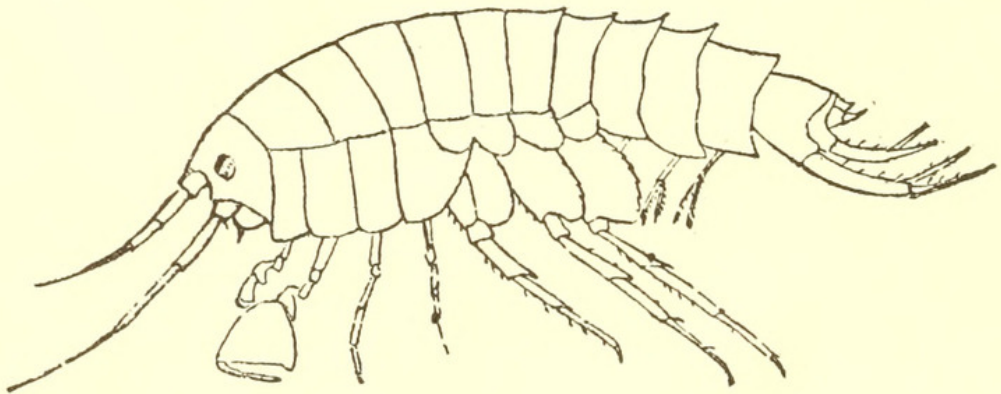


Fig. 28.

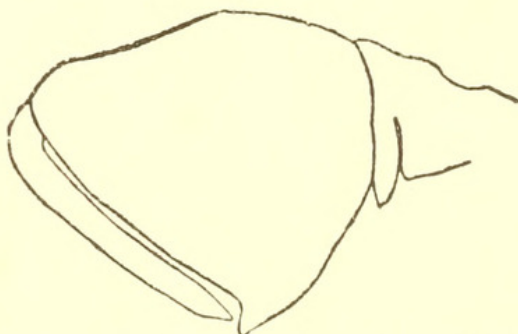


Fig. 27. *Allorchestes latimanus*, male (nat. s. 12mm.). — 28. Hand of second thoracic legs more enlarged.

Body thick. Hind margin of the sixth thoracic to the third abdominal segments inclusive produced into a spiniform tooth on the median dorsal line. Eye nearly round. Epimera of first four thoracic segments quadrilateral, their lower angles rounded. Infero-posterior angles of the first, second, and third abdominal segments prolonged backward. Peduncle of first antenna reaching the middle of the last segment of the peduncle of the second antenna; length of entire first antenna two thirds the length of second antenna. Second antenna equal to distance from front of the head to fifth thoracic segment; basal segment and olfactory denticle conspicuous. Carpopodite of second pair of legs in the male produced below; propodite broader than long, palm nearly straight, with a projection at its lower end. (In the female the propodite is small, as usual in this sex.) Seventh pair of thoracic legs of moderate length, not extending much beyond the telson when stretched backward. The last pair of caudal stylets reach a little way beyond the telson, which is broad and entire. Length, exclusive of antennæ and caudal appendages, 7mm. to 12mm.

✓ Llampopata, 10 - 20 fathoms,

11 specimens.

***Allorchestes longipalmus*, sp. nov.**

Fig. 29.

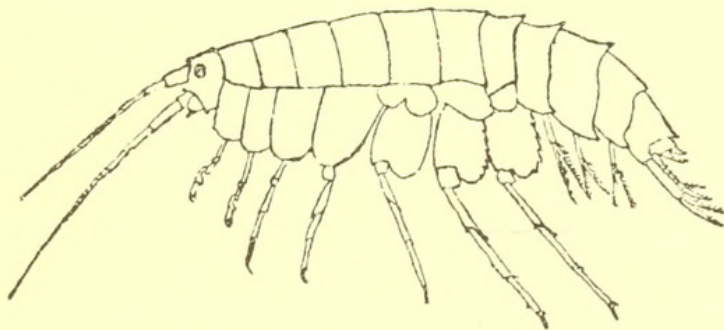


Fig. 30.

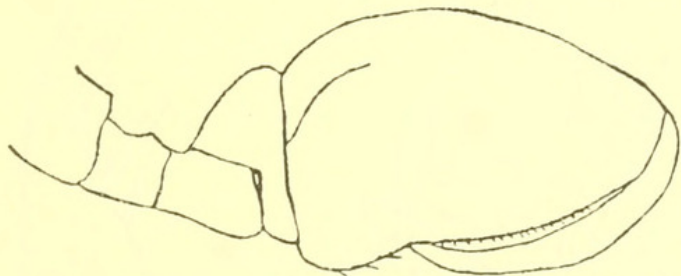


Fig. 31.



Figs. 29 - 31. *Allorchestes longipalmus*: 29. Female (nat. s. 11mm.). — 30. Part of 2d thoracic leg of male. — 31. Shell seen under a high magnifying power.

Hind margin of fifth thoracic to third abdominal segments produced into spine-shaped teeth on the median line of the back. Eye round. Epimera of the first four thoracic segments quadrilateral, their lower angles rounded. Infero-posterior angles of the first three abdominal segments produced be-

hind. Telson entire, with a seta on each side of the hind margin. Peduncle of first antenna about as long as the head and first two thoracic segments together; flagellum composed of fifteen segments. Basal joint of second antenna distinct; olfactory denticle prominent; distal segment of peduncle much longer than the antecedent segment; flagellum longer than the flagellum of first antenna, composed of fifteen segments. Propodite of second pair of legs in the male large and swollen; palmary edge sinuous and very long, encroaching upon the lower margin, armed with setæ; lower margin of propodite short; inferior angle of carpopodite produced between the meropodite and propodite. In the female, as usual in the genus, the second pair of legs are weak, the propodite not larger than the meropodite, the palm making nearly a right angle with the lower margin. Seventh abdominal legs, when extended backward, reach the end of the caudal stylets. The shell, seen under a high magnifying power, is furnished with small scattered hairs, with here and there one of those cross-shaped figures seen in the integument of so many of the *Orchestidæ*. Length of body 9mm. to 13mm. About two dozen individuals of this species were taken in the lake; the exact locality is not preserved, nor the depth of water. It is closely related to the preceding species, but may be easily distinguished from it by the hand of the second pair of legs.

***Allorchestes cupreus*, sp. nov.**

Fig. 32.

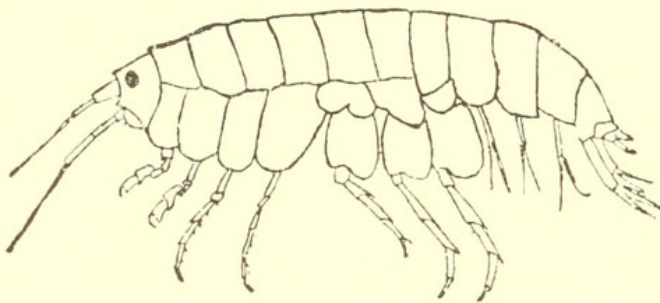
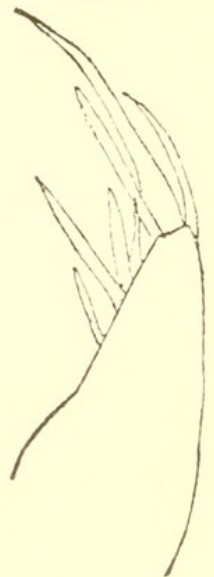


Fig. 33.



Fig. 34.



Figs. 32-34. *Allorchestes cupreus*: 32. Female (nat. s. 10mm.). — 33. 2d thoracic leg of male. — 34. Terminal segment of palpus of maxilliped.

Body smooth, without dorsal spines or teeth. Eyes nearly round. Epimera of first four thoracic segments quadrilateral, lower angles rounded. Infero-posterior angles of first three abdominal segments hardly produced backward. Telson entire.

About ten segments in flagellum of first antennæ. Second antenna considerably longer than first antenna, equal to about a third the distance from forehead to the end of the abdominal stylets. Carpopodite of second pair of legs produced downward between the meropodite and propodite; propodite swollen; palm convex, setiferous, with a prominence at its base, against which the tip of the dactylopodite closes; dactylopodite curved, closing against the palm throughout its whole length. Fifth, sixth, and seventh thoracic legs short, with large basipodites lightly serrate on their hind border. Fifth pair much shorter than the sixth and seventh, which are of about equal length. The seventh pair, when stretched backward, reach to the end of the telson. Many parts of the body display a coppery lustre.

In the female, the propodite of the second pair is long and narrow, not broader than the carpopodite; the carpopodite has but a short blunt process at its lower angle in place of the long projection in the male. Length of body, 9mm. to 11mm. About twenty-four specimens, particular locality not preserved.

This is a stout species, resembling the last described, but differing in the shape of the propodite of second thoracic legs, want of dorsal teeth, etc.

***Allorchestes dentatus*, var. *inermis*.**

Hyalella dentata, Smith, Rep. U. S. Fish Comm. for 1872 and 1873, p. 647, 1874.

Hyalella inermis, Smith, Rep. U. S. Geogr. Geolog. Survey of Colorado for 1873, p. 609, 1874.

Fig. 35.



Allorchestes dentatus, var. *inermis*, male (nat. s. 5mm.).

Six specimens were taken from the shallow water of the "Marjal," a marshy tract on the western side of the lake, overflowed during a part of the year.

They differ from specimens from the United States in having a firmer and less transparent shell, and a little differently shaped propodite to the second pair of thoracic legs in the male; hardly enough to warrant the establishment of a new species when one considers the variability of the species within the limits of the United States.

After an examination of a large number of *Hyalella dentata* and *H. inermis* from Utah, I am satisfied that they are but varieties of one species. The form with dorsal teeth on the first and second abdominal segments is very probably synonymous with *Amphitoe aztecus* Saussure* and *Allorchestes Knickerbockeri* Bate,† as pointed out by Professor Smith himself.

This species (var. *inermis*) was also collected by Mr. Agassiz at San Antonio, Peru, in saline water, 3,300 feet above the sea; nitrate district of Pisagua. The specimens differ slightly from the type described from the United States in having the fifth pair of thoracic legs a little shorter in proportion to the sixth pair.

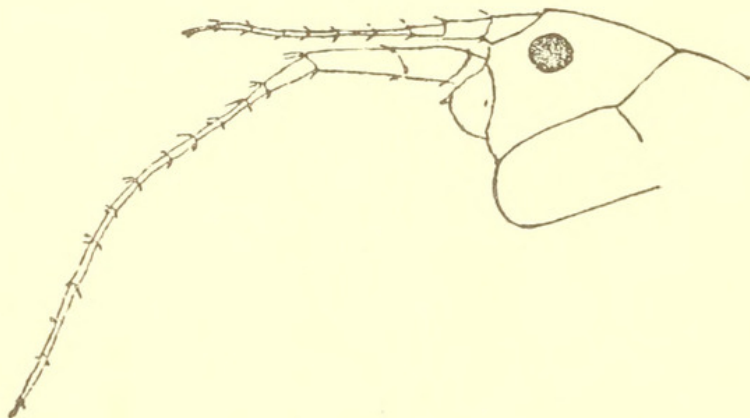
It may be well to announce here the discovery of this species during the voyage of the "Hassler" at Puerto Bueno, Smyth Channel, Straits of Magellan. The specimens do not differ from var. *inermis* from the United States. The ticket accompanying the specimens does not indicate their fresh-water origin; but Count Pourtalès tells me that some animals were collected at Puerto Bueno by Dr. Steindachner and himself in a fresh-water pond and an outlet stream. The *Allorchestes* were probably among them.‡

* Mémoire sur divers Crustacés nouveaux du Mexique et des Antilles, p. 58, Pl. V. Fig. 33, 1858.

† Catalogue of the Specimens of Amphipodous Crustacea in the Collection of the British Museum, p. 36, Pl. VI. Fig. 1, 1862.

‡ Among the Crustacea collected by the Thayer Expedition in Brazil are two species of *Allorchestes*. One is represented by a unique female specimen taken from a canal

Fig. 36.



Allorchestes dentatus, var. *gracilicornis*, head.

at Campos by C. F. Hartt. It differs from *A. dentatus*, var. *inermis*, only in the second pair of antennæ, which are half as long as the body and twice as long as the first pair;

ORDER OSTRACODA.

FAMILY CYPRIDIDÆ.

GENUS CYPRIS.

Cypris Donnetii?

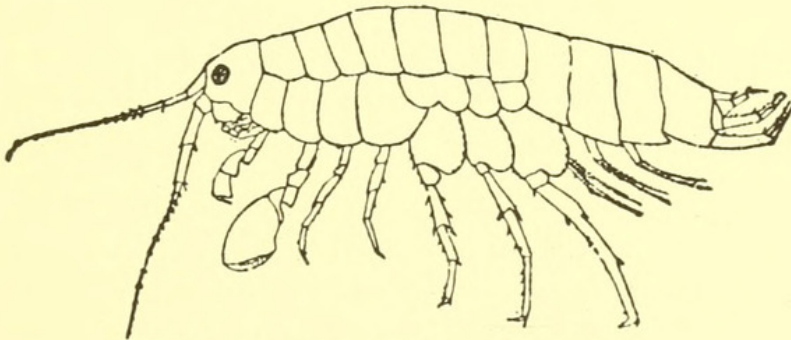
? *Cypris Donnetii*, Baird, Proc. Zoölog. Soc. London, Pt. XVIII. p. 254, 1850.

A great many specimens of *Cypris* were collected by Mr. Garman among the plants growing in the shallow water of the "Marjal." They answer to Baird's description of *C. Donnetii* from fresh-water ponds, Coquimbo.

flagellum composed of thirteen segments. Length of body, 4mm. In the absence of more specimens, I would consider this a variety (*gracilicornis*) of *Allorchestes dentatus*.

The second species is represented by several specimens. It may be called *Allorchestes longistilus*, *sp. nov.* Body smooth, long, and slender. Eyes nearly round. Epimera of

Fig. 37.



Allorchestes longistilus, male (nat. s. 6mm.).

first four thoracic segments quadrilateral. Infero-posterior angles of first three abdominal segments produced. Telson entire, with two long setæ on the hind margin. First antenna nearly as long as the second; flagellum composed of thirteen segments. Carpopodite of second thoracic legs produced below; propodite large, broadest at distal end; palm oblique, with large setæ and a projection at the lower angle. Fifth, sixth, and seventh thoracic legs subequal, the seventh, when extended backward, reaching a short distance beyond the end of the telson. Last pair of caudal stylets very long, extending far beyond the tip of the telson, almost to the end of the second pair of stylets. The female has shorter antennæ and small, long, and narrow propodite to second pair of legs. Length of body, 3mm. to 6mm. Swamp three miles south of Campos. Hartt. Differs from *A. dentatus*, var. *inermis*, in its slenderer body, longer antennæ, and especially in the length of the third pair of caudal stylets.



Agassiz, Alexander, Garman, Samuel, and Faxon, Walter. 1876. "Exploration of Lake Titicaca, IV. Crustacea." *Bulletin of the Museum of Comparative Zoology at Harvard College* 3(16), 361–375.

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