

figure, clinging to the weed with the three pairs of ambulatory legs. The specific name alludes to the pugnacious appearance of the animal.

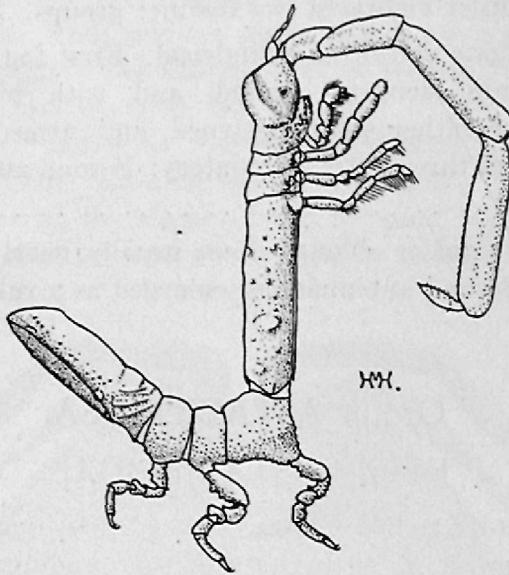


FIG. 312.—*Parastacilla truculenta* (x 4).

Spined Skeleton-louse. *Parastacilla bakeri* (Hale). (personal name).

The illustration shows the essential differences between this and the preceding species. The large second antennae are of different shape, and bear raised bosses furnished with sensory hairs. The third thoracic segment and the long fourth segment each bear a large, blunt, spine-like process; the

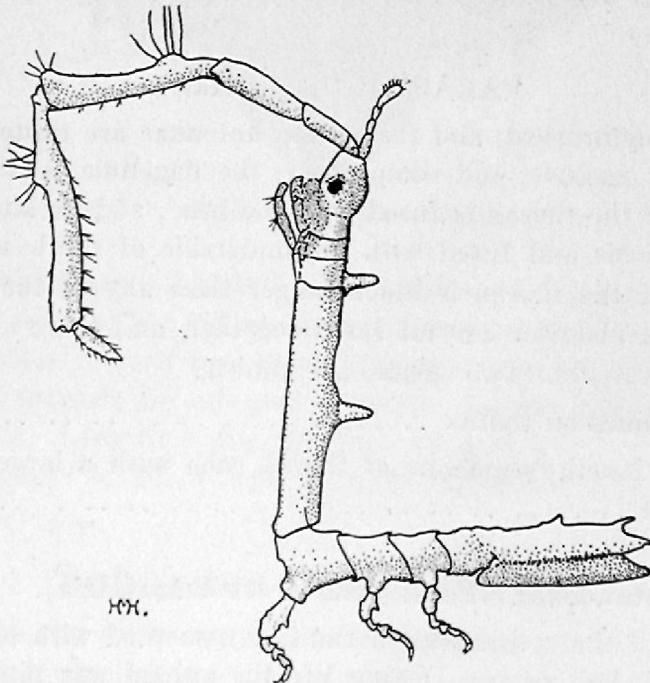


FIG. 313.—*Parastacilla bakeri* (x 9).

abdomen is armed with a conical projection just behind the middle of its length, and with a backwardly produced spine on each side near the terminal end. Length: 9.5 mm., or $\frac{3}{8}$ in. (S.A.M.)

NEASTACILLA (Tattersall).

Easily separated from *Parastacilla* by the characters mentioned in the key. Two species occur:

- a. With a tubercle on upper surface of head *algensis*.
 aa. Without tubercle on upper surface of head *deducta*.

Capped Skeleton-louse. *Neastacilla algensis* (Hale). (living in weed).

An attenuated species, with the fourth free thoracic segment very long and slender. The head is elongate, and bears a prominent, conical tubercle between the eyes. The second antennae are subcylindrical, and scarcely compressed. The animal lives in green weed (*Cymodocea antarctica*) in St. Vincent Gulf, and during life is green in color, marked with tiny brown dots, and with brown markings on the uropods. Length: 12.25 mm., or $\frac{1}{2}$ in. (S.A.M.)

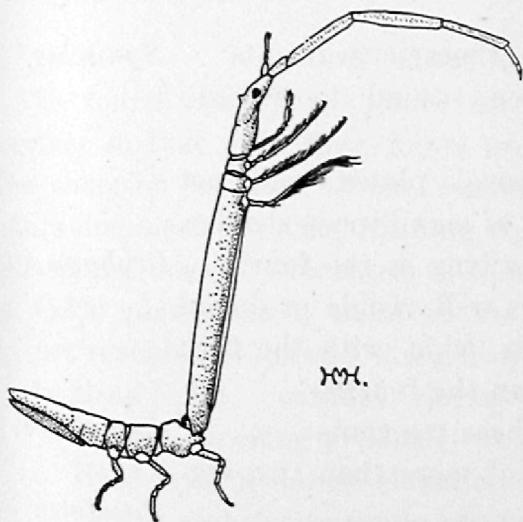


FIG. 314.—*Neastacilla algensis* x 5.

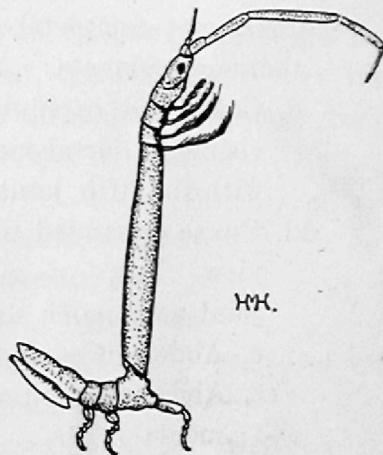


FIG. 315.—*Neastacilla deducta* (x 5).

Smooth Skeleton-louse. *Neastacilla deducta* (Hale). (drawn out).

Very like the foregoing species, but has no tubercle on the head. The joints of the second antennae are of different proportions, and the walking legs are a little stouter. This species, which was taken from a buoy in the Port River, was green in colour during life. Length: 12 mm., or $\frac{1}{2}$ in. (S.A.M.)

Group **IDOTEINEA.**Family **IDOTEIDAE.** (Sea-centipedes.)

The fusing together of parts is a common feature in this family. For instance the number of joints in the palp of the maxillipeds varies in the different species, two or more segments being sometimes coalesced, thus reducing the number to less than the normal five. Then, the head may be fused with the normally first free thoracic segment, or the coxal plates of the second to seventh thoracic segments may be coalesced with their segments. Again, the number of segments in the abdomen is very often

reduced owing to fusion. These characters are largely used in the following key to the genera represented in South Australia. To determine with certainty the number of joints present in the palp of the maxilliped, it is usually necessary to remove the appendage, an operation which is easily accomplished with a pair of needle-pointed forceps. Our species, however, are so readily separated by other well-marked external characters that identification without dissection is not at all difficult. It is hardly necessary to state that the popular name for the Idoteids—"Sea centipedes"—does not imply that the crustaceans are in any way directly connected with the true centipedes, but was bestowed merely because of a fancied resemblance.

- a. Palp of maxillipeds four-jointed *Euidotea*.
- aa. Palp of maxillipeds five-jointed.
 - b. Flagellum of second antennae well developed, with many joints.
 - c. Coxae completely fused with thoracic segments . . *Synischia*.
 - cc. Coxae not completely fused on second to seventh thoracic segments.
 - d. Coxae not expanded as coxal plates, and not visible in dorsal view. Palp of maxillipeds slender, with the fifth joint about as long as the fourth. . *Crabyzos*.
 - dd. Coxae expanded into plates well visible in dorsal view. Palp of maxillipeds wide, with the fifth joint very much shorter than the fourth.
 - e. Abdomen composed of three segments *Pentidotea*.
 - ee. Abdomen composed of not more than two segments *Paridotea*.
 - bb. Flagellum of second antennae very short, composed of only one to three joints *Zenobiana*.

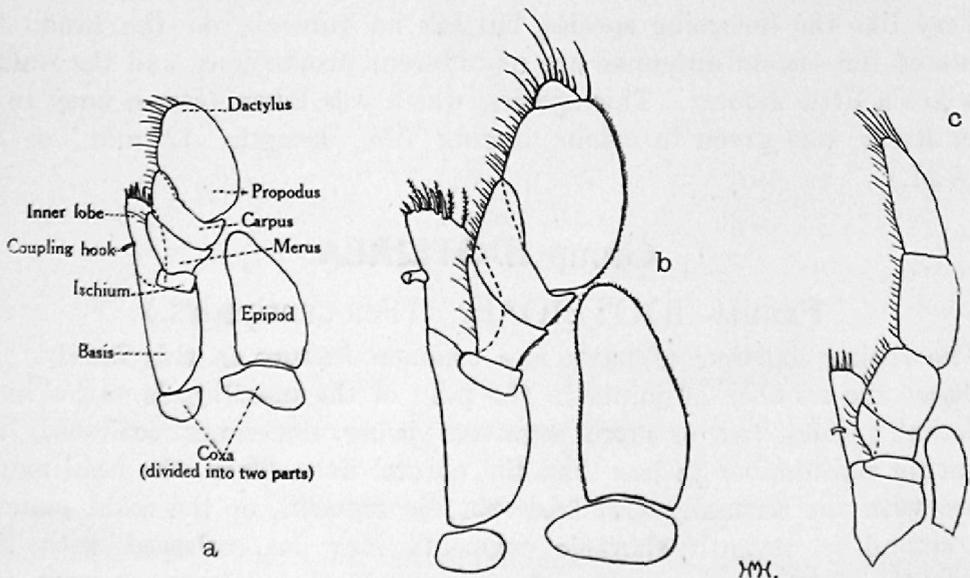


FIG. 316.—Maxilliped of (a) *Euidotea peronii*, (b) *Synischia levidensis* and (c) *Crabyzos longicaudatus* (x 16-40).

The basal joint, or coxa, of each maxilliped is divided into two parts (fig. 316, a); above the outer portion of the coxa is a large plate, the epipod. The basis joint is large and is expanded on the inner side to form an inner lobe which carries one or more coupling-hooks which link together the pair of maxillipeds; the apex of this lobe usually bears spines and stiff hairs. The remaining five joints form the palp. As mentioned above, all the articulations of the palp may not be apparent owing to fusion, and in *Euidotea* the two terminal joints (propodus and dactylus) are coalesced, reducing the number of palp segments to four. In all our other genera the palp is five-jointed, and, excepting in *Crabyzos*, similar to that shown in fig. 316, b; as indicated in the above key to the genera, the maxilliped of *Crabyzos* is slender, with the dactylus as long as the preceding joint (fig. 316, c).

EUIDOTEA (Collinge).

The fourth and fifth joints of the palp of the maxillipeds are fused together so that only four joints are apparent, the last being very large. The abdomen consists of one segment only, although there may be one suture line, near the base, running right across the abdomen.

Our species may be separated as follows:—

- a. Coxal plates small, those of the last thoracic segment not reaching to hinder margin of their segment.
- b. Head flat, without dorsal elevation. Abdomen narrow, tapering gradually to an acute apex *caeruleotincta*.
- co. Head with a dorsal elevation. Abdomen not very narrow and not tapering gradually to apex *stricta*.
- aa. Coxal plates large, those of the last thoracic segment reaching back behind the hinder margin of their segment.
 - c. Head without dorsal elevation; thorax not longitudinally ridged *peronii*.
 - cc. Head with a dorsal elevation. Thorax longitudinally ridged *bakeri*.

Blue-spotted Sea-centipede. *Euidotea caeruleotincta* (Hale).

(spotted with blue).

The body is slender and much depressed; its surface is slightly rough and is dull, not shining. The thorax has a median ridge and each segment is rather angular; the coxal plates are distinctly separated on the second to seventh segments, but are all very small. The abdomen is narrow and flat, tapers to an acute apex, and has a low median ridge. Length: 23.5 mm., or $1\frac{5}{16}$ in. (S.A.M.)

The flat body and the elongate, pointed abdomen lends this species some resemblance to *Crabyzos longicaudatus*—the Green Sea-centipede of St. Vincent Gulf and Kangaroo Island. The animal is variable in colour, being bright green, yellow, or rich purplish-brown. Some examples when

alive were beautifully mottled with the last-named colour, the dorsum of the abdomen had four irregular pale bars across the surface and the second antennae were broadly banded with purplish-brown. In one respect, however, all specimens agree; there is an iridescent blue spot at the middle of the hinder part of each thoracic segment, and one at the first third of the abdomen.

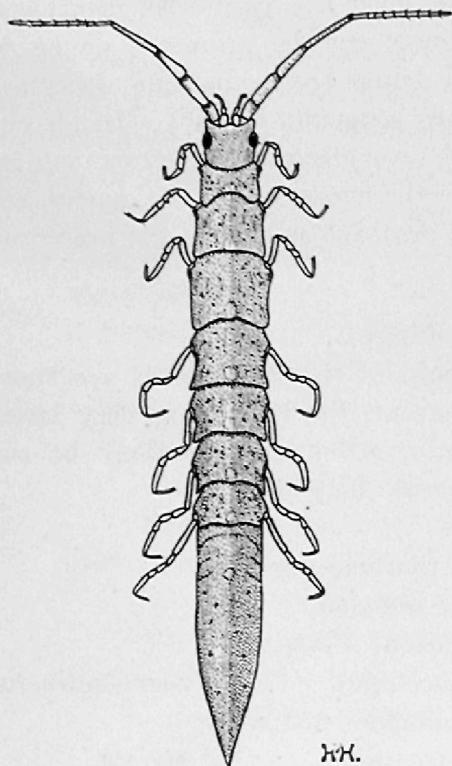


FIG. 317.—*Euidotea caeruleotincta* (x 3).

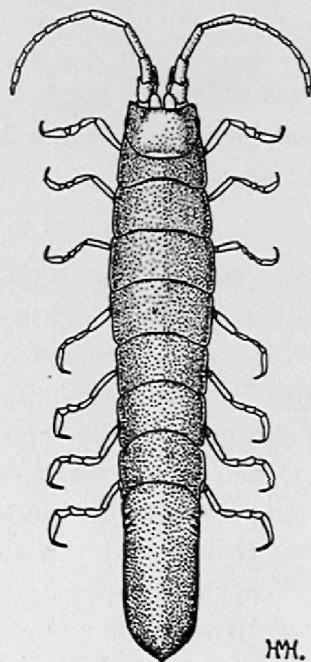


FIG. 318.—*Euidotea stricta* (x 4).

The Blue-spotted Sea-centipede lives on the broad, strap-shaped weed (*Posidonia australis* var.) growing in shallow water near the north shore of Kangaroo Island. Its flat form enables it to cling closely adpressed to the leaves of this plant; the Green Sea-centipede occurs in the same situation.

Euidotea stricta (Dana). (brief).

A species allied to the Common Sea-centipede but easily recognised by the short coxal plates and the presence of a dorsal elevation on the head. Also, the flagellum of the second antennae is composed of a lesser number of joints and the abdomen has three pairs of short lateral sutures near the base, none running across from side to side. Length: 22 mm., or $\frac{3}{4}$ in. (S.A.M.)

Apparently somewhat rare in our waters.

Common Sea-centipede. *Euidotea peronii* (M. Edwards). (personal name).

Somewhat closely resembles the Ridged Sea-centipede, but is usually more slender; it is readily separated by the apically angulate posterior coxal plates, the absence of a ridge on the thorax and abdomen, the smoother

and flatter head, the more slender second antennae, and the usually relatively narrower abdomen. A suture line runs right across the base of the abdomen and there are two pairs of short lateral sutures. Length: 44 mm., or 1 $\frac{3}{4}$ in. (S.A.M.)

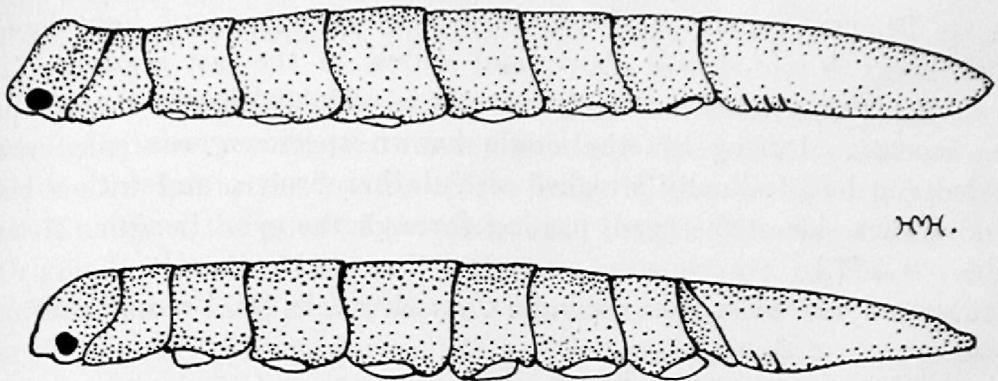


FIG. 319.—Side views of *Euidotea stricta* (upper fig.) and *E. peronii* (x 7).

An exceedingly common species, and, like the following form (in the company of which it is often taken), is extremely variable in colour.

Ridged Sea-centipede. *Euidotea bakeri* (Collinge). (personal name).

There is a large elevation on the dorsal surface of the head, and the second antennae are thick. Each of the thoracic segments is strongly ridged medianly, and has an oblique elevation, overhanging a depression on each

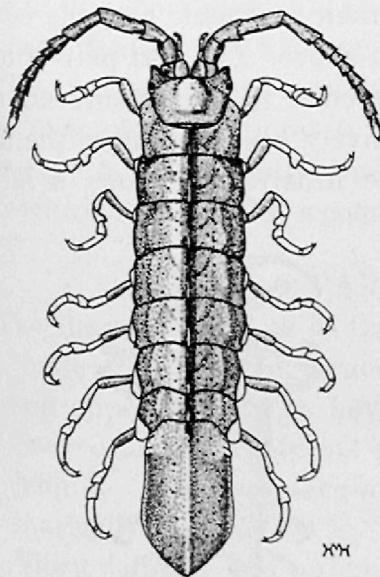


FIG. 320.—*Euidotea bakeri* (x 5).

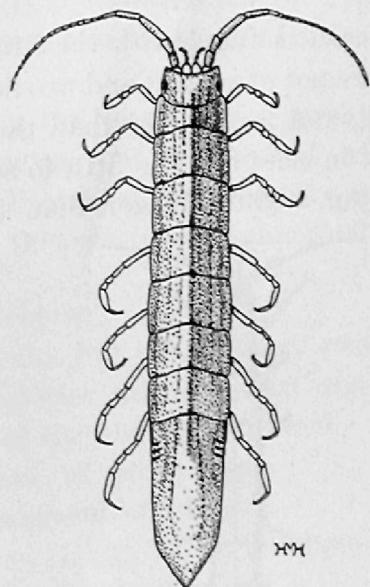


FIG. 321.—*Synischia levidensis* (x 3).

side. The last pair of coxal plates are rounded posteriorly. The abdomen is wide, longitudinally ridged, and is marked with three pairs of short lateral sutures near the base. The colour is very variable, ranging from black to pink, more or less spotted, and marked with brown. Length: 21 mm., or $\frac{3}{4}$ in. (S.A.M.)

The species has been taken in Victoria as well as in South Australia.

SYNISCHIA (Hale).

The palp of the maxilliped is composed of five segments, the last of which is very much smaller than the fourth. The abdomen consists of a single segment, with three pairs of short lateral sutures near the base. The coxal plates are all perfectly fused with their segments.

Delicate Sea-centipede. *Synischia levidensis* (Hale). (of light build).

The thorax is roof-shaped above, and widest at the last segment. The legs are not strong, and successively increase in size backwards, the first pair being shortest. During life the single known specimen was pale brown, speckled and longitudinally streaked with darker brown, and with a black streak on each side of the head, passing through the eye. Length: 21 mm., or $\frac{3}{4}$ in. (S.A.M.)

The species was taken from amongst *Cymodocea*, in St. Vincent Gulf.

CRABYZOS (Spence Bate).

There are five joints in the palp of the maxillipeds, the fifth being as long as the fourth. The abdomen consists of a single segment, with faint lateral sutures. In at least the male the form is very elongate. Two species have been recorded:

- a. Abdomen sharply pointed at apex *longicaudatus*.
- aa. Abdomen incised at apex *elongatus*.

Green Sea-centipede. *Crabyzos longicaudatus* (Spence Bate).
(long-tailed).

The head is fused with the first "free" thoracic segment, and the coxal plates are not expanded and are not visible from above. The first pair of legs are long, and are stouter than the others; the second to fourth successively decrease in size; and the fifth to seventh successively become longer, the last pair being slightly longer than the first. The illustration shows a large

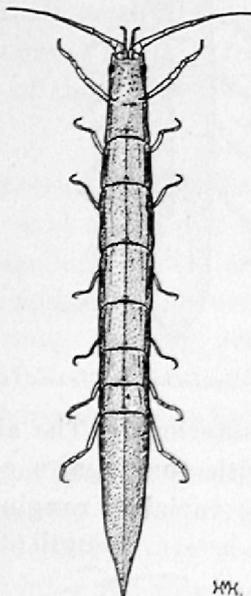


FIG. 322.—*Crabyzos longicaudatus* (x 14).

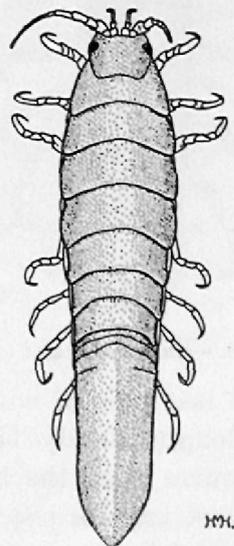


FIG. 323.—*Pentidotea australis* (x 14)

ovigerous female; in smaller examples the thorax is relatively narrower, and the abdomen is even more acuminate. Length: 50 mm., or 2in. (S.A.M.)

This crustacean is invariably brought to light when the dredge is dragged through the sea-grasses of our gulf. The animal is bright graminaceous in colour (rarely banded with brown), and admirably matches the weed on which it dwells. The species has been taken in South Australia and Victoria.

Brown Sea-centipede. *Crabyzos elongatus* (Miers). (elongate).

The male is very elongate in form, but the ovigerous female becomes considerably dilated at the middle of the body. There is a rounded, rather shallow notch at the apex of the abdomen. Length: 50 mm., or 2in.

Originally described from New Zealand, this species has been recently recorded from South Australia, but is seldom met with here. It is stated that the animal is brown during life, and is found only on brown seaweeds.

PENTIDOTEA (Richardson).

The maxillipeds are much as in the preceding genus. The coxal plates, however, are quite free and distinct on the second to seventh thoracic segments, and the abdomen consists of three separate segments.

Deep-bodied Sea-centipede. *Pentidotea australis* (Hale). (southern).

A narrow and elongate species, with the dorsal surface very convex in transverse section, so that the coxal plates are scarcely visible from above. The abdomen is as long as the first six thoracic segments together, and consists of two short segments and one long segment, with a pair of short lateral sutures. Length: 51 mm., or 2in. (S.A.M.)

The type specimen, a male, was taken on the coast of Kangaroo Island. This example unfortunately has the greater part of the second antennae missing. A second individual, the female illustrated, was recently collected in Victoria; one of the second antennae of this specimen is abnormal.

PARIDOTEA (Stebbing).

The characters are as in the foregoing genus, but the abdomen consists of not more than two segments. Our two species are somewhat similar in general appearance, both having the apex of the abdomen notched.

- a. Second and third joints of first antennae of about same length. Anterior margin of terminal segment of uropods markedly oblique *munda*.
- aa. Third joint of first antennae distinctly longer than second. Anterior margin of terminal segment of uropods not, or scarcely oblique *ungulata*.

Little Sea-centipede. *Paridotea munda* (Hale). (neat or elegant).

The surface of the body is smooth, and dull when dry, not shining, as in most other sea-centipedes. The inner lobe of the first maxilla bears only three setiferous spines. The abdomen consists of a single segment, with a

very faint complete suture line near the base, followed by two pairs of short and indistinct lateral sutures. The apex of the abdomen is evenly, concavely incised, with the lateral angles rounded, not produced into points, as in the following species. Length: 22 mm., or $\frac{7}{8}$ in. (S.A.M.)

This species is common near the Gull Rock at Port Willunga, where it lives amongst an olivaceous alga, and is of precisely the same colour as the vegetation to which it clings. The majority of the large series of specimens so far collected were of this olivaceous colour, but a few were pinkish-brown, with a pale, elongate spot, outlined in black, at each side of the segments of the thorax. When swimming, the animal carries the first three legs directed forwards, and the last four pairs backwards. The legs do

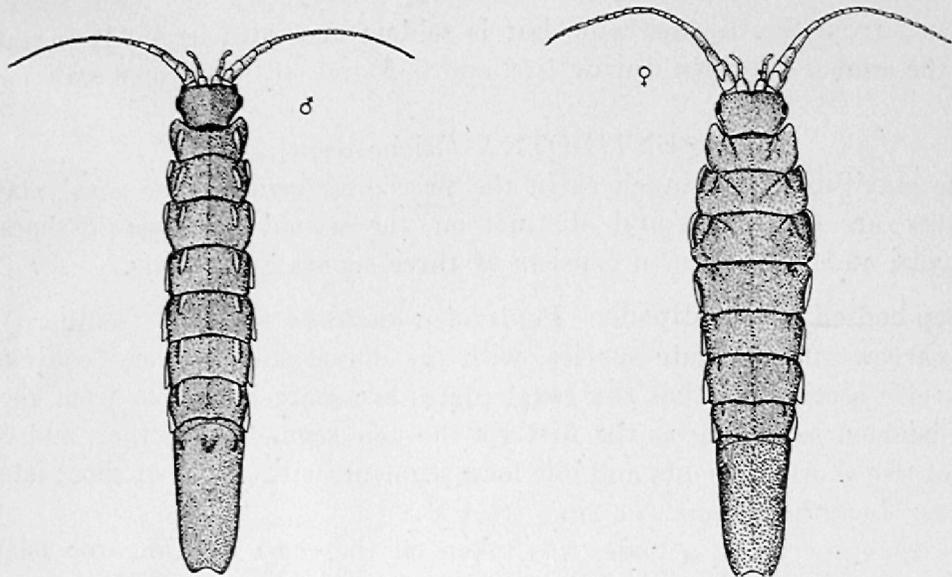


FIG. 324.—*Paridotea munda*, male and female ($\times 3\frac{1}{2}$).

not assist in swimming at all; the uropods are opened downwards, and do not move, but swimming is accomplished solely by rapid movements of the pleopods. Immediately the last-named cease their rapid vibrations, the uropods close and the creature sinks, with legs extended outwards in readiness to clasp the weed over which it swims.

The Little Sea-centipede has been found in South Australia, Victoria, New South Wales, and Tasmania.

Sharp-tailed Sea-centipede. *Paridotea unguolata* (Pallas). (clawed).

The inner lobe of the first maxilla bears four setiferous spines. A suture line runs across the base of the abdomen and is followed by two pairs of short lateral sutures; the apical notch of the abdomen is broadly angulate or sinuate, with acute postero-lateral angles. Females with eggs are often much wider at the middle of the body than are males and non-ovigerous females. Length: 44 mm., or $1\frac{3}{4}$ in. (S.A.M.)

The popular name refers to the two sharp points at each side of the apex of the abdomen. The coxal plates, viewed from the side, are of