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Pycnogonids from Hawaii

By WILLIAM A. HILTON

DEPARTMENT OF ZOOLOGY, POMONA COLLEGE, CALIFORNIA

The forms mentioned in this paper were sent me from Bernice P. Bishop Museum by Dr. C. H. Edmondson for identification. A number of new species and one new genus are described. One species, *Ammothella bi-unquiculata*, seems to be nearly the same as described from the Bay of Naples many years ago. It was later found at Laguna Beach by H. V. N. Hall and I have found it to be quite abundant both along California shores and farther south in the littoral of Lower California.

Unless otherwise stated, all specimens including types described in this paper were collected by Dr. Edmondson, and are deposited with Bishop Museum.

Oropallene (Pallene) ovigerosetosus, new species (fig. 1).

Color: light brown. *Body*: rather elongate; suture lines rather obscure; transverse processes shorter than width of body, moderately separated; few or no hairs on body. *Ocular segment*: longer than the rest of the body, rather broad in front; ocular tubercle, a low broad mound, no eyes evident. *Proboscis*: short cylindrical, rounded in front, about as wide as long. *Abdomen*: short. *Chelifori*: 2-jointed; first cylindrical smaller than second which bear heavy jaws in front of the mouth; a few hairs on this appendage. *Ovigeræ*: evidently 10-jointed, the terminal joint is rather blunt. There are low teeth on the under sides of the last two joints. The last joint terminates with a tooth and very irregular spine-like processes. *Legs*: moderately heavy, the second coxal longer than the others; the femur broad and about as long as the second tibial, the first tibial shorter; very few hairs on any joints; first tarsal small, second shorter than the second tibial, broad and not arched; terminal claw nearly half as long as the second tarsal; the paired claws are more than half as long as the terminal. The dorsal side of the second coxal bears a few fine, quite long hairs. The ventral side bears three well separated, quite large spines and four or more slender spines or teeth farther along.

Measurements. Base of the chelifori to the first legs, 2 mm. Total length with proboscis, 1.05 mm. Proboscis, 0.25 mm. by 4.5 mm. Abdomen, 0.075 mm. by 0.075 mm. Width of body between processes, 0.2 mm. Length of transverse processes, 0.1 mm. Total width, 0.4 mm. Eye elevation, 0.1 mm. high by 0.15 mm. broad. Chelifori, 1st joint, 0.185 mm. by 0.125 mm.; 2d joint, 0.3 mm. by 0.2 mm. Jaws, 0.15 mm. Ovigera, 1st joint, 0.04 mm.; 2d, 0.08 mm.; 3d, 0.12 mm.; 4th, 0.12 mm.; 5th, 0.2 mm.; 6th, 0.12 mm.; 7th, 0.1 mm.; 8th, 0.8 mm.; 9th, 0.4 mm.; 10th, 0.1 mm. Legs, 1st joint, 0.15 mm. by 0.12 mm.; 2d, 0.2 mm. by 0.12 mm.; 3d, 0.15 mm. by 0.12 mm.; 4th, 0.6 mm. by 0.15 mm.; 5th, 0.55 mm. by 0.15 mm.; 6th, 0.45 mm. by 0.15 mm.; 7th, 0.075 mm. by 0.075 mm.; 8th, 0.35 mm. by 0.130 mm. Large claw, 0.15 mm. by 0.05 mm. Paired claws, 0.1 mm. Total extent of body, 5.5 mm.

The type is a female.

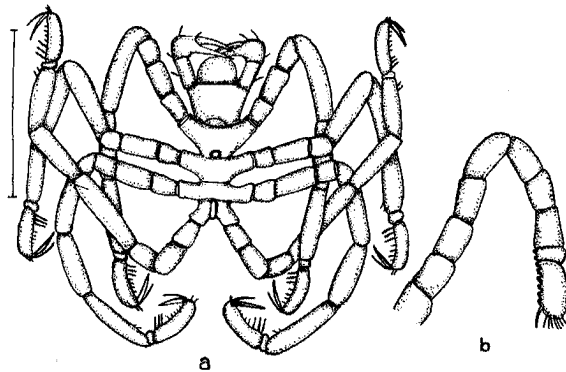


FIGURE 1.—*Oropallene ovigerosetosus*, new species, a, adult, dorsal view, line at left 1 mm.; b, oviger, higher magnification.

***Anoplodactylus intermedius*, new species (fig. 2).**

Color: dark brown. *Body*: smooth, with few hairs; rather heavily chitinized; segmentation lines showing; transverse process except the first anteriorly, well separated about as long as the body between. *Ocular segment*: broad in front, as long as the next two segments; overlapping the base of the proboscis. *Ocular tubercle*: broad, fleshy in the overlapping process of the segment; eyes not clearly seen in any of the specimens, but some evidences of them. *Proboscis*: slender, conical, pointed, arising well under the ocular segment, much broader at the base than at the very narrow tip. *Abdomen*: rather small, mound-like, not extending beyond the last transverse process when flattened out. *Chelifori*: 2-jointed; the first cylindrical arising rather far forward under the ocular segment; the first joint longer than the second and ending beyond the forward end of the ocular segment; second joint a little shorter and narrower, ending in the jaws extending beyond the end of the proboscis; with a few hairs in and around the rather thick jaws. *Ovigera*: 6-jointed; third the longest, sixth the smallest, conical; a few hairs on the third joint and on the fourth, but mostly rather free from hairs. *Legs*: rather short and heavy; second coxal the longest;

femur and first tibial nearly the same length, both rather heavy; second tibial shorter; first tarsal small, few lines vertically; second tarsal quite large, ending in a large heavy claw, ventral proximal region or heel bearing a very long spur or spine and a few slender hairs; beyond this about 6 small bent spines; a few hairs dorsally.

Measurements. Length of body, 0.6 mm. Ocular segment, 0.2 mm. Other segments, 0.1 mm. From the second line to the tip of the body, 0.2 mm. Proboscis, 0.35 mm. by 0.15 mm. to 0.05 mm. at tip. Total length, 0.95 mm. (body, 0.6 mm., plus proboscis, 0.35 mm.). Width, 0.32 mm. Transverse processes, 0.1 mm. Chelifori, 1st joint, 0.1 mm.; 2d, 0.075 mm. Legs, 1st joint, 0.15 mm. by 0.12 mm.; 2d, 0.12 mm. by 0.12 mm.; 3d, 0.1 mm. by 0.12 mm.; 4th, 0.45 mm. by 0.2 mm.; 5th, 0.3 mm. by 0.15 mm.; 6th, 0.20 mm. by 0.1 mm.; 7th, 0.075 mm. by 0.75 mm.; 8th, 0.3 mm. by 0.2 mm. Claw, 0.2 mm. by 0.05 mm. Total extent of body and legs, 4.13 mm. Ovipiger of another specimen, 1st joint, 0.2 mm.; 2d, 0.1 mm.; 3d, 0.25 mm.; 4th, 0.15 mm.; 5th, 0.2 mm.; 6th, 0.05 mm.

Hawaiian islands, 3 females, 2 males; type, female.

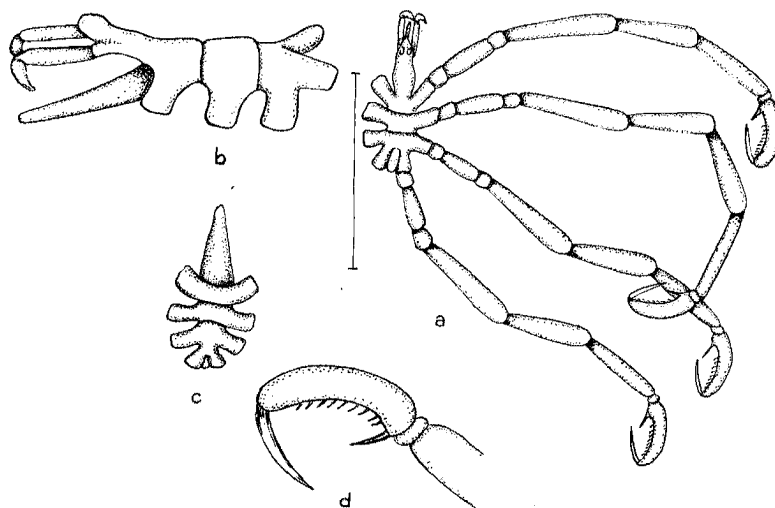


FIGURE 2.—*Anoplodactylus intermedius*, new species. a, adult, dorsal view, line at left 1 mm.; b, body from side; c, body from below; d, terminal leg joints.

***Anoplodactylus projectus*, new species (fig. 3).**

Color: straw. *Body*: not hairy but pitted; transverse processes well separated, longer than the width of the body; transverse suture lines two only, one behind ocular segment and one behind the second body segment. *Ocular segment*: about as long as the two following segments, narrow in front, overlapping the base of the proboscis; its cephalic margin either side of the region of the chelifori with a little notch or two slight projections, the basal one long and

slender. *Ocular tubercle*: high conical with well developed eyes not deeply pigmented. *Proboscis*: cylindrical, less than half as broad as long. *Abdominal segment*: moderately well developed, erect; less than half as broad as long. *Chelifori*: 2-jointed; first cylindrical, longer than the proboscis; second short with sharp jaws; hairs on jaws and on the first segment near its end. *Ovigeras*: 6-jointed; first rather heavy, cylindrical; second and third long; the last small, having many hairs, other joints bear scattered but prominent hairs. *Legs*: moderately slender, all pitted, but few hairs; first coxal small, second larger; other two with a long projection one side of the distal end; femur of moderate length, bearing a tubular opening on its mid-dorsal side and a projection of the dorsal side at the distal end; second tibial and femur area about of a length, the first tibial is shorter; long joints with a few spines and hairs; first tarsal small, bearing several long hairs toward its distal ventral end; second tarsal bearing two strong teeth at the base, a number of long hairs, then intervals and a series of short curved sharp teeth; the large claw is more than half the length of the second tarsal; second tarsal bearing few, small hairs on its outer surface.

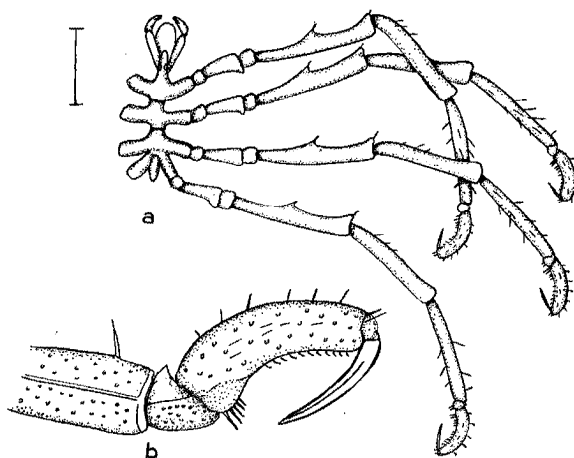


FIGURE 3.—*Anoplodactylus projectus*, new species, a, adult, dorsal view, line at right 1 mm.; b, foot.

Measurements. From the base of the chelifori to first segmentation lines, 1 mm.; between first and second, 0.44 mm.; between second and third, 0.48 mm.; between third and end, 0.4 mm. Proboscis, length 1 mm. by 0.3 mm. Total body length 2.41 mm. Abdomen, 0.6 mm. by 0.18 mm. Eye, 0.3 mm. by 0.24 mm. at base. Width of body between processes 0.36 mm. Length of transverse processes, 0.40 mm. Total width, 1 mm. Chelifori, 1st joint, 0.64 mm. by 0.12 mm.; 2d, 0.24 mm. by 0.15 mm. Ovigeras, 1st joint, 0.5 mm. by 0.25 mm.; 2d, 0.8 mm. by 0.25 mm.; 3d, 1 mm. by 0.25 mm.; 4th, 0.55 mm.; 5th, 0.35 mm.; 6th, 0.1 mm. by 0.1 mm. Legs, 1st joint, 0.3 mm. by 0.24 mm.; 2d, 0.6 mm. by 0.15 mm.; 3d, 0.38 mm.; 4th, 1.40 mm. by 0.3 mm.; 5th, 1.34 mm. by 0.24 mm.; 6th, 1.40 mm. by 0.16 mm.; 7th, 0.18 mm. by 0.18 mm.; 8th, 0.70 mm. by 0.18 mm. Claw, 0.50 mm. Second coxal projection, 0.45 mm. by 0.15 mm.

Oahu: Pearl Harbor, March 15, 1938, from bottom of ship; type, 1 female.

Distinctive features are the notches or projections at the cephalic end of the body between the chelifori and first transverse processes.

Endeis (Phoxichilus) nodosa, new species (fig. 4).

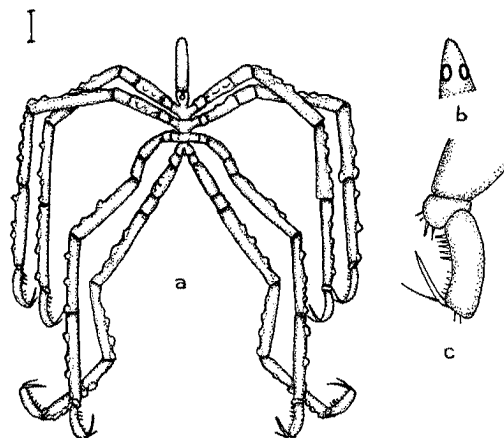


FIGURE 4.—*Endeis nodosa*, new species, a, adult, dorsal view, line at left 1 mm.; b, eye tubercle; c, foot.

Color: preserved whitish, almost cream. *Body*: smooth; lateral process well separated and well developed, wider than the body between. *Ocular tubercle*: rather high conical, jointed; eyes moderately pigmented. *Proboscis*: cylindrical, more than half the length of the body, less than half as long as wide; the end quite hairy. *Abdominal segment*: rather stout; a little longer than broad. *Legs*: moderately stout; not very hairy except small hairs on the longer joints and a small but prominent dorsal hair on the first coxal joint; leg joints do not taper much; femur and second tibial about the same length and longer than the first tibial; these long joints bear knobs on the outer sides, one on the femur and two or more on the other long joints; first tarsal rather small, bearing three large spines below as well as several other smaller hairs; second tarsal bearing strong teeth on its inner surface, three strong basal ones, then a pair, then two more, then a little interval and six more strong teeth; terminal claw more than half the length of the second tarsal; paired claws about half this length.

Measurements. From the base of the proboscis to the first segmentation line, 0.72 mm. Between first and second segmentation lines, 0.48 mm.; between second and third, 0.54 mm.; between third and fourth, 0.54 mm. From the third line to the end of the last transverse process, 0.6 mm. Proboscis, 1.56 mm. by 0.6 mm. Eye tubercle, 0.48 mm. by 0.24 mm. Total body length, 3.72 mm. (proboscis, 1.56 mm. plus body, 2.16 mm.). Abdomen, 0.55 mm. by 0.3 mm. Width of body, narrowest, 0.48 mm. Width of body between transverse processes, 0.6 mm. Length of transverse processes, 0.5 mm. Total width, 1.6 mm. Leg, 1st

joint, 0.3 mm. by 0.36 mm.; 2d, 1.08 mm. by 0.5 mm.; 3d, 0.6 mm. by 0.48 mm.; 4th, 2.5 mm.; 5th, 2.04 mm.; 6th, 2.5 mm. by 0.38 mm.; 7th, 0.18 mm.; 8th, 0.84 mm. by 0.26 mm. Long claw, 0.5 mm. by 0.3 mm.

Oahu: Kaneohe Bay, Sept. 27, 1924, type, one of a lot of 23 females and young; Kaneohe Bay, Oct. 29, 1927, from hydroids, three females, V. Pietschmann, collector; Oahu, three females.

These last specimens were dark brown in color.

Phoxichilidium truncatum, new species (fig. 5).

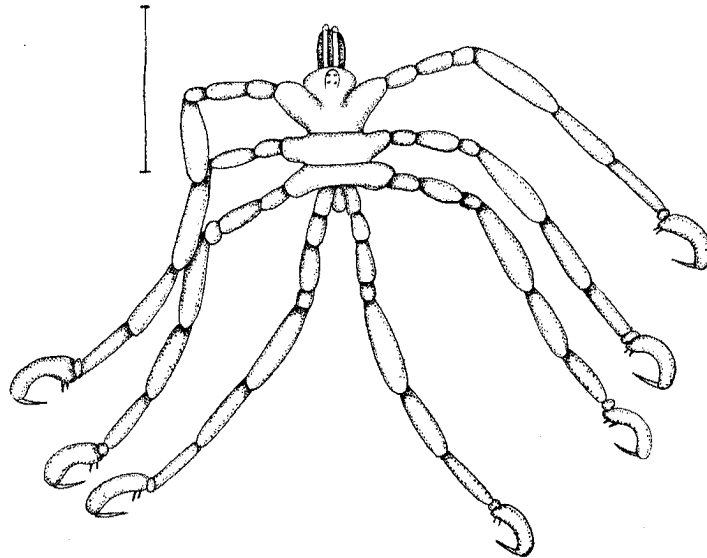


FIGURE 5.—*Phoxichilidium truncatum*, new species, adult, dorsal view, line 1 mm.

Color: dark brown. *Body*: not hairy, somewhat granular; transverse processes not widely separated, comparatively short; body broader than the transverse processes. *Ocular segment*: broad in front; the first lateral processes not well separated. *Ocular tubercle*: near the front edge of the body, long, with four well developed eyes not pigmented. *Proboscis*: cylindrical, short; extending a little beyond the first coxal joint, when the front legs are bent forward; nearly as broad as long. *Abdominal segment*: short, not very elongate; shorter than the last transverse process. *Chelifori*: 2-jointed; first joint cylindrical, about as long as the proboscis; second extending over the end of the proboscis. *Oviger*: 6-jointed; second, third and fifth the longest; few hairs on the terminal joints. *Legs*: first and third coxal short, second longer than either; next 3 joints nearly the same length; first tarsal small; second tarsal well marked, slightly curved, ending in a long, rather slender claw which is over half the length of the second

tarsal; at the base of the second tarsal three strong, rather blunt teeth. The legs above and below bear a few small hairs.

Measurements. Base of chelifori to first segmentation lines, 0.35 mm.; first line to second, 0.2 mm.; second to third, 0.2 mm.; third to end of transverse process, 0.2 mm. Proboscis, 0.3 mm. by 0.25 mm. Total length, 1.2 mm. (body, 0.95 mm. plus proboscis, 0.3 mm.). Abdomen, 0.1 mm. by 0.1 mm. Width of body, 0.6 mm. at first legs, 0.55 mm. at second legs. Transverse processes, 0.15 mm. Chelifori, 1st joint, 0.25 mm. by 0.05 to 0.075 mm.; 2d, 0.1 mm. Legs, 1st joint, 0.20 mm. by 0.15 mm.; 2d, 0.3 mm. by 0.15 mm.; 3d, 0.2 mm. by 0.3 mm.; 4th, 0.6 mm. by 0.15 mm. to 0.2 mm.; 5th, 0.55 mm.; 6th, 0.45 mm.; 7th, 0.075 mm.; 8th, 0.4 mm. Claw, 0.2 mm. Eye tubercle, 0.1 mm. by 0.15 mm. at base. Ovigera, 1st joint, 0.15 mm. by 0.1 mm.; 2d, 0.17 mm.; 3d, 0.25 mm. by 0.05 mm.; 4th, 0.2 mm. by 0.05 mm.; 5th, 0.15 mm. by 0.05 mm.; 6th, 0.06 mm.

Oahu: type, one male, same lot, one female; one female adult; one male; one male adult; Kawailoa, one female.

Ammothella pacifica, new species (fig. 6).

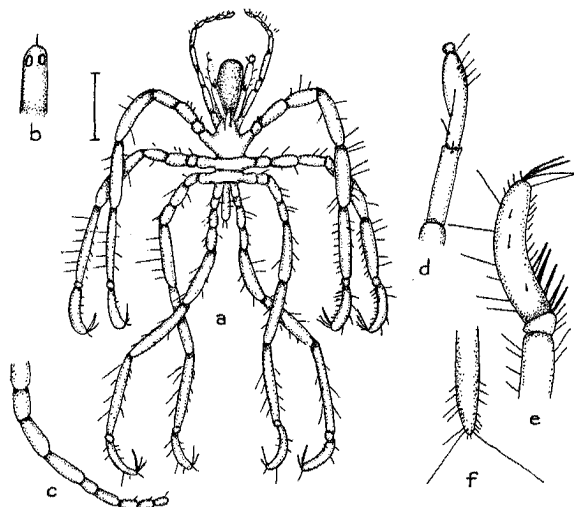


FIGURE 6.—*Ammothella pacifica*, new species, a, adult, dorsal view, line above at left 1 mm.; b, eye tubercle; c, oviger; d, cheliforus; e, foot; f, caudal appendage.

Color: light straw. *Body*: rather slender, scattered fine processes but no hairs except the distal ends of the transverse processes which are well marked, shorter than the body between, well separated, each with several long spines or hairs; suture lines well marked. *Ocular segment*: rather broad; joint about as long as the next two segments; ocular tubercle with mounds on each side. *Ocular process*: long, slender, a little narrower at very end, almost cylindrical; eyes well developed near the end of the process; not bearing hairs; erect and about one fourth length of the proboscis. *Abdominal segment*: very long spines;

elevated, but flattens when it reaches almost to the end of second coxal joint; bearing very long hairs, some sharp pointed, some blunt along its middle length and toward the tip, a dozen or more in about three regions with a few small hairs. *Proboscis*: oval, more than half as wide as long, truncate at end. *Chelifori*: 3-jointed, stout; first joint cylindrical bearing several long hairs near end; second joint cylindrical at base, smaller toward end, longer than first joint bearing about 10 large, long hairs along outer margin; third joint very small, more or less spherical, irregular, bearing one strong hair laterally; cheliforus about as long as proboscis. *Palpi*: 9-jointed; first and third small, second and fourth longest; terminal joints becoming smaller and shorter, but last joint longer than the next to the last; last five joints bearing many rather short hairs. *Ovigera*: first joint broader than others, cylindrical; second also stout; second, third and fourth longest; the rest much smaller and shorter; appendage with but few hairs; last joint ending in several spines or teeth. *Legs*: first coxal joint short, second and third about equal; first two bearing a number of irregularly placed long hairs; third with fewer long hairs; long leg joints heavy with many long hairs; second tarsal more slender than first and first than the femur; first tarsal quite well developed and toothed below, with a few hairs above; second tarsal ending in a rather short median claw, which is less than half the length of the second tarsus; paired claws are more than half the length of the central; below near base with 4 well separated spines on ventral side; farther toward tip with 6 or 8 regularly placed fine teeth or spines; 8 or more long hairs of various lengths coming off from the outer side of the second tarsal joint.

Measurements. Base of chelifori to the first segmentation lines, 0.45 mm.; between first and second, 0.2 mm.; between second and third, 0.2 mm.; between third to end of last transverse process, 0.25 mm. Length of proboscis, 0.80 mm. by 0.5 mm. Total body length, 1.9 mm. (body, 1.1 mm., plus proboscis, 0.8 mm.). Width of body between processes, 0.3 mm. Length of transverse processes, 0.2 mm. Total body width, 0.7 mm. Abdomen, 0.70 mm. by 0.1 mm. Hairs, 0.15 mm. by 0.3 mm. Ocular tubercle, 0.3 mm. by 0.1 mm. Chelifori, 1st joint, 0.35 mm. by 0.075 mm.; 2d, 0.5 mm. by 0.075 mm.; 3d, 0.1 mm. by 0.08 mm. Palpi; 1st joint, 0.1 mm.; 2d, 0.3 mm. by 0.1 mm.; 3d, 0.14 mm. by 0.075 mm.; 4th, 0.2 mm.; 5th, 0.1 mm.; 6th, 0.15 mm.; 7th, 0.2 mm. by 0.05 mm.; 8th, 0.075 mm.; 9th, 0.2 mm. by 0.06 mm. *Ovigera*, 1st, 0.1 mm.; 2, 0.15 mm.; 3d, 0.1 mm.; 4th, 0.2 mm.; 5th, 0.2 mm. by 0.075 mm.; 6th, 0.05 mm.; 7th, 0.1 mm.; 8th, 0.04 mm.; 9th, 0.06 mm.; 10th, 0.3 mm. *Legs*, 1st joint, 0.2 mm. by 0.15 mm.; 2d, 0.45 mm.; 3d, 0.4 mm.; 4th, 0.7 mm. by 0.17 mm.; 5th, 1 mm. by 0.06 mm.; 6th, 1.1 mm.; 7th, 0.1 mm. by 0.75 mm.; 8th, 0.5 mm. by 0.2 mm. Terminal claw, 0.2 mm. Lateral claws, 0.15 mm. Total extent, 9.99 mm.

Oahu: Honolulu, Aquarium, March 1, 1930, two specimens; one selected as the type.

These are distinguished by the peculiar, long but spineless ocular tubercle, the long, spiny abdomen, the peculiar swollen second joint of the chelifori and the character of the spines and hairs of the second tarsal joint.

***Ammothella bi-unguiculata* var. *fusca*, new variety (fig. 7).**

Color: brown. *Body*: moderately elongate; smooth, sutures prominent, lateral processes rather short. *Ocular segment*: about as long as the next two

segments; broad in front, more or less truncate. *Ocular tubercle*: low, with eyes brown, near the front margin of the body. *Proboscis*: about the length of the rest of the body, quite large; longer than wide. *Abdominal segment*: quite large; swollen toward its middle; extending beyond the first coxal joint. *Palpi*: 9-jointed, four terminal joints flattened, with a serrate arrangement of one margin. *Chelifori*: 3-jointed, cylindrical, the first and third joints small, the second about equal to the two combined. *Legs*: first coxal joint short, second and third about equal; first two joints bearing a number of irregularly placed long hairs; third joint with fewer really long hairs; long leg joints with very long hairs; second tarsal more slender than the first and the first more than femur; first tarsal quite well developed and spiny below, with a hair or so above; second tarsal ending in a short median hair which might represent a claw; paired claws more than half the length of second tarsus; below, near base, with four well separated spines on the ventral side.

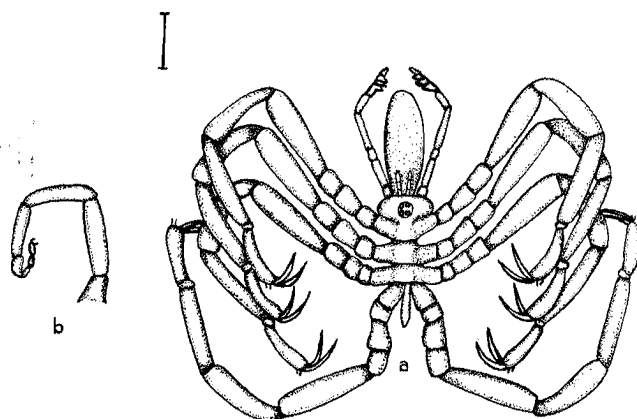


FIGURE 7.—*Ammothella bi-ungiculata* var. *fusca*, new variety, a, adult, dorsal view, line at left 1 mm.; b, oviger.

Measurements. Total body length, 2.9 mm. (body 1.5 mm. plus proboscis 1.4 mm.). Width, 0.8 mm. Transverse processes, 0.2 mm., body between, 0.2 mm. Length, first segment, 0.5 mm. Abdomen, 0.25 mm. by 0.1 mm. Proboscis, 1.5 mm. by 0.4 mm. Chelifori, 1st, 0.1 mm.; 2d, 0.3 mm.; 3d, 0.1 mm. Palpi, 1st joint, 0.12 mm.; 2d, 0.5 mm.; 3d, 0.1 mm.; 4th, 0.7 mm.; 5th, 0.12 mm.; 6th, 0.1 mm.; 7th, 0.05 mm.; 8th, 0.05 mm.; 9th, 0.05 mm. Ovigera, lacking. Legs, 1st joint, 0.15 mm.; 2d, 0.2 mm.; 3d, 0.15 mm.; 4th, 1.2 mm.; 5th, 0.8 mm.; 6th, 1.2 mm.; 7th, 0.05 mm.; 8th, 0.5 mm. Two claws, 0.2 mm. Total extent, 8.9 mm.

Specimen from Waikiki a little more hairy, the palpi are like the female, flattened laterally; ovigera, 1st joint rather short cylindrical, heavier than the others; 2d joint long, 3d short, 4th long, 5th quite long, 6th short and the remaining joints also short and very slender. Terminal joint ends in several teeth and hairs. There are a few hairs on the other joints.

Oahu: Waianae, one adult female, the type; Waikiki, one male with ovigera, Jan. 12, 1932.

Genus **CLOTENOPSA**, new genus

Most like *Clotena*, but it has either palpi or chelifori, not both, and in the type this appendage is chelate which may be an immature feature. Palpi or chelifori are 3-jointed and widely separated. The proboscis is broad and short. The eye tubercle is low and well forward. The terminal claws of the legs are simple and single. There are few hairs on any of the appendages. The ovigera are 9- or 10-jointed, rather simple, but provided with spines on lateral joints.

Type of genus, *Clotenopsa prima*.

Clotenopsa prima, new species (fig. 8).

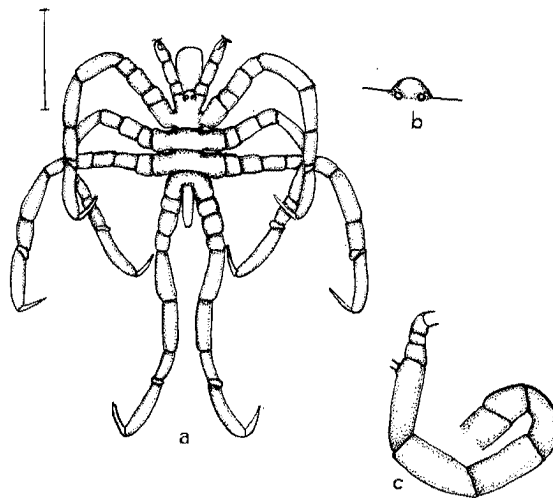


FIGURE 8.—*Clotenopsa prima*, new species, a, adult, dorsal view, line at left 1 mm.; b, eye tubercle; c, oviger.

Color: straw. *Body*: not smooth, but not pitted nor hairy; rather compact; transverse processes not separated but distinct, short, broad, shorter than the body between, with almost no hairs; legs short. *Ocular segment*: truncate in front, rather short, about as long as the next two segments; eye tubercle a low broad mound near the cephalic end and overlapping slightly the forward border of the body proper; 4 well developed dark brown eyes. *Proboscis*: cylindrical, nearly as broad as long; rather short; more or less truncate at the end. *Abdomen*: cylindrical, long, extending almost to the middle of the second coxal joint of the last leg. *Chelifori*: 3-jointed, stout, cylindrical; first and last joints short, center longer; last joint chelate; no hairs evident on the appendage. *Oviger*: long, heavy, almost as thick as the leg joints; long joints cylindrical, terminal joints small; apparently 9-jointed; few hairs on any joints; last joint ending in a claw and a lateral spine or tooth. *Legs*: rather short and heavy; second coxal longest of the three coxal joints; femur and first tibial about the same length and second tibial shorter; first tarsal rather small, with no conspicuous hairs except

a few above and below; first tarsal ending in a rather curved claw over half the length of the second tarsal.

Distinctive characters. Short legs, simple, much curved leg claws; claws of ovigers, two; chelifori with jaws; no palpi unless the widely placed appendages are palpi and there are no chelifori present.

Measurements. From the anterior border of the body to the first segmentation line, 0.4 mm.; first to second, 0.25 mm.; second to third, 0.25 mm.; third to end of last transverse process, 0.4 mm. Width of body between processes, 0.35 mm. Length of proboscis, 0.30 mm. Proboscis, 0.5 mm. by 0.35 mm. Total body width, 0.95 mm. Total body length, 1.8 mm. (body, 1.3 mm. plus proboscis, 0.5 mm.). Abdomen, 0.4 by 0.3 mm. Chelifori, 1st joint, 0.075 mm. by 1.25 mm.; 2d, 0.2 mm. by 1.25 mm.; 3d, 0.15 mm. by 0.1 mm. Palpi none. Ovigera, 1st joint, 0.16 mm.; 2d, 0.2 mm.; 3d, 0.45 mm.; 4th, 0.35 mm.; 5th, 0.55 mm.; 6th, 0.48 mm.; 7th, 0.075 mm.; 8th, 0.1 mm.; 9th, 0.5 mm. Claw, 0.5 mm. Legs, 1st joint, 0.15 mm. by 0.25 mm.; 2d, 0.25 mm. by 0.25 mm.; 3d, 0.25 mm.; 4th, 0.45 mm.; 5th, 0.45 mm.; 6th, 0.3 mm.; 7th, 0.1 mm. by 0.12 mm.; 8th, 0.45 mm. by 0.1 mm. Claw, 0.25 mm. Total extent, 6.25 mm.

Oahu: Black Point, December 1930, one specimen, possibly immature.

Clotenopsa species (fig. 9).

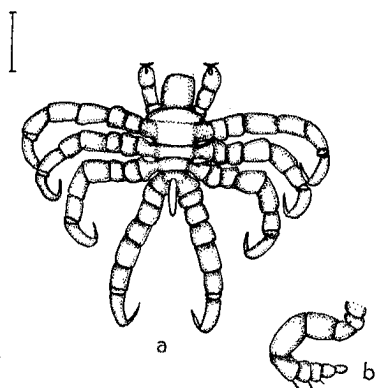


FIGURE 9.—*Clotenopsa* species, a, immature specimen, dorsal view, line above at left 1 mm.; b, oviger.

Length of proboscis, 0.4 mm. by 0.35 mm., rest of body, 1.10 mm. Total length, 1.5 mm. Total width of body, 0.80 mm. Length of abdomen, 0.25 mm. by 0.15 mm. at base. Chelifori, 1st joint, 0.05 mm. by 0.1 mm.; 2d, 0.15 mm.; 3d, 0.15 mm. Transverse processes, 0.15 mm. by 0.20 mm. Legs, 1st joint, 0.15 mm. by 0.20 mm.; 2d, 0.20 mm. by 0.20 mm.; 3d, 0.15 mm. by 0.20 mm.; 4th, 0.25 mm. by 0.20 mm.; 5th, 0.2 mm. by 0.2 mm.; 6th, 0.2 mm. by 0.08 mm.; 7th, 0.075 mm. by 0.075 mm.; 8th, 0.26 mm. by 0.15 mm. Claw, 0.15 mm. by 0.1 mm. at base. Ovigera, 1st joint, 0.05 mm.; 2d, 0.1 mm.; 3d, 0.18 mm.; 4th, 0.2 mm.; 5th, 0.12

mm.; 6th, 0.075 mm.; 7th, 0.025 mm.; 8th, 0.03 mm.; 9th, 0.02 mm. Claw, 0.02 mm. Total extent, 2 mm.

Oahu: Honolulu, Aquarium, March 1931.

This younger specimen, apparently of *C. prima* has shorter leg joints and a more concentrated body. It also seems to lack eyes. It may prove to be another species.

Lecythorhynchus ovatus, new species (fig. 10).

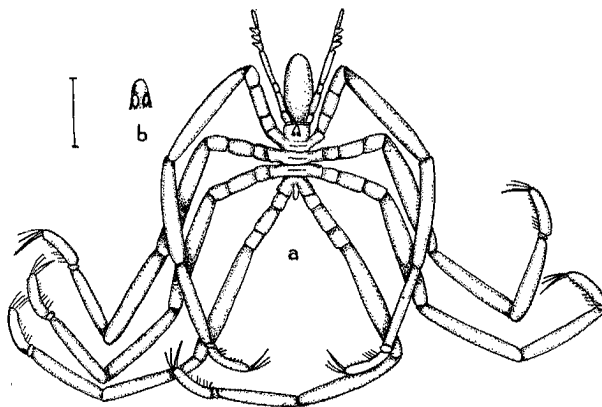


FIGURE 10.—*Lecythorhynchus ovatus*, new species, a, adult, dorsal view, line 1 mm.; b, eye tubercle.

Color: brown. *Body*: not hairy, darkly pigmented, fairly granular; segmentation lines well marked and three extra lines between each segment which look like segmentation lines; lateral processes not widely separated; body broader than the length of the transverse processes. *Ocular segment*: broad in front, as long as the next two segments. *Ocular tubercle*: high, conical, eyes well developed, dark brown. *Abdomen*: quite long, cylindrical, slightly conical, erect. *Chelifori*: 2 minute knobs on the front margin of the body. *Palpi*: 9-jointed; first and third joints very small, second and fourth longest; 4 terminal joints bear numerous hairs; ninth longest, sixth, seventh and eighth bearing slight lateral extensions. *Oxigera*: a little larger in diameter than the palpi; broken in the specimen. *Legs*: moderately long and fairly robust; second coxal longest, first shortest; long leg joints about equal in length, with few hairs; femur slightly heavier than next two; first tarsal small, but bearing numerous strong spines or hairs below and at least one above; second tarsus quite long, bearing a terminal claw less than half as long as the terminal, below, with four large basal spines and more distally about 12 much smaller ones, above this, a few hairs; second tibial heaviest of the leg joints.

Measurements. Front margin to base of eye tubercle, 0.2 mm. Front margin to end of first segmentation line, 0.4 mm.; first to second, 0.25 mm.; second to third, 0.25 mm.; third to end of transverse process, 0.35 mm. Total body length,

2.38 mm. (1.25 mm. plus 1.13 mm.). Transverse process, 0.3 mm. Body, 0.45 mm. Total width, 1.05 mm. Proboscis, 1.15 mm. by 0.5 mm. Abdomen, 0.35 mm. by 0.2 mm. Ocular tubercle, 0.1 mm. across. Chelifori vestigial. Palpi, 1st joint, 0.15 mm.; 2d, 0.35 mm. by 0.1 mm.; 3d, 1.5 mm.; 4th, 0.55 mm.; 5th, 0.1 mm.; 6th, 1.5 mm.; 7th, 0.1 mm.; 8th, 0.15 mm.; 9th, 0.2 mm. Legs, 1st joint, 0.25 mm.; 2d, 0.7 mm.; 3d, 0.45 mm.; 4th, 2 mm.; 5th, 1.8 mm.; 6th, 1.50 mm.; 7th, 0.2 mm. by 1.5 mm.; 8th, 0.75 mm. by 0.25 mm. Large claw, 0.3 mm. by 0.05 mm., smaller claws, 0.2 mm. Total extent, 17.15 mm.

Oahu: one adult female, type.

Vertical line on the left side of the page.