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SUPPLEMENT

Additional species that came to notice too late to be included in their proper places in the systematic series or in the regional lists.

Trichoniscidae

Trichoniscus nearcticus, Arcangeli, 1932

Figure 313

Trichoniscus (subgenus?) *nearcticus* ARCANGELI, 1932, p. 137 (orig. descr.), Fig. 7.

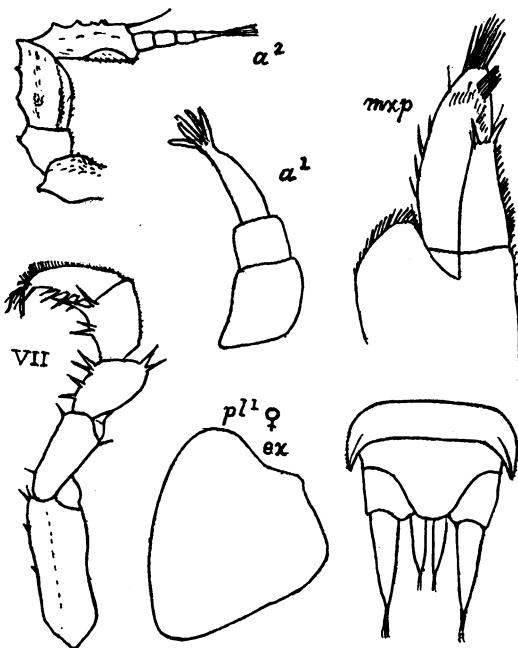


Fig. 313. *Trichoniscus nearcticus* Arcangeli. Adapted from Arcangeli, 1932.

An eyeless species having the body somewhat more convex in the anterior portion than usual in this group. The body is opaque, unpigmented, with the surface roughened by granulations which on high magnification are seen to be each constituted of a conoidal group of serrate scales. The granulations tend to be disposed in three transverse rows on the first and two on the remaining thoracic segments; on the abdominal segments they occur only along the posterior borders.

The head is fully set back into first body segment and in a dorsal view presents a gently arched outline which projects a little in front of the

well-developed trapezoidal lateral lobes, which extend directly outward so that their distal margins are continuous with the lateral margin of the first body segment. The antennae are short; extended back they reach little beyond the rear margin of segment I. Their flagellum has four articles.

Only segment I of the thorax has the rear lateral angles of the epimera rounded off. Beginning with segment IV, this angle is more acute and more extended back in successive segments. These epimera have an oblique granular raised line extending forward and upward from the rear lateral angle. The legs are short with rather wide segments, especially the merus, carpus, and propodus. The abdominal segments 3 to 5 have epimera with the posterior angle acute, not in contact with that of the next following segment, and, in segments 3 and 4, bent back to reach about half the length of the next segment.

Length, 2.73 mm.; width, 1.13 mm. (at the sixth thoracic segment.)

LOCALITY.—MacLeay Park, Portland, Oregon, one female specimen.

PROTRICHONISCUS ARCANGELI, 1932

Resembling *Trichoniscus* but distinguished by peculiarities in the pleopoda. See description of *P. heroldi*, the type and only species.

Protrichoniscus heroldi Arcangeli, 1932

Figure 314

Protrichoniscus heroldi ARCANGELI, 1932, p. 133 (orig. descr.), Figs. 5, 6.

This is a small eyeless species with a somewhat translucent body, having the body surface minutely areolated and rendered delicately granular by quite thickly scattered and very minute triangular scale-like setae, which are larger on the rear border of the telson and somewhat modified from those on other parts of the body.

Front outline of head convex in a dorsal view, with well-developed obliquely extending lateral lobes of somewhat trapezoidal outline. Antennae of about half the length of the body; their flagellum consists of six articles.

The rear angles of the first and apparently also the second thoracic segments are rounded, but beginning slightly with the fourth, there is an increasing backward extension of the epimera. The epimera of abdominal segments 3 to 5 are narrow and without projecting angles. They are appressed to the sides so that in a dorsal view the side outline of the abdomen appears continuous.

The peculiarities of the first and second pleopoda on which the genus *Protrichoniscus* is chiefly based are described in detail by Arcangeli; only a few of the main points can be noted here. In the male the first pair each consist of an exopodite of long-triangular outline, articulated to a large, somewhat rectangular protopodite, to which the almost vestigial endopodite is attached close to the inner end of the articulation of the exopodite. In the second pleopoda of the male the exopodite is present only as a flattened expansion of the transversely elongated protopodite, not as a distinctly articulated piece. The endopodite forms a slender styloid process of two distinct segments.

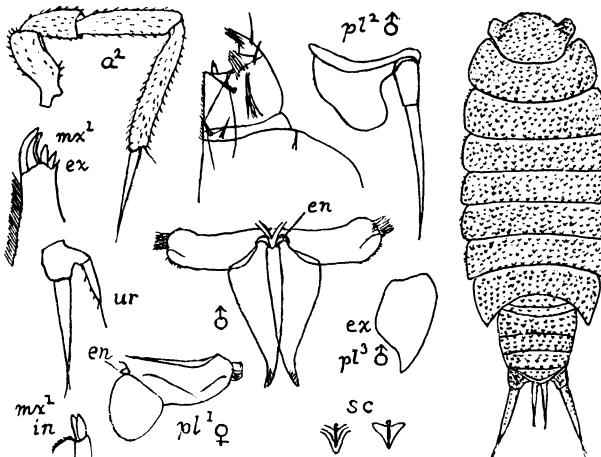


Fig. 314. *Protrichoniscus heroldi* Arcangeli. Adapted from Arcangeli, 1932.

In the female the exopodite of the first pair is short and oval and the endopodite is vestigial, as in the male, while the second pair resemble those of the male, but with a shorter, less robust, and less pointed endopodite. The similarity of these pleopoda in the two sexes leads Arcangeli to suspect that this may be a hermaphroditic species, the male condition developing first.

Length, 4.47 mm.; width, 1.93 mm.

LOCALITIES.—San Mateo, California, in fissures in a muddy beach; Muir Woods, California.

Cubariidae

Cubaris microphthalmus (Arcangeli), 1932

Figure 315

Armadillo (Diploexochus) microphthalmus ARCANGELI, 1932, p. 122 (orig. descr.),
Fig. 1. (Name corrected to *microphthalmus* in description and cut legend.)

This species belongs to group I of the genus *Cubaris* as classified in the present work. It appears sufficiently recognizable by the very small eyes and by the straight sides of the extended part of the telson,

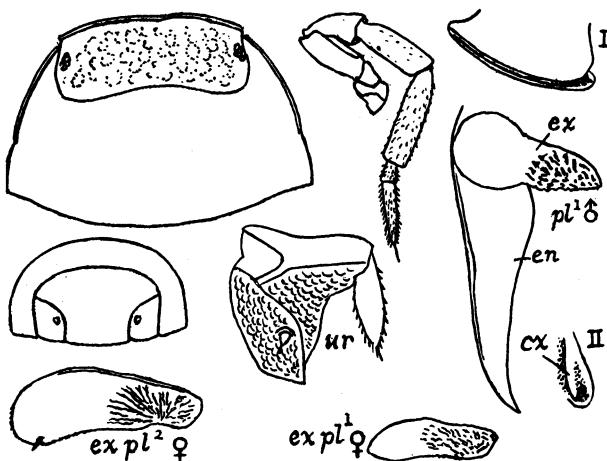


Fig. 315. *Cubaris microphthalmus* (Arcangeli). Adapted from Arcangeli, 1932.

and is not regarded by Arcangeli as referable to the imperfectly described *C. affinis* (Dana) or *C. californica* (Budde-Lund), both of which are also from California.

It is a smooth species except for small, very slightly marked tubercles on the head, the surface finely punctate with minute setae. The eyes have but four well-formed ocelli besides several imperfect ones. The color is whitish above, clouded with brownish, especially on the head.

Length, 6.5 mm.; width, 3 mm.

LOCALITY.—Saratoga, California.

Sphaeromidae
Exosphaeroma bondi, new species

Figure 316

Body wide (about one half the length) with the back well arched; the form is

similar in the two sexes except as noted below in describing the abdominal appendages.

Head trapezoidal, with its lateral and anterior outlines sinuous, rather deeply set back into the thorax. There is a thin outwardly projecting margin along its sides. The rear margin is concave; the eyes (which appear rather small owing to only a part of their 20 or more ocelli being pigmented) are wide apart in the rear lateral projections of the head.

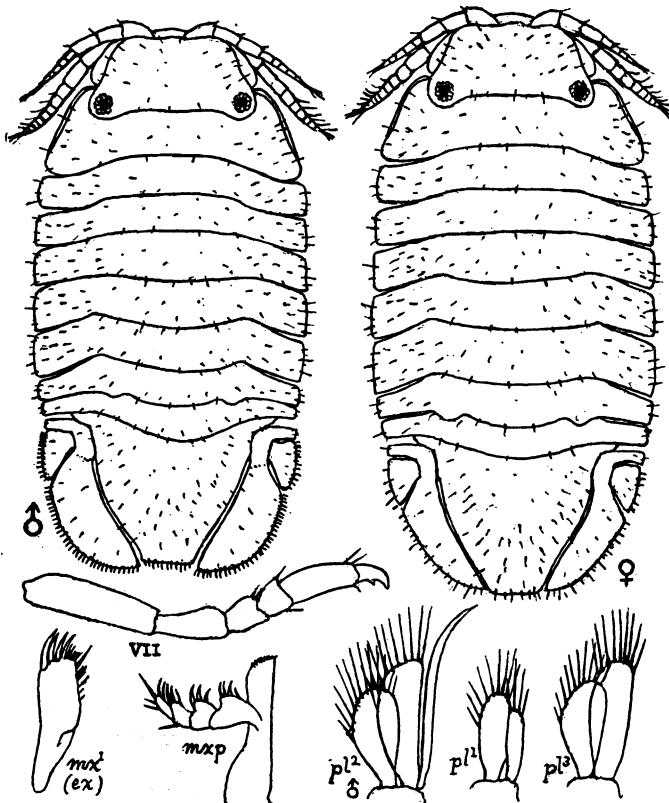


Fig. 316. *Exosphaeroma bondi*, new species.

The first antennae are rather short, and have a flagellum of only five or six articles; the second antennae are much stouter and also longer, having two short and three longer segments in the peduncle and a flagellum of about eight articles. They can reach, when drawn back, near the rear corners of the first thoracic segment.

The buccal mass projects well forward, so that its front margin is visible in a dorsal view of the head when the latter is in its usual position; the maxilliped has the second, third, and fourth joints of the palp somewhat produced into lobes.

The body surface is without any noticeable tuberculation and is fairly even;

it is pubescent with short stiff scattered hairs to which fine mud and minute débris of all kinds tend to adhere.

The first thoracic segment is the largest and longest, it has a thin projecting lateral border similar to that on the head, but narrower. The second and following thoracic segments are short, but increase in length and in the amount of backward deflection of the epimera to the sixth segment; the seventh diminishes again in these respects. When the body is straightened out, there are narrow gaps between the epimera of successive segments.

The legs do not exhibit much differentiation. The anterior pairs are smaller and weaker than those farther back, and all are of ambulatory character, ending in weak double claws which can have little or no grasping power.

As is characteristic of this group, the abdominal segments are reduced to two by consolidation of the normal six somites, the first being very short, though little narrower than the rear end of the thorax with which it articulates. By far the larger part of the abdomen is composed of the large terminal segment, which is wide in front, where it has two small lateral projections; its main portion is very convex and tumid above, with slightly curved sides converging to a rather narrow squarely truncated rear end; the uropoda, articulated with the terminal segment at their inner anterior angle but extending along the converging sides of the terminal segment, round out the body outline.

The pleopoda of the three anterior segments have their inner and outer branches foliate and bordered with long setae; they do not appear to differ much in the two sexes, except that in the male the second pleopoda each bear a long saber-shaped, sharply pointed stylus arising from its median border. This stylus is considerably longer than the foliate parts of the appendage, reaching, in fact, to near the end of the abdomen, and those of the two sides are curved so that they cross each other some distance from their ends when lying in the usual posteriorly directed position.

The uropoda consist of a short obliquely transverse basal part bearing a movably articulated, short, flattened triangular external branch and a long flattened internal branch, apparently less movably joined to the basal part, and extending along the sides of the terminal abdominal segment. In the male this internal branch is quite wide and extends a trifle beyond the end of the last segment of the body, having a regularly, rather broadly curved convex external outline, and bearing over thirty short regularly disposed spines or setae along this border. In the female the external branch scarcely reaches the end of the last segment and is narrower, especially toward the end, thus giving the rear end of the entire animal a more tapering outline in that sex, and it bears fewer and slenderer spines, less uniform in length and distribution than in the male, along its external border.

Yellowish, practically unpigmented, or sometimes with scattered dots of blackish pigment.

Size very small; the largest females are about 2.10 mm. to 2.13 mm. in length; the largest males, 1.87 to 1.90 mm.

LOCALITY.—Étang Saumatre, a large brackish lake in the low part of the interior of Haiti. About 25 specimens were turned over to me for study by Dr. R. M. Bond of Yale University, who collected them under stones near the shore, February 20, 1933, and for whom I take pleasure

in naming the species. Of these specimens, six were females with a marsupium in which very young eggs could be distinguished. These individuals appeared to be adult or nearly so; there were also five apparently adult males; the remainder of the lot consisted of smaller, often noticeably immature specimens of various sizes. Most of them were returned to Dr. Bond; the type, a male, is in the American Museum of Natural History (Cat. No. 6923); also the female cotype (Cat. No. 6924) and several paratypes.

Oniscidae

Halophiloscia brasiliensis Moreira, 1932

Figure 317

Halophiloscia brasiliensis MOREIRA, 1932, p. 428 (orig. descr.), Pl. II.

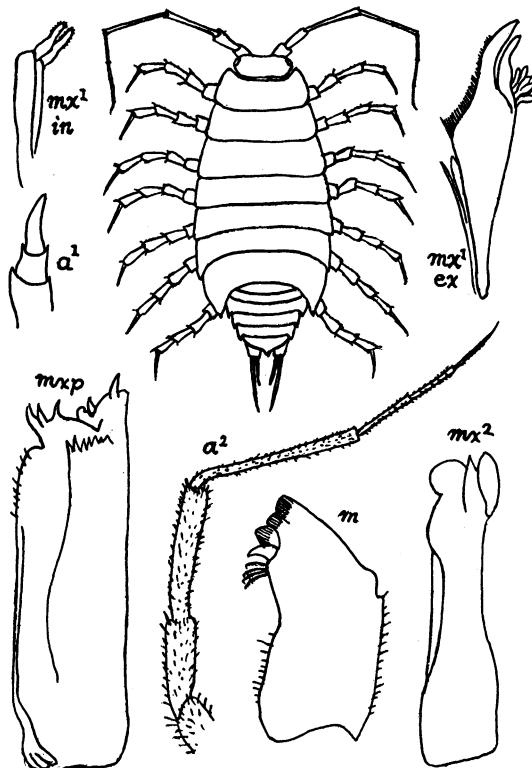


Fig. 317. *Halophiloscia brasiliensis* Moreira. Adapted from Moreira, 1932.

The facts stated in the brief description given by Moreira are for the most part plainly shown in his illustrations as reproduced here in outline, so that it is needless to quote from it, except his statements that the body has very minute punctations and hairs, that the head is convex and smooth, the predominating color reddish chestnut with whitish arabesque markings on the thorax, and the dactylus, propodus and carpus of the legs bluish.

Length of largest specimens, 14 mm.; width, 7 mm.

LOCALITY.—Rio de Janeiro, Brazil (4 specimens.) Types in the collection of the Instituto Biológico de Defesa Agrícola, Rio de Janeiro.

It seems most likely that Moreira is correct in assigning this species to *Halophiloscia* rather than to one of the subdivisions of *Philoscia*, thus making six probable members of the former group that have been recorded from the New World.

Pentoniscus dominicanus Arcangeli, 1932

Figure 318

Pentoniscus dominicanus ARCANGELI, 1932c, p. 1 (orig. descr.), Figs. 1-3.

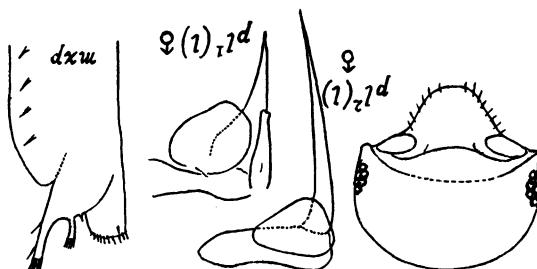


Fig. 318. *Pentoniscus dominicanus* Arcangeli. Adapted from Arcangeli, 1932c.

Omitting certain details which can mostly be well seen in the illustrations, the following are the main points brought out in Arcangeli's description.

In the general form of the body, in the absence of granulations, and in color, this species much resembles *Pentoniscus pruinosus* Richardson, but is easily distinguished from it by the head, which presents a narrow but distinct frontal line which, curving backward, permits the convex epistoma and the supra-antennal line to be visible in a dorsal view. Lateral margins of the thoracic segments slightly raised. There are no noticeable sexual differences in the legs. The telson is a little shorter with very slightly concave sides and with the apex not rounded off.

Length, 2.7 mm.; width, 1 mm. (at sixth segment).

LOCALITY.—Roseau, Dominica, B. W. I. One male and four imperfect females. Specimens in the museum of the University of Turin, Italy.

ROSTROPHILOSCIA ARCANGELI

The following is the type and only species.

Rostrophiloscia dominicana Arcangeli, 1932

Figure 319

Rostrophiloscia dominicana ARCANGELI, 1932c, p. 4 (orig. descr.), Figs. 7-14.

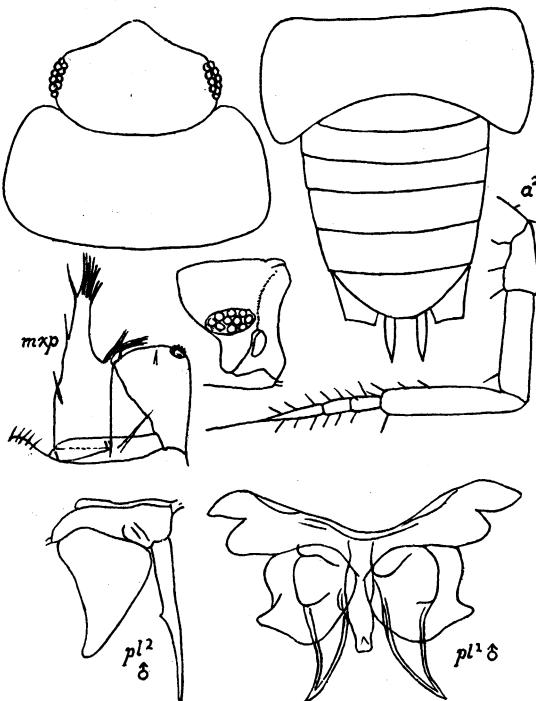


Fig. 319. *Rostrophiloscia dominicana* Arcangeli. Adapted from Arcangeli, 1932c.

The main characters of this species and genus, among them especially the remarkable triangular production of the front of the head, in which according to Arcangeli both the prossepistoma and cephalic tergite are involved, are well shown in the figures.

It bears considerable superficial resemblance to a *Rhyscotus*. The

dorsal surface is smooth, shining, with very minute and inconspicuous hairs. The forehead is not separated from the prosepistoma by a definite frontal line; the supra-antennal line is narrow, straight, and transverse. Eyes with ten ocelli; antennae little less than one-third of the body length.

The body segments have the lateral ends and rear angles considerably rounded; only in segments VI and VII are they a little extended backward.

The abdominal segments have very short, downwardly bent epimera not noticeable in a dorsal view. The telson is broadly rounded behind.

The coloration, described and shown in some detail by Arcangeli, is brown with the light markings usual in the *Philoscia* group.

Length, 3.06 mm.; width (at segment IV), 1.96 mm.

LOCALITY.—Laudat, Dominica. Type in the Museum of the University of Turin, Italy.

Cubaridae

Cubaris schultzei (Verhoeff), 1933

Figure 320

Venezillo schultzei VERHOEFF, 1933, p. 98, 102 (orig. descr.), Figs. 5-8.

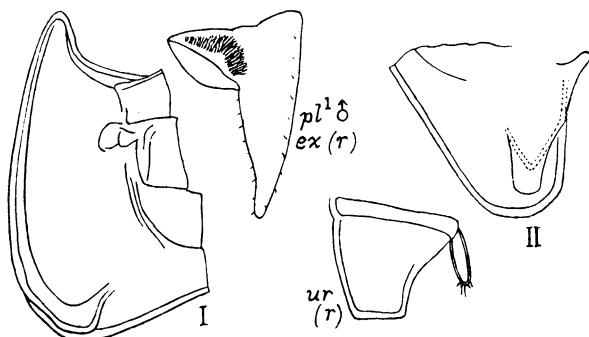


Fig. 320. *Cubaris schultzei* (Verhoeff). Adapted from Verhoeff, 1933.

Placed by Verhoeff in his group *Venezillo* (see remarks under genus *Cubaris*) which he raises to the rank of a full genus.

This species apparently belongs in group I of the provisional arrangement of *Cubaris* adopted in this work, as the coxopodite sulcus on the margin of segment I is stated to extend three-fourths of the length of the margin. (This however is not visible in Verhoeff's figure.) The general body surface is dull and entirely free from granulations,

but is closely undulated and verrucose on the thoracic tergites. The rear borders of the tergites of segments I to III are almost straight.

Segment II has a long, rather narrow coxopodite process which reaches nearly to the rear margin of the epimeron. The thoracic epimera are not bent or flared outward, except slightly so in the anterior part of the body. The anterior margin of the head forms a flattened obtuse angle and is only weakly developed, and without any sharp edge. A lateral border on the first thoracic segment is slightly indicated on the anterior part only.

Ocelli in four rows. Seventh legs of the male with a process on the basal joint. Flagellum of the antennae with the first article twice as long as wide. For additional details, especially of certain mouth parts and pleopoda, the reader must be referred to Verhoeff's description.

Color blackish gray to black, with whitish gray spotting, a larger spot just inside the epimera beside the usual small ones over the muscular insertions on the thoracic tergites.

Length of male, 9.5 mm.; of largest female, 11.5 mm.

LOCALITY.—“Near Chilopa” (probably Chilapa), State of Guerrero, Mexico; in the humus of a mountain forest.

Cubaris mexicana (Verhoeff), 1933

Figure 321

Microdillo mexicanus VERHOEFF, 1933, p. 98, 100 (orig. descr.), Figs. 1-4.

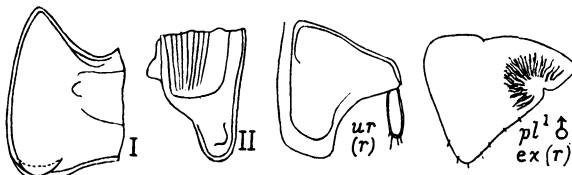


Fig. 321. *Cubaris mexicana* (Verhoeff). Adapted from Verhoeff, 1933.

For this species Verhoeff establishes a new group, *Microdillo*, to which he assigns full generic rank, although the comparison of its characters which he makes with those of *Cubaris (Venezillo) schultzei* (he leaves entirely out of consideration the numerous other species of the *Venezillo* group) is not at all convincing as regards the justification for considering the distinctions as of so much importance.

In color, general form, and appearance and character of the body surface, this species much resembles *C. schultzei* just described, though of smaller size; male 4.66 mm. long, largest female 8.5 mm. long.

The second article of the flagellum of the antenna is three times as

long as the first. The ocelli form four rows. Anterior border of forehead arched, not very prominent in profile, sharp-edged, but nearly obliterated in the middle third.

The sides of the first thoracic segment descend steeply and are turned up into a well-marked border with a furrow above. Coxopodite cleft of segment I only extending along the posterior quarter of the lower margin. In front of this the margin is undivided and rather sharp-edged. Coxopodite process of segment II, small, rounded, and far removed from the border. Seventh legs of male without a process on the basal joint.

LOCALITY.—“Near Chilopa” (probably Chilapa), State of Guerrero, Mexico, in the humus of a mountain forest.

***Mexicostylus squamatus* Verhoeff, 1933**

Figure 322

Mexicostylus squamatus VERHOEFF, 1933, p. 104 (orig. descr.), Figs. 9-15.

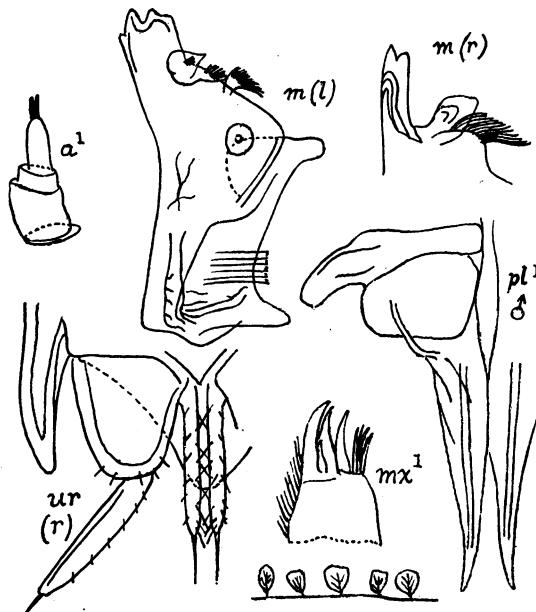


Fig. 322. *Mexicostylus squamatus* Verhoeff. Adapted from Verhoeff, 1933.

The new genus *Mexicostylus*, established by Verhoeff to contain this species, is very close to *Trichorhina*, a group whose diagnostic characters and limits have not as yet been exactly determined. The

present form seems to be peculiar in the character of the small scale-like appendages covering the dorsal surface, which are described as leaf-like, and are figured as having a midrib with lateral veins.

The head, as usual in this group, is without lateral or median lobes or a frontal line; only three ocelli are pigmented. The antennae are moderately long, the terminal half light-colored, their surface with bristles and minute tubercles. The second article of the flagellum is three times as long as the first.

Various details of the mouth parts and pleopoda, uropoda, etc., are described by Verhoeff; these are in part shown in the illustrations. The legs have a partly undulated verrucose surface; the seventh legs of the male are without special peculiarities. The epimera of the abdominal segments 3 to 5 are well developed and nearly acute.

Color chiefly brown above, speckled with light spots which form a sieve-like pattern on the head. The epimera are lighter.

Length of male, 3.5 mm.; of female, 4 mm.

LOCALITY.—“Chilopa” (probably Chilapa), State of Guerrero, Mexico, in the humus of a mountain forest. Found with *Porcellionides pruinosus*.

Asellidae

Caecidotea californica (Miller), 1933

Figure 323

Asellus californicus MILLER, 1933, p. 97 (orig. descr.), Figs. 1-14.

Miller gives a lengthy description of this species and careful figures, but makes no comparison with other species and indicates no characters as especially diagnostic. As the figures reproduced here appear to show its most important characters, only a few details are quoted from the description.

Body loosely articulated, surface smooth; margins of segments fringed with hair.

Flagellum of first antennae with 8 segments; that of the second antennae with about 40 segments. The distal outer margin of the propodus of the last pair of legs bears a single plumose seta. Examination of a series of specimens indicates that the “proportionate lengths of the second antennae and uropods are functions of the age of the individuals,” and that the peduncle and endopod of the uropoda undergo with growth “greater elongation than the exopod which appears relatively short and almost rudimentary in the larger specimens.”

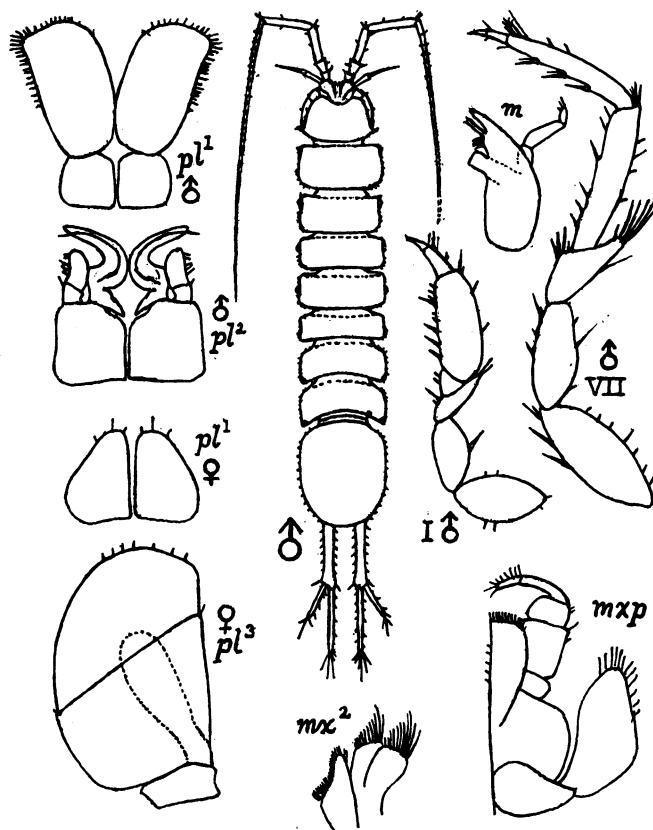


Fig. 323. *Caecidotea californica* (Miller). Adapted from Miller, 1933.

Color in alcohol creamy white.

Length of largest specimen (a male), 11 mm.

LOCALITY.—Fresh-water well near Kelseyville, Lake County, California.

Miller places this species in *Asellus* because he rejects *Caecidotea* as a genus. It belongs in *Caecidotea* if that group is given recognition.

Oniscidae
Porcellionides mulaiki, new species

As this work was about to be printed, specimens of an undescribed species were received from the extreme southern part of Texas, from Mr. S. Mulaik, for whom it is named.

It so closely resembles *Porcellionides virgatus* (Budde-Lund) that the illustrations given for that species would serve for it fairly well, save for the following details: the antennae are slenderer and have the first article of the flagellum noticeably longer than the terminal one in both sexes; the lateral lobes of the head, though similarly rounded, are rather wider and less prominent than in *virgatus*, and body surface is rather smoother, the transverse furrow on the thoracic segments being less well marked.

The coloration is similar in pattern but lighter, though the epistome and lower part of the forehead are conspicuously dark colored in contrast to most parts of the animal.

It appears to be a larger species. Length of largest female about 13 mm., of largest male, nearly 12 mm.

LOCALITIES.—Bird Island, Cameron County, Texas, ten specimens including the type (Cat. No. 7214, American Museum of Natural History), and Edinburgh, Hidalgo County, Texas, one specimen. Perhaps Arcangeli's record of *P. virgatus* from Uvalde, Texas, may really belong to this species.

Cirolanidae

Cirolana anops Creaser, 1936

Cirolana anops CREASER, 1936, Carnegie Inst. of Washington, Pub. No. 457, p. 117, Figs. 1-12.

A blind species closely related to *C. cubensis*, as its describer points out. Among the conspicuous differences are that it has a wider telson with its rear border gently rounded and lacking the spines which are conspicuous in *C. cubensis*; the branches of the uropoda are widened and rounded at the ends, and the front outline of the frontal lamina is more produced and narrowly rounded (in the figure almost pointed).

LOCALITIES.—Underground waters in several caves in northwestern Yucatan. Type locality, San Bulha Cave at Notul; also found in Santa Elena Cave, south of Talcha; San Isidro Cave, Salar Colony, Merida; Amil Cave on Tixcacal Hacienda, southeast of Merida. Type in museum of University of Michigan. Paratypes in U. S. National Museum.

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