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New Western Millipeds

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NEW WESTERN MILLIPEDS

By RALPH V. CHAMBERLIN

Family CAMBALIDAE

Genus MIMOLENE, new

Differing from *Nannolene*, which it much resembles in general appearance and structure, in having the gonopods of the male fully exposed, in having the coxal processes of the anterior pair contiguous at the middle line and decidedly surpassing the telopodite, and in having the anterior sternite short and proportionately broad.

GENOTYPE.—*Mimolene oregona*, new species.

Mimolene oregona, new species

Pl. 1, fig. 1

Marked by conspicuous, black bands across dorsum and part way down the sides, each band immediately in front of the black spot marking the repugnatorial gland; lower part of sides and the venter clear yellow. Head with a broad dark band between eyes and widening at middle much as in *Nannolene personifer*. Antennae with distal joint and distal ends of other joints dark, blackish. Legs clear yellow.

Antennae conspicuously clavate. Eyes of numerous seriate ocelli; e.g., 5, 5, 4, 3, 2, the series vertical.

Segments deeply constricted as in species of *Nannolene*. Collum not specially sculptured.

Gonopods of male directed caudad, appressed to body, and of form shown in figure. (Fig. 1.)

Number of segments, 41-42.

Diameter, 8 mm. and less.

LOCALITY—Oregon: Washington County. An adult male and female and a not fully mature male taken under bark of tree stump, April 19, 1941, by J. C. Chamberlin.

Genus ALAKENE, new

Resembling *Platydere* in its wholly smooth segments, these wholly lacking crests, but differing in being conspicuously constricted behind the head. Ocelli absent.

GENOTYPE.—*Alakene simplex*, new species.

Alakene simplex, new species

Pl. 1, fig. 2

Color light brown, entirely without any distinct spots or differently colored annuli. Legs yellow.

Antennae conspicuously clavate. No trace of ocelli.

Body distinctly constricted into a necklike region embracing several segments back of head and collum.

Segmental constrictions deep and apparently entirely without the transverse dorsal series of pit-like depressions described for *Platydere*.

The single preparation of the gonopods of male is in poor condition and the figure drawn must be used with some reservation as to details. It is believed sufficiently accurate for identification. (Fig. 2.)

Number of segments, mostly 52 to 54.

Diameter, 8 mm. and less.

LOCALITY—California: Tulare County, 5 miles northeast of Lemoncove, March 20, 1941, about 10 specimens; and 1 mile east of Hammond, March 20, one specimen. S. and D. Mulaik.

Nannolene dorothea, new species

Pl. 1, fig. 3

Light brown, with a series of small, darker spots along each side. In most specimens somewhat darker annuli evident, each running across dorsum between spots and less distinct down sides below spots; last tergite dusky. The head with a characteristic dark line between eyes, this ordinarily bent back at an angle at middle; back of this transverse line the vertex of head covered with a network of dark lines over a pale background, below the line the surface weakly dusky or purplish. Legs and antennae yellow.

Eyes composed mostly of from 12 to 21 ocelli; e.g., 6, 4, 2 to 8, 8, 4, 1.

Gonopods of male as drawn. (Fig. 3.)

Number of segments, 44-48.

Length up to about 13 mm.; width, mostly .8 mm. and less.

LOCALITIES.—California: Kernville, one male, March 18, Isabella, numerous specimens, March 18, Squaw Valley, March 23, about a dozen specimens; 1 mile east of Hammond, Tulare County, March 20, one specimen. S. and D. Mulaik.

A much less extensively pigmented form than *N. violacca*. It is named for Mrs. Dorothea Mulaik, one of the collectors.

Nannolene personifer, new species

Pl. 1, figs. 4 and 5

Similar in proportions and color to *N. dorothea* but the spots along the sides larger and darker, being typically black. On the head in place of the dark line between the eyes a band as broad as the eyes and angularly extended ventrad at the middle; enclosed in this band below its middle a pair of subcontiguous pale spots and at its lower (anterior) margin a transverse series of four light spots outlined.

Ocelli, 14 to 20; e.g., 7, 5, 2 and 7, 6, 4, 3.

Gonopods concealed. For details see Figs. 4 and 5.

Diameter of male holotype, .8 mm.; of male allotype, 1 mm.

LOCALITY.—California: Eldorado County, 9 miles north of Placerville. March 28, 1941. A male and female taken by S. and D. Mulaik.

Family POLYZONIIDAE

Bdellozonium sequoium, new species

Dorsum a dark, somewhat "Indian" red with a narrow yellow stripe along each lateral border. Ventral surface of keels and body proper pinkish white. Legs also whitish. Antennae dark, somewhat purplish.

Body widely, not strongly, convex above, about three times longer than broad. Anterior and posterior ends about equally obtusely rounded.

Ocelli completely covered in dorsal view by the collum, the anterior border of which projects freely over the head. Antennae in length less than once and half times the width of the collum; sixth article much the longest, the third next although not much exceeding the second.

Anterior margin of collum widely convex, the border free and upturned; caudal margin somewhat arcuate.

Segments, especially in middle region of body, with a deep mid-dorsal longitudinal impressed line and a series of finer impressed longitudinal lines on each side. Repugnatorial pore of ordinary segments widely removed from lateral margin and comparatively close to the segmental sulcus. Anal tergite with caudal margin evenly convex, not flattened or subtruncate as in *cerviculatum*.

Legs apparently very similar to those of *cerviculatum*.

Number of segments, 40.

Length, 9 mm.; width, 3 mm.

LOCALITY.—California: Tulare County, 12 miles northeast of Hammond. Elevation 4,000 feet. March 21, 1941. One adult female taken by S. and D. Mulaik.

Seemingly a considerably smaller form than *B. cerviculatum* Loomis, differing in having the light stripes along border of dorsum, in the larger, differently shaped collum which completely covers the ocelli from above, etc.

Family ATOPETHOLIDAE

Onychelus phanus, new species

Pl. 1, figs. 6 and 7

Color dark brown, a little lighter, less solid, in front of segmental sulcus than behind it. Legs and antennae brown.

Ocelli somewhat poorly defined, in a subcircular area, arranged, c.g., as follows: 1, 5, 6, 6, 5, 4, 3, 2.

Collum ending on each side in a narrow, distally rounded process which is bent a little caudad; without sulci except the sharply defined margining sulcus in front; process or wing extending below level of second tergite.

Ordinary segments appearing smooth, under the lens showing numerous fine punctae from which short, fine impressed lines extend.

Last tergite rounded behind as usual, exceeded by the valves. Valves forming a mesal groove where in contact, borders not elevated, surface finely punctate.

Gonopods of male as drawn. (Figs. 6 and 7.)

Number of segments in male holotype, 55.

Diameter of male holotype, 4.5 mm.

LOCALITY.—California: Kern County, 6 miles west of Freeman. Several specimens taken March 17, 1941, by S. and D. Mulaik.

In the structure of the gonopods close to *O. michelbacheri* Verhoeff, the types of which were taken at Walker's Pass, northern California. The posterior gonopod, however, is distally broader; and the telopodite of the anterior gonopod is much more strongly curved ectad in its apical portion. The number of segments is 55 as against 45.

Family PAEROMOPIDAE

Paeromopidae, Cook and Collins, Am. N. Y. Acad. Sci., 1895, vol. 9, p. 6.

Californiulidae, Verhoeff, Zool. Anzeiger, 1938, vol. 122, p. 144.

Paeromopus lysiopetalinus Karsch

Paeromopus lysiopetalinus Karsch, Zeitschr. f. ges. Naturwiss., 1881, vol. 54, p. 12.

Paeromopellus sphinx Verhoeff, Zool. Anzeiger, 1938, vol. 122, p. 125, figs. 8 and 9.

Nec *Paeromopus lysiopetalinus* Chamberlin, Ann. Ent. Soc. America, 1910, Vol. 3, p. 257, pl. 42, figs. 3-5, and pl. 43, figs. 1-3.

The holotype of Karsch's *P. lysiopetalinus* has been redescribed by Verhoeff under the name *Paeromopellus sphinx*. There is, of course, no justification in the rules of nomenclature for Verhoeff's procedure in renaming Karsch's genus and species. Accordingly, *Paeromopellus* falls as a synonym of *Paeromopus*, and the species *sphinx* as a synonym of *lysiopetalinus*.

Paeromopus pistus, new species

Pl. 1, figs. 8 and 9

Paeromopus lysioptalinus Chamberlin (not of Karsch), Ann. Ent. Soc. America, 1910, Vol. 3, p. 257, pl. 42, figs. 3-5, and pl. 43, figs. 1-3.

It is quite obvious from the figures of the gonopods of *lysioptalinus* given by Verhoeff, that the species illustrated by myself as *P. lysioptalinus* is not that species but a new one for which a name is here proposed. The figures of the gonopods of the male *P. pistus* here reproduced, (figs. 8 and 9) are from a specimen taken at Stanford University, the type locality, many years ago by C. F. Baker. This specimen has a diameter of 6 mm., thus agreeing with *P. eldoradus* in being notably smaller than *P. lysioptalinus*.

LOCALITIES—California: Stanford; Pacific Grove.

Paeromopus eldoradus, new species

Pl. 2, figs. 10 and 11

General color dark, nearly black, but the metazonite of each typical segment with caudal border bright ferruginous, or somewhat orange, the ferruginous band covering most of metazonite dorsally but narrowing down the side and absent below. Last scutum entirely dark. Head entirely dark but darkest over vertex. Collum dark brown.

Eyes transversely narrowly subelliptic, the end acute; ocelli in series from behind forward, e.g., as follows: 9, 8, 7, 3(4), the ocelli decreasing in size from first series to the last. Head bearing over entire surface short but very sparse setae.

Collum sparsely punctate with sparse, fine, erect setae much shorter than those of the head. Anterior border margined by a sulcus that extends to level of eye on each side. Caudal border crossed by deep longitudinal sulci which are longest below on each side and short above.

Segmental sulcus on ordinary segments sharply impressed and complete, moderately excurved at level of the pore which is contiguous with it. Pores beginning on the sixth segment. Metazonite throughout crossed over whole length by deeply impressed longitudinal sulci.

Anal tergite rounded behind, exceeded by the valves; surface not sulcate but under lens seen to be roughened with numerous fine, dense, pits and short impressed lines. Anal valves with borders not at all raised.

Readily distinguished from *P. lysioptalinus* in the form of the gonopods as hereing figured. (Figs. 10 and 11.)

Number of segments, 74-77.

Length of female allotype, about 120 mm.; diameter, 8.5 mm. The male holotype is considerably smaller, about 90 mm. long with its diameter only 6 mm.

LOCALITY.—California: Eldorado County, Coloma, March 28, 1941. One adult male (holotype) and female (allotype), and one not fully grown female.

A notably smaller species than *P. lysiopetalinus* Karsch, the holotype, the length of the male of which is 150 mm. as against 90 mm. for the present form.

Family PARAIULIDAE

Genus MULAIKIULUS, new

Posterior gonopods broad, laminate at base, distally dividing into three slender apically pointed branches, of which the most mesal is distally fringed. Coxal piece of anterior gonopods long, exceeding the telopodite, the latter rather slender, clavate.

GENOTYPE.—*Mulaikiulus stanleius*, new species.

Neither any of the three branches of the posterior gonopods nor the coxal piece of the anterior gonopods uncate as in *Ziniulus*.

Mulaikiulus stanleius, new species

Pl. 2, figs 12 and 13

Brown with a series of black spots along each side, appearing finely annulate to naked eye; above each spot and running nearly to middorsal line a narrow light band formed of more or less confluent light spots, the color behind this band deeper than in front of it; a less well defined series of light spots on side below spot, a larger light area at bottom of side. Head with brown band between eyes, this extended ventrad at middle and there enclosing two light spots. Legs brownish yellow, the antennae darker. Antero-ventral portion of stipes brown, elsewhere with a fine network of brown lines.

Ocelli in a triangular patch, each side moderately convex; thus, 1, 3, 4, 6, 6, 4, 3, 1, beginning with upper angle.

Last tergite with posterior portion triangular, the end narrowly rounded; projecting conspicuously beyond the anal valves, the free portion straight.

Number of segments, 66.

Length, about 17 mm.; diameter, 1 mm.

LOCALITY.—California: Tulare County, 12 miles northeast of Hammond. March 21, 1941; S. and D. Mulaik.

Spathiulus tribolus, new species

Pl. 2, figs. 14 and 16

A pale, dull yellowish form with a series of conspicuous brown to black spots along each side. Sometimes with a narrow brownish band across caudal border of each segment. Head with vertex yellow, com-

monly with network of darker lines; a broad brown band between eyes, this angularly extended down face and enclosing just below lower level of eyes a pair of light spots. Collum typically bordered both in front and behind with brown. Legs pale yellow. Antennae yellow or sometimes with brown incompletely covering the yellow.

Eyes rather narrowly triangular, with apex caudad; ocelli from above below arranged, e.g., thus: 9, 8, 7, 5, 4, 2.

Last tergite with caudal portion in dorsal view triangular, the apex moderately surpassing the anal valves.

First legs of male strongly crassate as usual.

Distinguished most clearly in details of the gonopods as represented in figs. 14, 15, and 16.

Length, up to about 24 mm.; diameter, up to 2 mm.

LOCALITY.—California: Tulare County, Sequoia Park, 12 miles northeast of Hammond. March 21, 1941. Ten specimens taken by the Mulaiks.

Family STRIARIIDAE

Genus AMPLARIA, new

Separated from *Striaria* in the possession of twelve crests on the collum instead of ten. Eyes reduced, ocelli typically 2 or 3.

GENOTYPE.—*Amplaria cutypa*, new species.

Also includes *A. nazinta* (Chamberlin), originally described under *Striaria*.

Amplaria eutypa, new species

Color brown, with three longitudinal dorsal pale stripes, one median and one on each side.

Eye represented by a small darkened area on each side in which only two ocelli are defined.

Collum curving gently upward at anterior border, its antero-lateral portion flaring so as partly to cover the ocelli. Lateral ends and corners widely rounded. With 12 longitudinal crests, these extending from caudal margin two-thirds or more the length of the plate, the border in front of their ends densely granular; the lowest keel on each side finer than the others, curved, with the concavity ventrad; one or more low, short ridges across antero-lateral border.

Prozonites of second and following segments densely, evenly areolate, the depressed areas polygonal and sharply defined.

Ventral keels present on all but the last few segments. Interval between the ventral crest and the next one above more than twice as great as the next interval above.

Length, about 8 mm.; width, 1.2 mm.

LOCALITY.—California: Eldorado County, 9 miles north of Placerville, March 28, 1941, two females of which one has lost its anterior

end; and in same county 2 miles south of Nashville, March 28, 1941, one specimen. S. and D. Mulaik collectors.

Differing from *A. nazinta* in its smaller size and in the longitudinal striping of the body.

Family CASEYIDAE

Caseya sequoia, new species

Pl. 2, figs. 17 and 18

Dorsum dark brown with a series of six light spots across posterior border of each tergite, one about base of each seta but the lowermost spot on each side double, and often the one above this also divided; side below middle pale excepting anterior border of each segment or with a series of confluent light spots leaving both borders dark. Legs light brown.

Eyes large, the ocelli in the male holotype arranged thus: 6, 6, 5, 3, 1.

Processes from coxae of third legs of the immature male rather short, subconical.

Ninth legs of a male apparently lacking moult of maturity as shown in fig. 18. In this male the two first pairs of legs are reduced in size.

Vulva of female holotype shown in fig. 17.

Length of male, immature, about 11 mm.; width, 1.2 mm. Width of female holotype, 1.9 mm.

LOCALITY.—California: Tulare County, Sequoia National Park, 12 miles northeast of Hammond. March 21 and 22, 1941. One male and three females taken by S. and D. Mulaik.

The dorsal spots on this form ordinarily do not break through the dark of the caudal border of the segment as they do, e.g., in *Placerna dorada* or when they do, the break is much narrower than typical for *dorada*.

Genus PLACERNA, new

In this genus the second and third legs have the last joint less slender, distally more blunt, than that of first and other legs, with setae denser and the claw reduced in size. Unlike *Zantona*, the coxa of third legs not or but little thickened and its laminate process broadening distad.

GENOTYPE.—*Placerna dorada*, new species.

Placerna dorada, new species

Pl. 2, figs. 19-21

Dorsum brown, with a series of six light spots across each segment, each of these spots typically open at caudal margin; the lowermost spot on each side may extend entirely across segment or it may be doubled or trebled. Below the middle of the side of each segment, a

series of confluent spots dominating the color of the lower part of sides. Legs with brown imperfectly covering yellow. Antennae more solid brown.

Third antennal article much the longest, the fourth and fifth not much differing from each other in length.

Ocelli, 5, 5, 5, 3, 1.

A peculiarity of the male of the species is the moderate reduction in size of the claws of the second and third legs, those of the first being normal. Processes from coxae of third legs large, lamellate, somewhat clavately or subcuneately expanding distad.

Readily distinguished from *C. heteropus*, etc., in the form of the ninth legs and the gonopods of the male. (See figs. 19, 20, and 21.)

LOCALITY.—California: Eldorado County, nine miles north of Placerville. March 28, 1941. One male and two females taken by S. and D. Mulaik.

Genus ZANTONA, new

Characterized especially by the great reduction in size of the second and third legs of the male, the first being of normal size; coxae of third legs relatively greatly enlarged and bearing a laminate, distally acuminate process. Coxae of seventh legs in male greatly swollen and produced conspicuously behind, its mesal face densely setose, the setae long; coxae of 10th legs also conspicuously but less strongly swollen. Ninth legs of male much as in *Caseya*, but the distal process broader, laminate.

GENOTYPE.—*Zantona douglasia*, new species.

Zantona douglasia, new species

Pl. 3, figs. 22-24

Dorsum dark brown, the sides lighter brown. There are the usual six light spots across each segment; of these the one adjacent to the middorsal line is smallest and lightest and is oblong; the other two spots are relatively large, duller in color and have the surface marked off into smaller areas by a network of dark lines. The usual band formed by confluent light spots on lower part of side of each segment. Antennae dark brown, the color solid. Legs with brown incompletely covering the yellow background as usual.

Ocelli 6, 6, 5, 4, 2. In the antennae the third article much the longest as usual, the fifth next and decidedly longer than the fourth; the sixth nearly twice the length of the seventh.

In the male, the coxa of seventh leg greatly swollen; produced behind into a conical, distally curved process. The tenth legs with coxa also swollen with a slender ventral process and distally clavate.

Processes of third legs large, geniculate or subuncate, the distal portion slender and cylindrical. Coxae of 4th to 6th legs compressed.

Gonopods of male as shown in fig. 22.

Ninth legs of male as drawn. (Figs. 23 and 24.)

Legth, about 15 mm.; diameter, 2 mm.

LOCALITY—Oregon: Douglas County, John Day Creek. November 18, 1939. One mature and one not fully mature male taken by J. C. Chamberlin.

Genus VASINGTONA, new

The first three and the tenth pairs of legs reduced in size. Coxae of third legs with large process. Coxae of seventh legs not at all enlarged and without processes. Coxae of tenth legs also not enlarged.

GENOTYPE.—*Vasingtona fasciata* (Chamberlin).

The genotype was originally described under *Cascya*.

Family CONOTYLIDAE

Genus BOLLMANELLA, new

Distinguished from *Conotyla* in the strong modification of the fourth joint of the third legs of the male, in the proximal position of the process of fourth joint of fourth legs, and the normal size of fifth legs with absence of process on its fourth joint. Legs 6 and 7 in male not crassate; leg 10 more slender than normal.

GENOTYPE.—*Bollmanella oregona*, new species.

***Bollmanella oregona*, new species**

Dorsum brown, the anterior part of prozonite darkest, a band in depression between that and metazonite palest; in anterior region especially a paler longitudinal stripe adjacent to keels.

Sides paler than dorsum.

Ocelli in series from behind forward thus: 6, 5, 3, a total of 14.

In the male the first two pairs of legs are notably reduced in size as usual; the third legs especially crassate, their fourth joint thickest and excavated at middle of mesal surface; the fifth legs less thickened, their fourth joint with a slender, subconical process on mesal side toward proximal end; fifth, sixth, and seventh legs of normal size. Tenth legs more slender than the normal, eleventh intermediate.

Ninth legs of male in general structure as in *Conotyla*. Illustration of gonopods of the single adult male thus far secured deferred.

Length, about 7-7.5 mm.

LOCALITY.—Oregon: Douglas County, John Day Creek. One male taken November 19, 1939 by J. C. Chamberlin.

Genus *COOKELLA*, new

While only the female of the genotype is known, differences indicated by Cook seem now to make it impossible to keep the species in *Conotyla*. In particular the presence of a well-developed triangular promentum, would seem sufficient to necessitate a new genus for its reception.

GENOTYPE.—*Cookella leibergeri* (Cook)

The genotype was originally described under *Conotyla*. Ann. N. Y. Acad. of Sciences, 1895, Vol. 9, p. 77, pl. 6, figs. 102-104.)

Family CHELODESMIDAE

Genus, *PAIMOKIA*, new

Differing from *Wamokia* in having three terminal processes on each gonopod of the male, two of these being acutely pointed and one blunt.

GENOTYPE.—*Paimokia modestior*, new species.

***Paimokia modestior*, new species**

Pl. 3, fig. 25

Brown above, with keels not differently colored or with a small, somewhat orange area in front of posterior corners of keels. Legs yellow, somewhat finely lined and speckled with dark. Antennae yellow.

Keels nearly of same general form as in *Wamokia placera*.

Gonopods as drawn. (Plg. 25.)

Width, 4.5 mm.; length, about 25 mm.

LOCALITY.—California: Fresno County, 4 to 7 miles north of Badger. March 23, 1941. One male and three females taken by S. and D. Mulaik.

***Paimokia scotia*, new species**

Pl. 3, fig. 26

The dorsum shining black with the keels lemon yellow; lacking light cross-bands. Legs brown when in full color.

The species is distinct in the details of the gonopods of male, which are shown in fig. 26.

Length, about 35 mm.; width, 6.25 mm.

LOCALITY.—California: Santa Cruz County, 12 miles south of Los Gatos. March 20, 1941. Two adult males and one immature specimen taken by S. and D. Mulaik.

Paimokia maculifer, new species

Characterized at once among other known species in possessing a middorsal series of large, orange colored spots, one spot being present on each metazonite. Keels also orange. Remaining portion of dorsum very dark purple or purple black, in some lights giving a somewhat olivaceous reflection. The dark color down the sides of the prozonites and below keels on metazonites, thinning out into yellow below. Collum trimaculate. Head with a network of dark lines above, these denser lower down, with clypeal region yellow. Last tergite with apical portion orange. Legs and antenna yellow.

Length, about 38 mm.; width, 6 mm.

LOCALITY—California: Tulare County, 9 miles north of Woodlake, "around large boulders in meadow." One female taken March 22, 1941. S. and D. Mulaik.

Since the male of this species is not known, it is referred to *Paimokia* with some doubt; its agreement in general features, however, makes this position probable.

Genus **WAMOKIA**, new

In general structure close to *Isaphe* but differing in having the posterior angles of most of the keels acutely produced instead of rounded. Telopodite of gonopods with two branches but the more dorsal of these broader, more lamellate than in *Isaphe*.

GENOTYPE.—*Wamokia placera*, new species.

Wamokia placera, new species

Pl. 3, fig. 27

General color of the dorsum brown with the prozonites paler than the metazonites. In the type there is a distinct median dorsal dark line. Caudolateral portion of keels of a somewhat orange color. Head pale with a network of darker lines above. Antennae and legs yellow.

In the keels the anterior and lateral margins form an even curve back to posterior angle which is acutely produced.

The distinctive form of the gonopods of the male is shown in the accompanying figure. (Plg. 27.)

Length, about 28 mm.; width, 5 mm.

LOCALITY.—California: Eldorado County, nine miles north of Placerville. Two males taken March 28, 1941, by S. and D. Mulaik.

Family XYSTODESMIDAE

Xystocheir sequoia, new species

Pl. 3, fig. 28

When in full color the dorsum is dusky brown with outer part of keels and a broad connecting band over caudal portion of each metazonite salmon colored, this band in its middle part occupying most of length of metazonite. Apical portion of cauda also salmon colored. Collum with salmon colored posterior band extended forward in an angle at middle; a narrow dark band across anterior border. Entire head pale. Antennae and legs yellow.

Distinct from other known species in the details of the gonopods of the male which are figured. (Fig. 28.)

Width, up to 7 mm.

LOCALITY.—California. Tulare County, Sequoia National Park, 10 miles east of Hammond. March 20, 1941. Two males and one female taken by S. and D. Mulaik.

Genus MOTYXIA, new

Differing from *Xystocheir* primarily in the gonopods of the male. In place of the five spines on the telopodite in *Xystocheir*, the present genus shows distally two slender spines and a stouter branch which is expanded into a concave leaf-like calx at its free end. All keels with posterior corners rounded and not produced except on last few segments.

GENOTYPE.—*Motyxia kerna*, new species.

Motyxia kerna, new species

Pl. 3, fig. 29

Dorsum reddish brown, ordinarily darker in an area on each side of each metazonite over most of keel and base of segment immediately mesad thereof; also a median dorsal dark line; borders of keels reddish brown, in some suggesting a brick red. Legs brown. Antennae pale brown or yellowish.

Keels of second segment bent conspicuously forward, with posterior and lateral margins forming a single wide and even curve; keels of third and fourth segments also bent forward but less strongly so. Anterior angles of keels of these three segments subacute, that of second more rounded than those of the two others. In keels of middle segment both anterior and posterior corners widely rounded. In last few segments posterior corners of keels moderately produced caudal but well rounded.

Gonopods as drawn. (Fig. 29.)

Diameter, 6 mm.

LOCALITY.—California: Kern County, 12 miles northeast of Hammond. March 21, 1941 One male. S. and D. Mulaik

Motyxia pior, new species

Dorsum nearly black, of somewhat olive cast, the prozonites with two large pale spots narrowly separated at median line. Keels lemon yellow over all borders, leaving a darker median area. Collum with lateral and caudal borders yellow, the anterior border black. Antennae yellow, the legs dusky or somewhat olivaceous yellow.

Keels all with both anterior and posterior corners rounded, not extended caudad except on last few segments, but in no case with posterior angles acute.

Length, about 32 mm.; width, 7 mm.

LOCALITY.—California: Tulare County, 12 miles northwest of Hammond. March 21, 1941. One male taken by S. and D. Mulaik.

Family SPHAEROTRICHOPIDAE

Scytonotus simplex, new species

Pl. 3, fig. 30

Dorsum in general brown, the prozonites paler; metazonites also pales, yellowish on lateral margin of keels and just beneath them. Legs proximally yellowish, the distal one or two articles darker. Antennae brown, becoming somewhat paler proximally.

Aside from being a much smaller form, this species is very different from *S. bergrothi*, known from Washington state, in the details of the gonopods as shown in fig. 30.

Length of male holotype, 11 mm.

LOCALITY.—Oregon: Douglas County, Day's Creek. November 18, 1939. Two males and two females taken by J. C. Chamberlin.

Family RHISCOSOMIDIDAE

Rhiscosomides josephi, new species

This form, unfortunately represented at present by a single female, seems to differ considerably from *R. meineri*, the genotype, in color which is in general brown above instead of chestnut; three light spots on each side of each metazonite, one on outer end of keel, one some distance above base of keel, and one toward middorsal line; a continuous pale median longitudinal dorsal line; caudal rim of each metazonite a deeper brown. Collum pale except keels which are brown. Head brown above and in front, pale below. Antennae brown and legs pale yellow or straw-colored. Sides, prozonites throughout, and venter also pale yellowish.

Metazonites densely evenly granular, with granules produced above into acutely tipped narrowly conical processes, but the granules of prozonites smooth.

Ocelli 7 in three series, 3, 3, 1—as against 5 in *meineri*.

This species would seem to be somewhat larger than *meineri*, the width for which is given as 1.1 mm. as against 1.25 mm. in *josephi*.

LOCALITY.—Oregon: Douglas County, John Day Creek. One female taken November 18, 1941, by Joseph C. Chamberlin.

Plate 1.

- Fig. 1. *Mimolene oregona*, n. sp. Left gonopods of male, subventral view.
- Fig. 2. *Alakene simplex*, n. sp. Left anterior gonopod of male, anterior view.
- Fig. 3. *Nannolene dorothea*, n. sp. Left anterior gonopod of male, anterior view.
- Fig. 4. *Nannolene personifer*, n. sp. Right gonopods of male, mesal view.
- Fig. 5. The same, anterior view.
- Fig. 6. *Onychelus phanus*, n. sp. Left anterior gonopod with sternite, anterior view.
- Fig. 7. The same. Right posterior gonopod, caudal view.
- Fig. 8. *Paeromopus pistus*, n. sp. Posterior gonopods of male, cephalic aspect.
- Fig. 9. The same. Anterior gonopods of male, cephalic aspect.

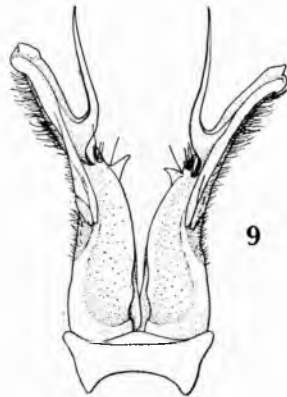
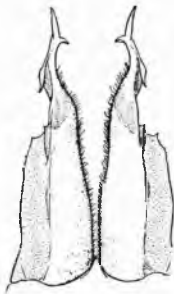
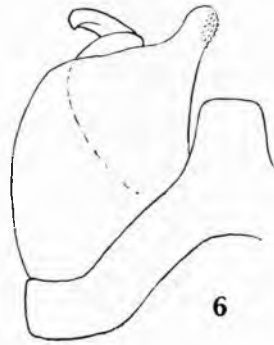
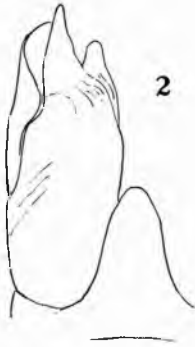
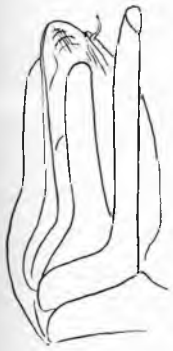


Plate 2.

- Fig. 10. *Paermopus eldoradus*, n. su. Right posterior gonopod of male, caudal aspect.
- Fig. 11. The same. Right anterior gonopod of male, caudal aspect.
- Fig. 12. *Mulaikiulus stanleius*, n. sp. Left anterior gonopod of male, cephalic aspect.
- Fig. 13. The same. Right posterior gonopod of male, caudal aspect.
- Fig. 14. *Spathiulus tribolus*, n. sp. Posterior gonopod of male, mesal aspect.
- Fig. 15. The same. Right anterior gonopod of male, cephalic view.
- Fig. 16. The same. Right anterior gonopod and inner lamina, mesal view.
- Fig. 17. *Caseya sequoia*, n. sp. Vulva of female, lateral aspect.
- Fig. 18. The same. Ninth left leg of a not fully nature male, caudal view.
- Fig. 19. *Placerna dorada*, n. sp. Right ninth leg of male, mesal view.
- Fig. 20. The same. Right ninth leg of male, caudal view.
- Fig. 21. The same. Left gonopod of male, ectal view.

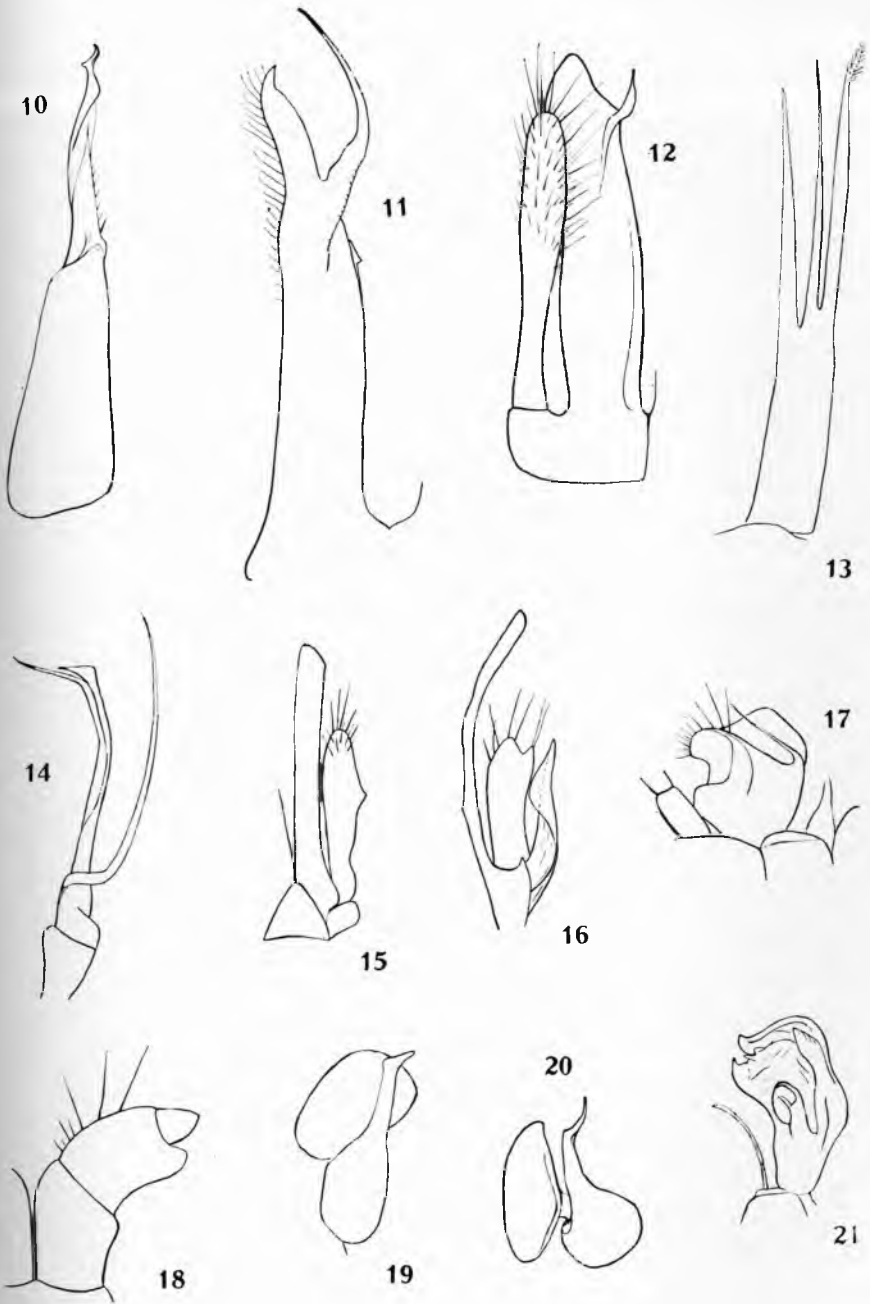


Plate 3.

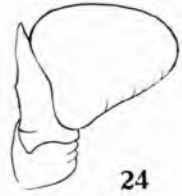
- Fig. 22. *Zantona douglasia*, n. sp. Left gonopod of male base of seventh leg, ectal aspect.
- Fig. 23. The same. Ninth left leg of male, view somewhat ventrad of mesal.
- Fig. 24. The same. The same leg in ventro-ectal aspect.
- Fig. 25. *Paimokia modestior*, n. sp. Left gonopod of male, subventral aspect.
- Fig. 26. *Paimokia scotia*, n. sp. Left gonopod of male, anterior view.
- Fig. 27. *Wamokia placera*, n. sp. Left gonopod of male, ventral view.
- Fig. 28. *Xystocheir sequoia*, n. sp. Right gonopod of male, caudal view.
- Fig. 29. *Motyxia kerna*, n. sp. Left gonopod of male, subventral view.
- Fig. 30. *Scytonotus simplex*, n. sp. Right gonopod of male, ventral view.



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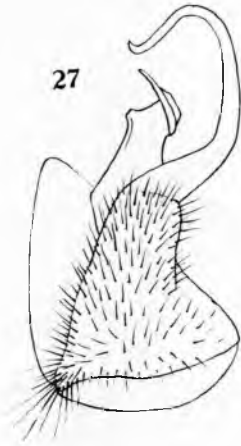
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