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New Southern Millipeds

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NEW SOUTHERN MILLIPEDS

By RALPH V. CHAMBERLIN

The twenty-six new species of diplopods herein named and diagnosed were found chiefly in material from Missouri, Arkansas, Louisiana and neighboring states collected in 1935 and 1936 by Mr. Leslie Hubricht of the Missouri Botanical Gardens and now through his courtesy included in the author's collection. A few are based upon a collection from Louisiana submitted to me for study by Mr. H. B. Chase of New Orleans. In addition, descriptions of several other new species noted while making comparisons are included.

Family CAMBALIDAE

Cambala arkansana, new species

Pl. 1, figs. 2 and 3.

This is a small dark brown species in which the prozonites are paler, more grayish, giving an annulate appearance. Legs brown. The dorsal crests begin on the second tergite and terminate on the penult as in most species, of somewhat ferruginous tinge. Ocelli 7 on each side in a single series as usual.

The distinctive features of the gonopods are shown in figs. 2 and 3.

Diameter, 1.8 mm.

LOCALITY—Arkansas: Randolph County, one mile north of Poca-hontas, one male taken April 10, 1936.

Cambala ochra, new species

Pl. 1, fig. 1.

This is a small yellow or yellowish brown form like *C. minor* Bollman.

It differs from the latter species, as typified by Indiana specimens, clearly in the details of the gonopods of the male which are represented in fig. 7.

Width, 2 mm.

LOCALITY—Louisiana: Darlington, one male taken November 10, 1939.

Family PSEUDOCLEIDIDAE

Cleidogona mississippiana, new species

Pl. 1, figs. 4 to 6.

In size about the same as *C. major* Cook, but obviously different from this and other species, in the form of gonopods and ninth legs of male as shown in figs. 4, 5, and 6.

Length, up to 20 mm. (♂ holotype).

LOCALITY—Mississippi: eight miles east of Vicksburg, August 25, 1940, four specimens, including the male holotype; Roosevelt State Park, August 20, 1940, a male and female; 14 miles west of Forest, August 26, 1940, one male. All specimens were collected by S. and D. Mulaik.

Family XYSTODESMIDAE

Zinaria aberrans, new species

Pl. I, fig. 7

Dorsum in general more or less chocolate colored, the prozonites, keels, and anterior border of metazonites paler.

Metazonites with mostly 3 transverse series of small tubercles which are widely separated.

This species is very distinct from previously known forms in the long and slender distal prongs of the gonopods of male as represented in fig. 7.

Length, about 30 mm.; width, 6 mm.

LOCALITY—Louisiana: Caddo Parish, 5 miles northwest of Shreveport, one male taken under log, April 13, 1936, by Leslie Hubricht.

Pachydesmus kisatchinsis, new species

Pl. I, fig. 8.

The general color above is light testaceous brown as common in the genus, the keels paler.

Best distinguished by the form of the male gonopods, the slender branches of which are sinuous, with the ectal one acutely pointed and stouter mesal one terminating in a deltoid lamina. See further fig. 8.

Width, 8 mm.

LOCALITY—Louisiana: Kisatchi, one male taken March 29, 1937.

Apparently nearest in form of gonopods to *P. louisianus* (Chamberlin), known from Covington, Louisiana.

Pachydesmus simulans, new species

Pl. I, figs. 9 to 11.

The color of the long preserved type above is brown, with the keels yellow. Legs and antennae yellow.

A species apparently very close to *P. retrorsus*, known from Knox County, Tennessee. It seems distinct, however, in the details of the gonopods, although these are of the same type. The two branches are more slender, and relatively longer and closer together. The distal

prongs of the outer branch form an acute angle with each other instead of a very obtuse one or a semicircle, and the bent portion at end of inner branch is shorter. See further figs. 9, 10, and 11.

Length, 65 mm.; width, 14 mm.

LOCALITY—Louisiana: 4 miles north of Gonzales, August 31, 1940, one male taken by D. and S. Mulaik.

***Sigmoria stenogon*, new species**

Pl. 2, fig. 12

The preserved specimens have the tergites anteriorly brown with the caudal half and the keels yellow, the yellow bands being thus unusually broad.

The gonopods, in striking contrast to those of *S. brachygon*, the types which are also from the Pisgah Forest, are exceptionally narrow for the genus. Other features are as shown in fig. 12.

Length of male, about 38 mm.; width, 9 mm. Length of female allotype, 48 mm.; width, 11 mm.

LOCALITY—North Carolina: Pisgah Forest, Bennett Gap Road, July 21, 1916. Male holotype and two females taken by M. Winslow "under rotten wood"; also one female taken on Chubb Gap Road, July 22.

***Brachoria ethotela*, new species**

Pl. 2, fig. 13.

In life the dorsum black, with the laterocaudal half of keel salmon colored. After long preservation the black in the dorsum has largely faded to brown, and the salmon color of the keels to yellow.

This species is readily distinguishable from others previously known in the form of the male gonopods, the apical part of which is especially characteristic. See fig. 13.

Width, 9 mm.

LOCALITY—Virginia: Marian, August 19, 1939, one male, R. V. Chamberlin, coll.

***Eurymerodesmus newtonus*, new species**

Pl. fig. 14.

Metazonites above light brown, in front of somewhat reddish tinge, the prozontics pale yellow to nearly white, the body thus appearing conspicuously banded. Thickened lateral border of keels yellow, sometimes, at least, of brick red tinge. Legs yellow.

This species is readily distinguished by the gonopods of the male, the long curved or subuncate, tip being characteristic. (Fig. 14).

Diameter, 4.2 mm.

LOCALITY—Arkansas: Newton County, 1.2 miles south of Jasper, April 29, 1936. one male (holotype) and three females.

Eurymerodesmus oliphantus, new species

Pl. 2, fig. 15.

Brown above, keels with a narrow lateral border of red, and metazonites with caudal transverse line paler but in types not conspicuously so. Sides of prozonites entirely yellow, those of metazonites with brown area under keels narrowing to a point ventrad. Legs yellow, darker, more brownish distally.

Apical portion of telopodite of gonopod of male as shown in fig. 15. The claw-like tip is distinctive.

Width of male holotype, 4 mm.; of female allotype, 4.2 mm.

LOCALITY—Arkansas: Jackson County, 15 miles southwest of Oliphant, April 10, 1936, a male (holotype), and female (allotype) taken by Leslie Hubricht.

Eurymerodesmus creolus, new species

Pl. 2, fig. 16.

This is a much larger form than *E. louisianae*. Dorsum bluish black, with lateral borders of keels and a narrow connecting stripe or line along caudal border of metazonite apparently brick red, but this color largely faded in the preserved type. Legs yellow.

In the male the sternal processes of the sixth segment are subconical, discrete, and pilose, similar ones being present on the 7th and 4th and 5th segments elsewhere reduced. The gonopods relatively small with the characteristic features of apical portion as shown in fig. 16.

Length, about 35 mm.; width, 6 mm.

LOCALITY—Louisiana: Caddo Parish, 5 miles northwest of Shreveport, one male taken under a log, April 13, 1936 by Leslie Hubricht.

Eurymerodesmus louisianae, new species

Pl. 2, fig. 17.

This species differs, e.g., from *E. mundus* and *E. birdi* from Oklahoma, in lacking sternal processes on the sixth segment of the male or these obsolete, and it may otherwise be distinguished by the details in shape of gonopod, arrangement of its setae, etc., as shown in fig. 17.

Dorsum dusky brown or in part of a somewhat bluish tinge; keels brick red; a series of brick red spots confluent into a band over caudal border of metazonites and in front of this band, across middle part of zonite a series of similarly colored separated spots, often four in number. Legs yellow.

Width, 3 mm.

LOCALITY—Louisiana: Natchitoches Parish, 2 miles south of Saline, a male and female taken April 12, 1936, by Leslie Hubricht.

This is a considerably smaller form than that which I regard as *E. hispidipes*. (Wood), which also occurs in Louisiana.

Genus PARESMUS, new

Agreeing in general with *Eurymerodcsmus* excepting in the gonopods of male. These differ in being stouter throughout and in being distally notched instead of acutely acuminate. Typically the telopodite is strongly geniculate toward base.

GENOTYPE—*Paresmus parvicus*, new species.

Paresmus parvicus, new species

Pl. 2, figs. 18 and 19.

Dorsum brown with a broad longitudinal paler stripe geminate by a dark line, and the keels yellowish. Sides yellow and legs yellowish brown.

The characteristic features of the gonopods of the male are shown in figs. 18 and 19.

Breadth, 4.5 mm.

LOCALITY—Louisiana: Lincoln and Jackson Par. line, 1.5 miles north of Clay. Several specimens taken under logs by Leslie Hubricht, on April 12, 1936.

Family EURYURIDAE

Genus AUTURUS, new

A genus of *Euryridae* related to *Euryurus* in having the keels longer than the intervening portion of the zonite and in having the metazonites dorsally smooth and shining. Lateral border of keels thickened, smooth except for tooth at anterior corner, with the pores opening laterally. Last tergite with caudal margin evenly convex, corners rounded and sides subparallel. Differing from *Euryurus* especially in the form of the gonopods of the male. These are broad and simple, and present a bent blade or hook at distal end, this curving distoectad from inner side of end. Commonly a rounded lamina ectad of this hook.

GENOTYPE—*Auturus phanus*, new species.

In addition to the five species described below, *Euryurus evides* Bollman and *E. louisiana* Chamberlin from Creston, Louisiana, belong in this genus.

Auturus phanus, new species

Pl. 2, fig. 20.

The general color of the body above is yellow or in part light orange, with the legs a lighter, whitish yellow.

Posterior processes of 18th and 19th tergites rounded. Posterior corners of preceding tergite moderately produced and a little acute. Last tergite broad, its sides nearly parallel and caudal margin evenly convex.

The gonopods of male as shown in fig. 20.

Length, about 16 mm.; width, 3.8 mm.

LOCALITY—Louisiana: Greenburg, November 19, 1940, two males and February 5, 1939, one male.

***Auturus mimetes*, new species**

Plate 3, fig. 21.

Conspicuously different in coloration from *A. phanus*, the dorsum being dark with caudal area of keels and a spot a middle of metazonite orange; prozonites whitish each side of middle. Legs yellowish.

Keels in general as in *phanus*. Posterior keels in dorsal view show an indentation a level of pore. Last tergite with caudal margin straight between the rounded corners, or sometimes a little incurved at middle.

The gonopods with distal hook relatively much smaller than in *phanus*. See fig. 21.

Length, about 28 mm.; width, 4.5 mm.

LOCALITY—Missouri: Jefferson County, 1 mile northwest of Selma, May 10, 1936, 5 specimens taken by Leslie Hubricht.

***Auturus dixianus*, new species**

Resembling *A. mimetes* in general color pattern but the light markings typically yellow. The median light spot relatively larger, semicircular, and connected with light areas of keels by a narrow light band running along caudal border of metazonite, as in *mimetes*. The progonites more or less uniform in color, not projecting, two pale areas separated by a median dark area as usual in *mimetes*.

Caudal margin of last tergite evenly convex, not widely truncate or mesally in curved as in *mimetes*.

Typically somewhat more slender than the latter species, the width being 4 mm.

LOCALITY—Louisiana: Covington, one female taken December 24, 1940.

***Auturus georgianus*, new species**

Pl. 3, fig. 22.

The types are broken and otherwise not well preserved, but suffice to show distinctive characters in gonopods and color pattern. The keels are lighter colored as in *mimetes*, but differing from latter and *dixianus* in not having a distinct median dorsal spot on the metazonites, the latter with a pale band along caudal border which, however, widens over middle region. Last tergite with sides considerably converging; posterior corners widely rounded and the caudal margin between straight for a short distance at middle.

Gonopods of male most like those of *mimetes*, but the terminal not-setigerous section longer and the outer distal lamina shorter relatively to the hook, as shown in fig. 22.

Width, 4 mm.

LOCALITY—Georgia: 13 miles west of Savannah, "on old log in vicinity of the Bamboo Garden." Several specimens collected by H. L. Sanford, February 8, 1922.

***Auturus scotius*, new species**

Plate 3, fig. 23.

The color above is black with orange colored keels and a median spot of same color connected with keels by a narrow caudal band as usual. Prozonites without paler areas above. Sides also dark beneath keels. Legs yellow. Last tergite orange except over basal area.

Processes of 18th keels acute, those of the 19th distally rounded. Last tergite with sides moderately converging caudad, corners widely rounded with caudal margin straight at middle.

Gonopods as shown in fig. 23.

Width, 4 mm.

LOCALITY—Louisiana: Darlington, February 5, 1940, four specimens.

***Spirostrephon creolum*, new species**

Pl. 3, figs. 24 and 25.

Distinguished in the details of the gonopod of the male. In these the outer branch at distal end of telopodite is broad, more strongly expanded than in *lactarium*, thus differing from *texense* and *jonesi* in which this branch is acute. The middle branch is furcate as in *lactarium*, but the outer branch is broad and lamellar, and the inner branch is strongly geniculate at base, not evenly curved, expanded at end. See further figs. 24 and 25.

Length, about 38 mm.; width, 2.4 mm.

LOCALITY—Louisiana: Covington, December 24, 1939, male holotype and two male paratypes and female allotype and paratypes; Darlington, November 10, 1939, two males and a female; Greenburg, one female apparently this species, October 12, 1939.

Family POLYDESMIDAE

***Polydesmus pronomeutes*, new species**

Pl. 3, fig. 29.

A small form in which the serrations of keels are sharp and distinct and the tubercles of posterior row especially elevated and ridge- or keel-like, sharply defined and more or less pointing caudad. In the form of the gonopods of the same type as the European *P. coriaceus*

Por., but obviously different in details as shown in fig. 29. It is also close to *P. hortus* W. & S., known from Ohio and Pennsylvania.

Length, to about 14 mm.; width, 2 mm.

LOCALITY—Colorado; Fort Collins, several specimens taken under boards in a garden October 23, 1941, by Miss Palmer and transmitted by Professor Maurice T. James of the Colorado State College.

***Polydesmus neoterus*, new species**

Plate 4, figs. 30 and 31.

The types are above dark or somewhat dusky brown.

The serrations on the lateral margins of the keels are minute, the margins appearing nearly smooth, three serrations on each keel in front of the caudal angle.

The gonopods of the male as shown in Fig. 30.

Female appendages large and conspicuous, brown on ventral surface, of form shown in fig. 31.

Length, about 10.5 mm.; width, 2 mm.

LOCALITY—Louisiana: New Orleans, a male (holotype) and two females taken April 17, 1936, by L. Hubricht.

In its small size and the general form of the male gonopods much resembling *P. minor* Bollman, but distinct in details of gonopods. In these the apical portion in *neoterus* is geniculate and lacks setae, whereas in *minor* it is as shown in fig. 31.

***Polydesmus echinogon*, new species**

Pl. 4, fig. 33.

This is a large form much in appearance like *P. serratus* with which it has been confused in the past. In the preserved types the keels are decidedly paler in color than the dark mid-dorsal region. It is characterized by the minute, almost obliterated serrations of the keels, but is set apart most distinctly by the gonopods of the male, the spines and teeth of which are peculiar in number and form as shown in fig. 33.

Length, to about 26 mm.; width, to 4.8 mm.

LOCALITY—Pennsylvania: Shawnese, four specimens taken September 23, 1905 by F. C. Paulmier.

***Polydesmus natchitoches*, new species**

Pl. 4, figs. 34 and 35

In general size and appearance much like *P. scopus*. Marginal serrations of keels much more pronounced than in *P. neoterus*, two serrations behind the anterior corner on the non-poriferous tergites, three on the poriferous.

Characterized by the structure of the male gonopod as shown in figs. 34 and 35.

Length, 16-20 mm.; maximum width, 4 mm.

LOCALITY—*Louisiana*: Natchitoches Par., 2 miles south of Saline, April 12, 1936, four specimens; also 4 miles north of Chestnut, April 14, 1936, one male.

***Polydesmus euthetus*, new species**

Pl. 4, fig. 36.

A dark brown form of small size, in which the legs are as dark as the dorsum. Serrations of keels minute and of the usual number and arrangement. Swelling at base of keel large, embracing most of length; tubercular areas of two intervening posterior series clearly defined, the areas in front of sulcus less sharply marked. Surface of tubercles smooth.

The characteristic features of the male gonopods are as shown in fig. 36.

Length, 12 mm.; width, 2 mm.

LOCALITY—*Missouri*: St. Louis County, Buder Park, 1 mile south-east of Valley Park, March 15, 1936, a male and female collected by Leslie Hubricht.

***Polydesmus paroicus*, new species**

Pl. 4, figs. 37 and 38

A light horn brown form of medium size in which the teeth of the keels are sharp and conspicuous. Pore-bearing keels with the usual three teeth or serrations, the others with two.

Most readily distinguished by the peculiarities of the male gonopods as shown in figs. 37 and 38.

Length, to 17 mm.; width, to 2.7 mm.

LOCALITY—*Louisiana*: Lincoln and Jackson Par. line, 1.5 miles north of Clay, 5 specimens taken April 12, 1936, by Leslie Hubricht.

Plate 1

- Fig. 1. *Cambala ochra*, sp. n. Lateral view of left gonopods of male.
- Fig. 2. *Cambala arkansana*, sp. n. Left posterior gonopod, lateral view.
- Fig. 3. The same. Left anterior gonopod with sternum, anterior view.
- Fig. 4. *Cleidogona mississippiana*, sp. n. Gonopods of male, ventral view.
- Fig. 5. The same. Gonopods of male, lateral view.
- Fig. 6. The same. Ninth leg of male, caudal aspect.
- Fig. 7. *Zinaria aberrans*, sp. n. Right gonopod of male, subventral view.
- Fig. 8. *Pachydesmus kisachinsis*, sp. n. Left gonopod of male, ventral view.
- Fig. 9. *Pachydesmus simulans*, sp. n. Right gonopod viewed at nearly right angles to plane of prongs.
- Fig. 10. The same. Apical portion of outer branch of right gonopod viewed at nearly right angles to plane of prongs.
- Fig. 11. The same. Apical portion of inner branch of right male gonopod, viewed at right angles to principal surface.

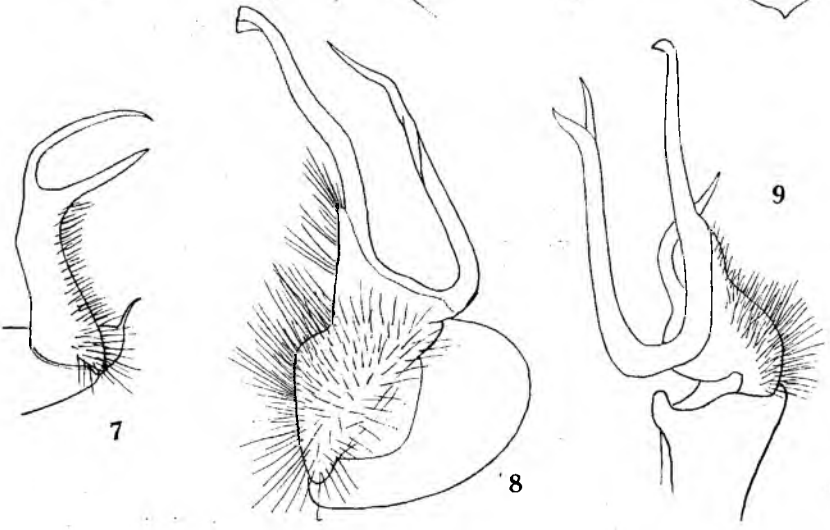
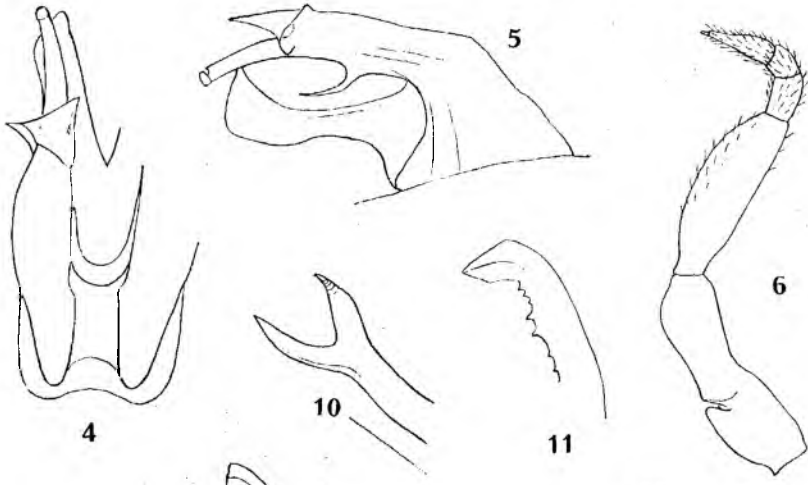
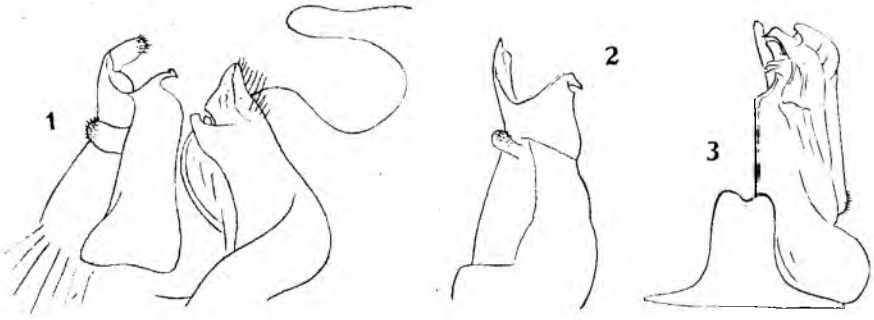


Plate 2

- Fig. 12. *Sigmorina stenogon*, sp. n. Left gonopod of male, ventral view.
- Fig. 13. *Brachoria ethotela*, sp. n. Left gonopod of male, caudoventral view.
- Fig. 14. *Eurymerodesmus newtonus*, sp. n. Apical part of gonopod of male, subanterior view.
- Fig. 15. *Eurymerodesmus oliphantus*, sp. n. Apical part of gonopod of male, anterolateral view.
- Fig. 16. *Eurymerodesmus creolus*, sp. n. Apical part of gonopod of male.
- Fig. 17. *Eurymerodesmus louisianae*, sp. n. Gonopod of male, upper part of telpodite, subectal view.
- Fig. 18. *Paresmus paroicus*, sp. n. Right gonopod of male, ventral aspect.
- Fig. 19. The same. Apical portion of telopodite of male gonopod, sub-lateral view.
- Fig. 20. *Auturus phanus*, sp. n. Left gonopod of male in situ, ventral view.

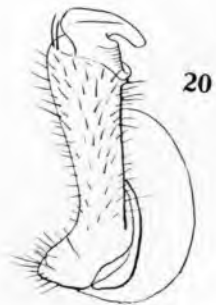
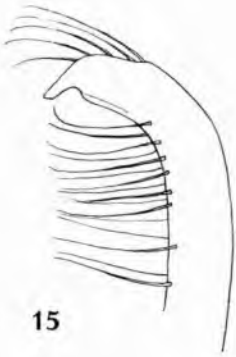
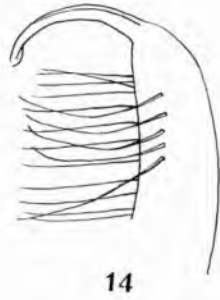
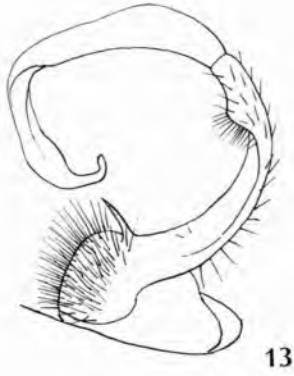
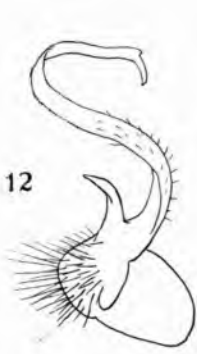


Plate 3

- Fig. 21. *Auturus mimetes*, sp. n. Left gonopod of male subventral view.
- Fig. 22. *Auturus georgianus*, sp. n. Left gonopod of male, subventral view.
- Fig. 23. *Auturus scotius*, sp. n. Left gonopod of male, ventral view.
- Fig. 24. *Spirostrephon creolum*, sp. n. Left gonopod of male, distal portion, caudal view.
- Fig. 25. The same. Distal view of telopodite of right gonopod.
- Fig. 26. *Spirostrephon lactarium* (Say). Distal portion of telopodite of left gonopod, caudal view.
- Fig. 27. The same. Distal view of telopodite of right gonopod of male.
- Fig. 28. *Spirostrephon texense* Loomis. Right gonopod, distal portion, caudal view.
- Fig. 29. *Polydesmus pronomentes*, sp. n. Left gonopod of male, antero-mesal view.

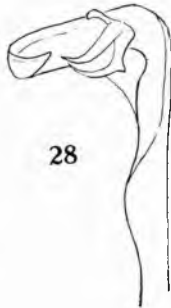
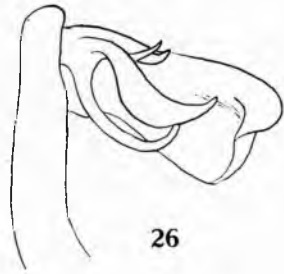
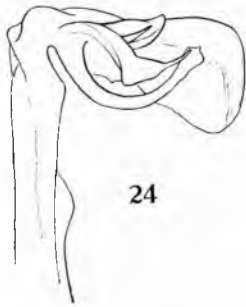
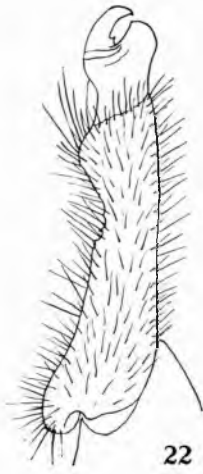
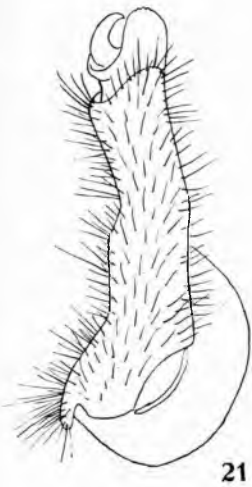


Plate 4

- Fig. 30. *Polydesmus neoterus*, sp. n. Left gonopod of male, mesal view.
- Fig. 31. The same. Right female appendage of second segment, ectal view.
- Fig. 32. *Polydesmus minor* Bollman. Tip of left gonopod of male, mesal view. (Typical specimen, Little Rock, Arkansas.)
- Fig. 33. *Polydesmus echinogon*, sp. n. Right gonopod of male, mesal view.
- Fig. 34. *Polydesmus natchitoches*, sp. n. Right gonopod of male, mesal view.
- Fig. 35. The same. Distal view of gonopod of male.
- Fig. 36. *Polydesmus euthetus*, sp. n. Right gonopod of male, mesal view.
- Fig. 37. *Polydesmus paroicus*, sp. n. Right gonopod of male, mesal view.
- Fig. 38. The same, Left gonopod, distal view.

