NEW AND KNOWN MILLIPEDS FROM FOUR SOUTHERN STATES[1]

H. F. Loomis[2]
5355 S.W. 92 Street,
Miami, Florida 33156

Abstract

Descriptions and illustrations are given for four new species: *Cleidogona cyclipes* and *Dicellarius sternolobus*, from Alabama; *Docodesmus cooki*, from Tennessee; and *Eurymerodesmus hamatilis*, from Texas. Structural characters and new localities are given for *Abacion tessalatum creolum* (Chamberlin) and *Pseudopolydesmus bidens* Loomis.

The millipeds reported here came from Alabama, Florida, Tennessee, and Texas, with four species of different genera proposed as new, one being the smallest and one the largest of its genus. Of particular interest is a species that extends the range of its tropical family far to the north and well into the southeastern United States. Also noteworthy are supplementary structural details and extension of range of two established species.

The holotypes have been deposited in the U. S. National Museum myriapod collection and representative specimens of all species have been placed in the Florida State Collection of Arthropods, in Gainesville.

Abacion tesselatum creolum (Chamberlin)

Spirostrephon creolum Chamberlin, 1942, p. 9. Type locality: Covington, St. Tammany Parish, La.

Fig. 1

Two males, 1 female, 1 young, collected by H. F. Loomis, in northern Florida, probably Gadsden or Leon County, May 1931, between Dothan, Alabama, and Tallahassee.

Chamberlin's original description of *creolum* was restricted to body dimensions and to characters of the gonopods. His Fig. 24 is satisfactory but the structures in Fig. 25 are not easily identified. Supplemental characters are given below.

Structural notes: Specimens all shorter than given by Chamberlin, length being about 28 mm; number of segments 53, 54, and 55 for mature specimens. Ocelli 54-59, in a symmetrical triangle. Antennae with joints 2 and 3 of equal length, subequal joints 4 and 5 next longest with joint 5 thicker near apex than any preceding it but exceeded by joint 6. Males with transition to full number of dorsal crests occurring on segment 13 instead of 12 as in female and as usual for the genus. Apex of gonopod shown in Fig. 1, the principal blade appearing much foreshortened. Male

---

[1]Contribution No. 152, Entomology Section, Division of Plant Industry, Florida Department of Agriculture.

[2]Research Associate, Florida State Collection of Arthropods, Division of Plant Industry, Florida Department of Agriculture.

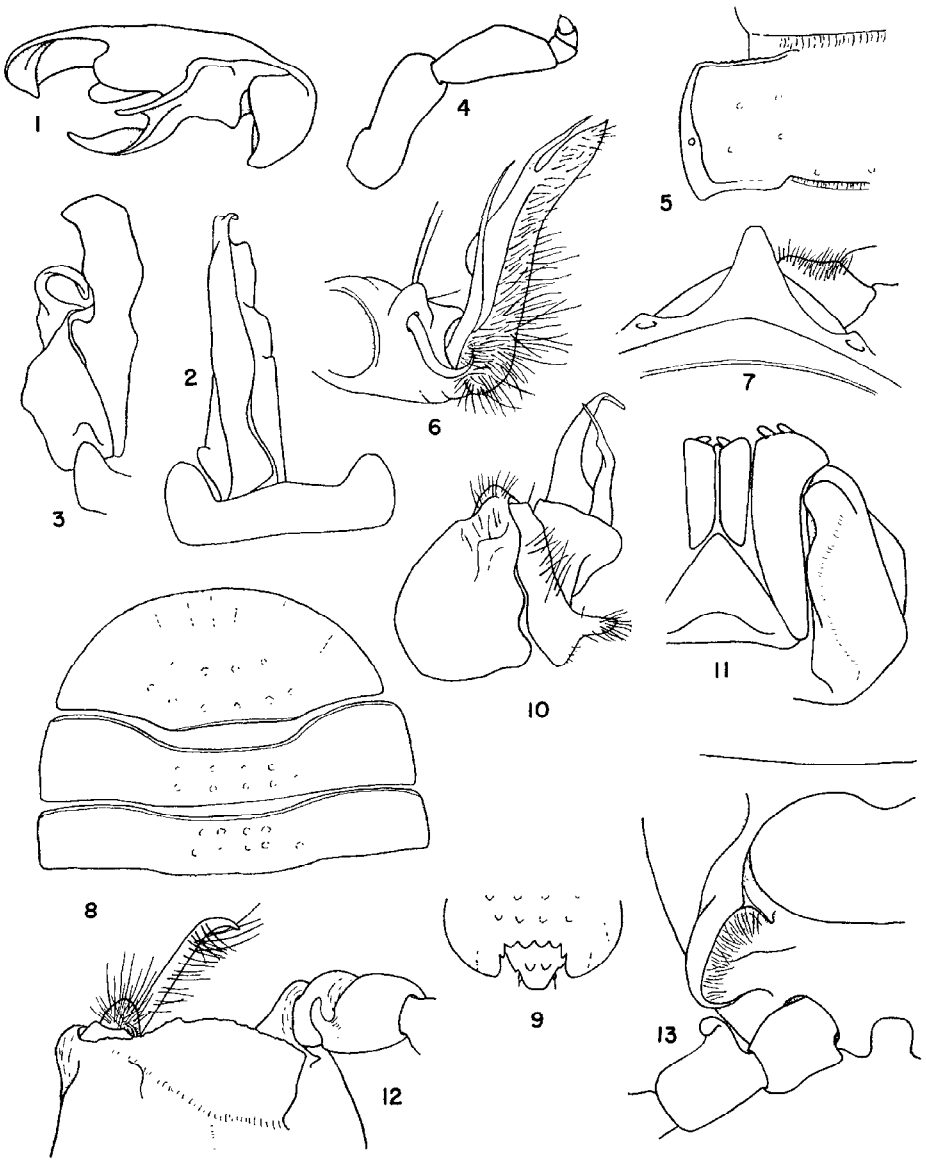

Fig. 1. *Abacion tesselatum creolum* (Chamberlin). Apex of right gonopod, vertical view. Fig. 2-4. *Cleidogona cyclipes,* new species. 2. Left anterior gonopod, anterior view. 3. Same, lateral view. 4. Male leg 9, posterior view. Fig. 5-7. *Dicellarius sternolobus,* new species. 5. Left side of segment 10, dorsal view. 6. Left gonopod, mesal view. 7. Fourth sternum and coxa of right leg, anterior view. Fig. 8-10. *Docodesmus cooki,* new species. 8. Anterior end of body, dorsal view. 9. Segments 19 and 20, dorsal view. 10. Right gonopod, posterior view. Fig. 11-13. *Eurymerodesmus hamatilis,* new species. 11. Part of gnathochilarium and mandibulary stipes, ventral view. 12. Lower side of segment 6, gonopod, coxa and joint 2 of ninth leg, lateral view. 13. Right half of segment 6, gonopodial opening, pleural lobe, sternum, and two basal joints of ninth leg, ventral view.

legs 3-7 and 9-11 or 12 with velutinous pad beneath most or all of outer joint.

Cleidogona cyclipes, new species

Fig. 2-4

Two dried males, one the holotype, Alexander City, Tallapoosa Co., Alabama, 27-31 October 1944, collector unnamed.

Diagnosis: Not only is this the smallest member of the genus thus far known but it is further distinguished by the more strongly curved posterior branch of the anterior gonopods.

Description: Specimens colorless, length 9-10 mm, width 1 mm.

Triangular eye patch composed of 26-28 ocelli.

Anterior gonopods not closely resembling those of any other species (Fig. 2-3); anterior division of each slender and quite simple in front view, still simpler but thicker in side view; posterior division with terminal portion slender, strongly curved forward and upward in more than a half circle toward the body; sternum large, its median portion unusually wide. Ninth legs (Fig. 4) conforming in general pattern to genus but the three outer joints together much shorter than in other species, the terminal claw minute.

Pregenital legs unmodified. Tenth legs with pore opening from middle of ventral face of each coxa, a prominent tubercle beyond it on posterior face at apical fourth. Sternal peg of twelfth legs long and conical.

Dicellarius sternolobus, new species

Fig. 5-7

Holotype male and one immature, dried and broken, Alexander City, Tallapoosa Co., Alabama, 27-31 October 1944, collector unnamed.

Diagnosis: Largest species of the genus and further distinguished in the male by the sternal lobe between legs 3, 4, and 6, as well as by the numerous subspinose setae on coxae of legs 3-7 and 9.

Description: Body large but broken, width of segments as follows: 1, 7.4 mm; 6, 8.7 mm; 9 and 10, 8.2 mm; 16, 8.0 mm; 18, 6.0 mm.

Head with vertigial sulcus finely impressed, extending forward to opposite upper level of antennal sockets, its anterior end simple.

Segment 1 with anterior margin evenly rounded from near outer limits which are rather sharply rounded; posterior margin broadly but not deeply emarginate across median third. Segments 2 and 3 with posterior corner of keels rounded, somewhat angular on 4, increasingly angular thereafter. Anterior raised rim of fourth keels continuing inward onto metazonite and meeting posterior declivity of prozonite; rim of fifth keels almost meeting declivity but on succeeding keels not extending onto metazonites. Keels of midbody segments (Fig. 5) with anterior margin thinly elevated and inconspicuously serrate from segment 5 or 6-16; surface of principal keels with 1 to 5 tiny nodules; metazonites behind midbody with a series of 15-20 similar nodules more or less evident near back margin, fewer

nodules on anterior segments; interzonal furrow distinctly and evenly concave across dorsum; supplementary posterior margin rather long.

Last segment, in vertical view, with sides long-emarginate to the setiferous apex. Anal scale large, almost evenly rounded behind, only a minute terminal apiculation present. Valves coarsely and almost vertically wrinkled in front, the wrinkles shorter and more nearly horizontal toward apex. Legs with coxae smooth; fourth to last pair of legs with a strong ventrodistal spine on second joint.

Gonopods as in Fig. 6; opening in segment oval except for a broad supplementary emargination in front; posterior margin more elevated in advance of ninth coxae than at middle. Sternum of fourth male legs raised into a high conic lobe (Fig. 7) with a median furrow on its posterior face; a much smaller lobe on third sternum, and an intermediate one on sixth sternum; anterior sternum of segments 8 and 9 with a low rounded nodule at middle; similar nodules on both sterna of segments 10-18. Coxae, and to some extent second joint, of legs 3-7 and 9 much more densely beset with subspinose setae on ventral face than on outer joints or other legs.

KEY TO THE SPECIES OF *Dicellarius* CHAMBERLIN

1. Sterna between male legs 3, 4, and 6 with an elevated lobe; main branch of gonopod setose to apex on mesal surface ..... *sternolobus* new species
   Anterior sterna of males not lobed, main branch of gonopod glabrous on apical fourth 2
2. Body of small size, not over 25 mm long—*okefenokensis* Chemberlin
   Body at least 30 mm long 3
3. Gonopods bifurcate for over half their length ..... *bimaculatus* (McNeill)
   Gonopods bifurcate for less than a third of their length ..... *lamellidens* (Chamberlin)

Docodesmus cooki, new species

Fig. 8-10

In a jar of Tennessee millipeds collected by O. F. Cook was a vial containing a male of *Euryurus erythropygus* (Brandt), many paratype specimens of *Cambala cristula* Loomis, and the holotype male and another male of this new species, labelled Etowah, Tennessee, 1 November 1929, O. F. Cook. The presence of the three species associated in the vial might be considered an accidental mixing were it not known with what care Dr. Cook prepared and labelled his collections, both botanical and zoological. It is nearly impossible to believe that he ever would mix two obviously temperate zone species and one he would have recognized as a member of a large West Indian genus he originally named.

If future collecting verifies *cooki* as a member of our temperate fauna it will exemplify one of the most startling distributional peculiarities in American Diplopoda, extending a species of the tropical family Chytodesmidae far into the United States with its nearest relatives in New Providence Island (Bahamas) and Cuba.

It may seem strange that specimens of such a species have not been found in intermediate localities. However, the living habits of most millipeds render collection of all species in an area so much more tedious and difficult than in most other arthropod groups that this has been accomplished in few areas of the United States and still fewer elsewhere in this hemisphere.

Diagnosis: One of the larger and flatter species, with dorsal sculpturing most poorly developed; anterior margin of segment 1 and outer margin of keels continuous or nearly so, the crenulations typical of other species at most only faintly evident; gonopods appear somewhat suggestive of those of *D. griseus* Loomis of the Dominican Republic.

Description: Both specimens 15 mm long, 3.5 mm wide; almost parallel-sided to near posterior end; keels broad and nearly horizontal, approaching level of the moderately convex dorsum which has the large tubercles poorly defined and not centered in obvious quadrate areas; marginal areas along front of segment 1 and outer portion of keels set off by scarcely evident channels, outer ends of the areas forming very weak crenulations, if any.

Vertex of head slightly roughened; median furrow not strongly impressed, a small rounded swelling adjacent to it on either side near midpoint; frontal area less roughened, dull in contrast to the shining and somewhat inflated clypeus.

Segment 1 considerably more than twice as broad as long (Fig. 8); Outer margin of keel of segment 2 half again as long as that of segment 3; most keels with outer margin nearly straight, seldom noticeably convex. Segments with a continuous raised rim across front margin of keels and metazonite. Segments 19 and 20 shown in Fig. 9.

Anal valves quite strongly inflated; inner margins sharply elevated, as high as thick. Preanal scale broadly triangular; a long, slender, seta-bearing tubercle surpassing margin either side of angular apex.

Gonopod shown in Fig. 10; the structure immediately below the two terminal branches is highly chitinized and dark brown in contrast to other parts of the gonopod. Sterna in front of gonopods narrow and without tubercles. Coxae of legs 2 and 4 thickened, the former each with about a dozen long scattered setae, the latter with only several long setae but a low rounded swelling on the anteroventral surface of each coxa is densely set with much shorter setae.

Key to the species of *Docodesmus* Cook

1. Body less than four times as long as broad, dorsal surface densely and irregularly set with small, distinct tubercles ..... *robustus* Loomis
   Body 4-5 times as long as broad, dorsal tubercles fewer and more definitely arranged 2
2. Lateral keels of midbody strongly raised above the horizontal ..... *alifer* Loomis
   Lateral keels of midbody horizontal or descending 3
3. Anterior raised rim of metazonites confined to keels, not crossing middorsum ..... *semiseptus* Loomis
   Anterior raised rim of metazonites continuous across middorsum .. 4

4. Posterior margin of segment 1 nearly straight from outer angles across dorsum ..... *parvior* Chamberlin
   Posterior margin of segment 1 oblique either side of dorsum 5
5. Males with anterior sternum of segment 8 with a pair of setose tubercles ..... *vincenti* (Pocock)
   Males with anterior sternum of segment 8 not tuberculate 6
6. Body small, 5-7 mm long ..... *sculpturatus* Loomis
   Body larger, at least 10 mm long 7
7. Size large, 16-19 mm long ..... *haitiensis* Chamberlin
   Size intermediate, 10-15 mm long 8
8. Anterior crenulations of segment 1 and outer margin of keels, the channels that separate them, tubercles and quadrangular areas of dorsal surfaces very indistinct ..... *cooki* new species
   Crenulations of margins and dorsal sculpturing at least moderately well developed 9
9. Segment 2 considerably wider in front than segment 1 ..... *angustus* Loomis
   Segment 2 little if any wider than segment 1 10
10. Dorsal surfaces lacking small secondary tubercles, coxae of fourth male legs with a setose swelling ..... *griseus* Loomis
    Dorsal surfaces with secondary tubercles, coxae of fourth male legs lacking a swelling 11
11. Lateral keels nearly horizontal ..... *grenadae* Chamberlin
    Lateral keels definitely descending 12
12. Head with vertex strongly inflated, separated from front by a distinct channel ..... *trinidadensis* Chamberlin
    Vertex little inflated, continuous with front ..... *cubensis* Loomis

Eurymerodesmus hamatilis, new species

Fig. 11-13

Holotype male, 2 other males, 2 females, and several young, Jackson Hill Marina, Sam Rayburn Reservation, about 8 mi. N of Zavala, Angelina Co., Texas, 23 April 1967, J. C. Loomis, coll.

Diagnosis: Probably most closely related to *E. hispidipes* (Wood), as redescribed and illustrated by Causey (1950), but differing in the less setose legs, shape of pleural lobes of segment 7 of males, and in the curved tubercle on second joint of male legs 7 and 9, a character not reported for any other species.

Description: Holotype 34 mm long, 5 mm wide; females narrower than males and considerably more convex, with narrower keels projecting from higher on sides, their outer margins nearly opposite midbody. Surface of segments strongly shining, color bleached in preservative.

Groove in vertex of head deep and extending between antennae; stipes of gnathochilarium broadened just below apex in both sexes (Fig. 11); lobe at anterior corner of male mandibulary stipes large, rounded at apex, not triangular.

Outer margin of keels considerably rounded, even near caudal end of body; posterior angles larger and more acute in males, especially on segments 16 and 17 where they are strongly produced.

Gonopods long, slender, only slightly bent at apex (Fig. 12). Male legs 7 and 9 with fingerlike tubercle curving cephaloventrad from anterior side of joint 2 near base (Fig. 12-13). Legs moderately beset with fine setae ventrally, much fewer and shorter than in *E. mundus* Chamberlin, or probably than in *E. hispidipes*; female legs not noticeably setose; claws of males with bulbous swelling at base on anterior half of body only. Sterna of male legs 4 and 5 have a low, distinct, conical tubercle each side; somewhat larger, more definite tubercles between sixth legs; surface each side of seventh sternum raised into a broad, subrectangular, strongly hispid elevation; sternum between ninth legs deeply depressed at middle. Pleural lobe of segment 7 large, oblique, sharply angular behind (Fig. 12), not setose exteriorly but quite densely so in the strongly cupped interior portion behind the partition that extends to near the posterolateral edge of the gonopodial opening (Fig. 13).

Female cyphopods transverse, simple, vertically suboval, meeting along their inner basal halves in a straight line where the vertical openings are opposed to each other and not visible until cyphopods are separated; anterior basal face of each cyphopod strongly convex, shining, and somewhat setose mesally; distal portion thinner, flattened, and ending in a thin margin.

Pseudopolydesmus bidens Loomis

Pseudopolydesmus bidens Loomis, 1959, p. 161. Type locality: Between Kinder and LeBlanc, Allen Parish, La.

Three males and three females were examined from Tivoli, Refugio Co., Texas, 24 Nov. 1911. A male specific character not mentioned in the original description is the strongly hispid sternal tubercle adjacent to each coxa beginning with fourth legs, continuing through seventh legs, and present between legs 10-14 or 15.

Literature Cited

Chamberlin, R. V. 1942. New southern millipeds. Bull. Univ. Utah 32(8): 3-19.

Causey, N. B. 1950. Five new Arkansas millipeds of the genera *Eurymerodesmus* and *Paresmus* (Xystodesmidae). Ohio J. Sci. 50(6): 267-272.

Loomis, H. F. 1959. Millipeds collected enroute from Florida to San Antonio, Texas, and vicinity. J. Washington Acad. Sci. 49(5): 157-163.