



9-29-1951

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Recommended Citation

Chamberlin, Ralph V. (1951) "On eight new southern millipeds," *Great Basin Naturalist*: Vol. 11 : No. 1 , Article 3.
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ON EIGHT NEW SOUTHERN MILLIPEDS

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The new millipeds described in the present paper were detected in the course of a study of a collection made by Hugh Hanson, now of the Arizona State College at Tempe, chiefly in June and July of 1947. With the exception of the type of *Pseudotremia hansonii*, which was taken at Pineville, Ky, the specimens were all taken near Gatlinburg, Tenn., in the Smoky Mts. I wish here to express my thanks to Mr. Hanson for the privilege of examining his interesting collection and for his patience in awaiting a delayed report on it.

Family PARAIULIDAE

UROBLANIULUS **EXUL** Chamberlin, new species

General color dark brown, without definite annuli or other markings, but each tergite becoming darker toward its caudal margin; last tergite and anal valves nearly black. Head dark above, with a pair of light spots between antennae; paler on lower part of face. Antennae nearly black. Legs colorless.

Stipes of mandibles in the male only moderately produced at distal corner.

Collum with anterolateral corner widely rounded; a single straight sulcus just above margining sulcus on each side.

Tergites smooth and shining above, only minutely punctate. Segmental sulcus sharply impressed, not excurved at level of the repugnatorial pore which is well removed from it.

Form of cauda as shown in fig. 1.

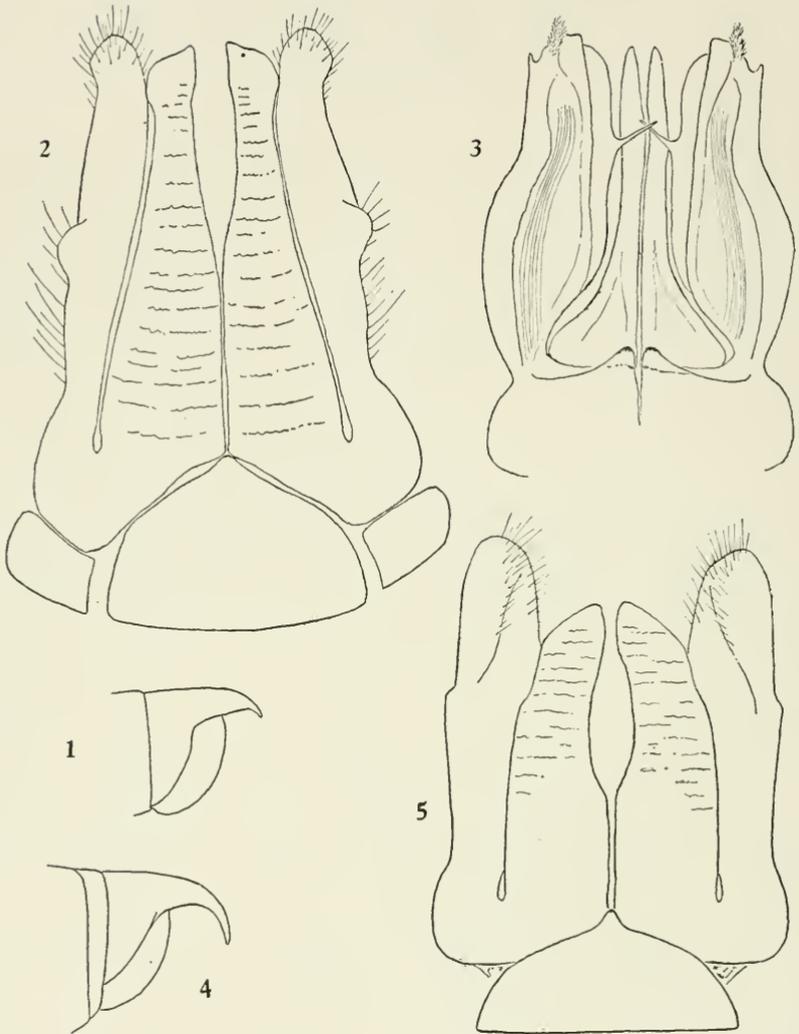
The features of the gonopods are shown in figs. 2 and 3.

Diameter of male holotype, 1.8 mm.

LOCALITY: Tenn.: Gatlinburg Cove, July 22, 1948.

A paratype taken at the same place on June 13, 1947, is lighter in color than above given for the holotype and shows a series of black spots along the sides over the repugnatorial glands and some cross-stripping above.

This species, and the closely related *fumans* (Chamb.) occurring in the same region, differ from *canadensis*, the generotype, super-



- Fig. 1. *Uroblaniulus exul*, n. sp. Anal tergite viewed from the side.
 Fig. 2. The same. Anterior gonopods, cephalic aspect.
 Fig. 3. Posterior gonopods, caudal aspect.
 Fig. 4. *Uroblaniulus dixinus*, n. sp. Anal tergite, lateral view.
 Fig. 5. The same. Anterior gonopods, caudal aspect.

ficially in the less strongly uncate cauda. In the gonopods they differ from that species in the longer coxites of the anterior pair and in the much longer, more spine-like process from the mesal margin of the principal branch of the posterior pair.

UROBLANIULUS DIXINUS Chamberlin, new species

Differing from *fumans* and *exul*, the two other species of the genus known to occur in the Smoky Mt. area, in the larger, more strongly unicate cauda, as represented in fig. 4, which may be contrasted with fig. 1, representing the cauda of *exul*, to which that of *fumans* is similar. It also differs from those species in the shorter, proportionately broader coxal plates of the anterior gonopods and in the broader distal ends of the telopodites.

Anterior gonopods of form shown in fig. 5.

The type specimen of this species is strongly annulate, there being across dorsum of each tergite a blackish stripe behind the sulcus, this stripe narrowing and fading out down each side and above leaving a light colored caudal border; across the dorsum in front of the sulcus a dark band enclosing light spots. Sides light. Legs dusky over a yellowish background. Antennae black. Last tergite and anal valves black.

Diameter, 1.8 mm.

LOCALITY: Tenn.: Gatlinburg. July 2, 1947.

Genus TENIULUS Chamberlin, new

Characterized by having the mesal blade of the posterior gonopods partly sheathed by the major branch, with its free end normally resting on a pilose lobe from the mesal margin of the principal branch on the opposite, ectal, side of which typically shows a retrorse process or barb. Associated with each gonopod on its mesal side are two strongly setiferous processes of which the posterior is the longer, the setae very long. Coxal plates of anterior gonopods distally acuminate and typically exceeding the telopodites in length. Cauda produced and more or less unicate as in *Uroblaniulus*.

GENEROTYPE: *Teniulus parvior* Chamberlain, new species.

The genus includes also *T. setosior*, described below.

TENIULUS SETOSIOR Chamberlin, new species

In coloration this is normally a strongly annulate form, showing apale caudal border on each tergite in front of which is a brown to chestnut annulus; in front of the sulcus across dorsum a blackish band enclosing a series of light dots. Last tergite and anal valves black. Antennae usually nearly black. Legs brown or dusky over a yellowish background. Head with the usual black areas between

eyes and extending down between antennae where it encloses a pair of rather large light spots.

The stipes of mandibles are shown in fig. 6.

From the closely related *T. parvior* readily distinguished in having the cauda more strongly uncate, this near its middle being bent down in the vertical direction as shown in fig. 7.

Gonopods as represented in figs. 8 and 9. In the anterior pair it will be noted that the coxites are more slender and more prolonged than in *parvior*.

This is a slender form in which the male is about 1.6 mm. in diameter, the female 1.8-1.9 mm.

LOCALITY: Tenn.: Gatlinburg.

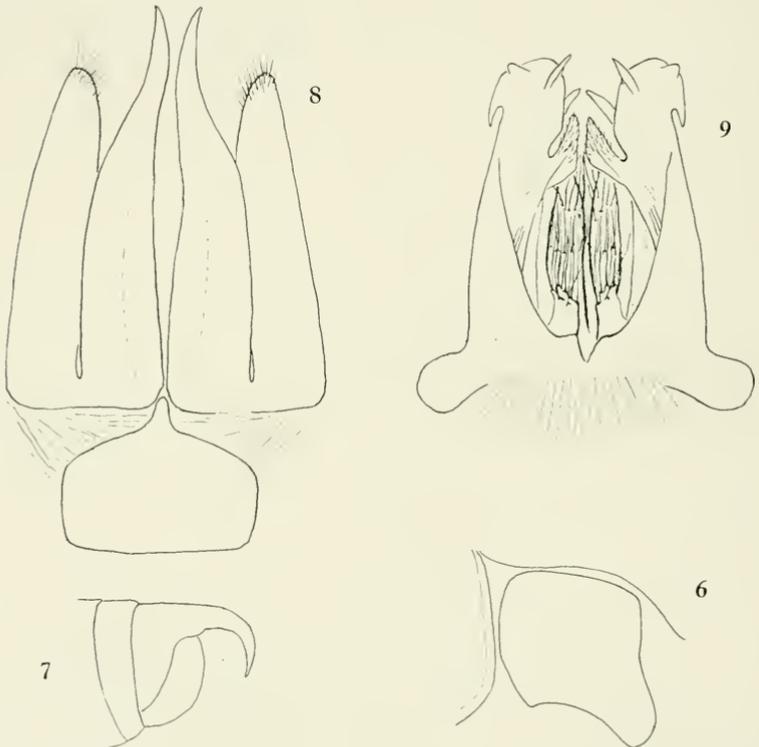


Fig. 6. *Teniulus setosior*, n. sp. Stripes of right manible, lateral view.
 Fig. 7. The same. Anal tergite, lateral view.
 Fig. 8. The same. Anterior gonopods, cephalic aspect.
 Fig. 9. The same. Posterior gonopods, caudal aspect.

The male holotype was taken July 27, 1947 in the oak-chestnut area. Three females were taken in "grassy bald" on July 2, 1947.

TENIULUS PARVIOR Chamberlin, new species

Color pattern nearly as in *setosior*. From that species readily distinguishable by its smaller size and the form of the cauda, this being straight over most of its length and bent down only toward the distal end as shown in fig. 10.

Gonopods as represented in figs. 11 and 12.

Diameter, 1 to 1.5 mm.

LOCALITY: Tenn.: Gatlinburg.

About twenty specimens, partly immature and mostly females, taken June 21, 1947 in "grassy bald", also three specimens, including the male holotype, taken June 18, 1947 in "spruce-fir."

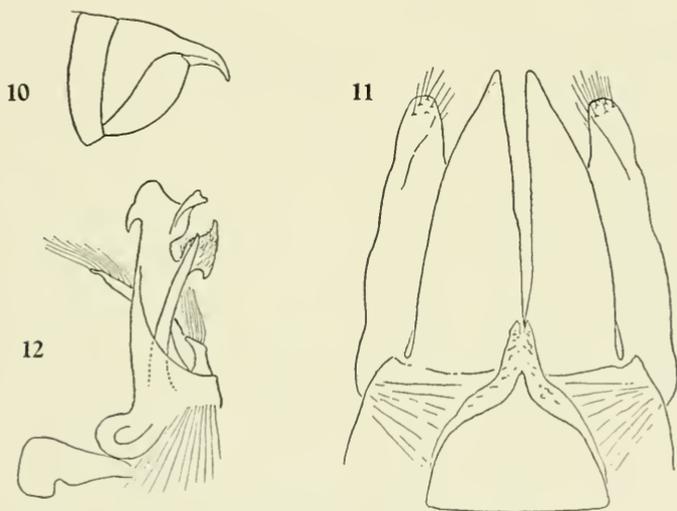


Fig. 10. *Teniulus parvior*, n. sp. Anal tergite, lateral view.
 Fig. 11. The same. Anterior gonopods, cephalic aspect.
 Fig. 12. Left posterior gonopod, cephalic aspect.

Genus **SHOSHONIULUS** Chamberlin, new

Differing from the related *Uroblaniulus* and *Teniulus* in the large bent telopodites of the anterior gonopods and especially in the posterior gonopods which apparently lack setiferous lobes and the anterior branches of which meet at the mesal line.

GENEROTYPE: *Sailus atlantus* Chamberlin

In addition to *Shoshoniulus idahoanus*, *Sailus atlantus*, would seem to conform to this genus.

Family CONOTYLIDAE

TRICHOPETALUM MONTIS Chamberlin, new species

Of a dilute yellowish color, the legs colorless.

Ocelli black, forming a lunate patch; typically 9 in number, arranged in two series, with six in the upper row and three in the lower. Antennae with first four joints slender, the fifth abruptly clavately much thickened; third and fifth joints longest. (See fig. 13).

The distinctive features of the male gonopods and of the ninth legs are shown in figs. 14 and 15.

Length, about 4.5 mm.

LOCALITY: Tenn.: Gatlinburg.

A male taken in grassy area July 18, 1947 and a male in spruce-fir area July 11, 1947.

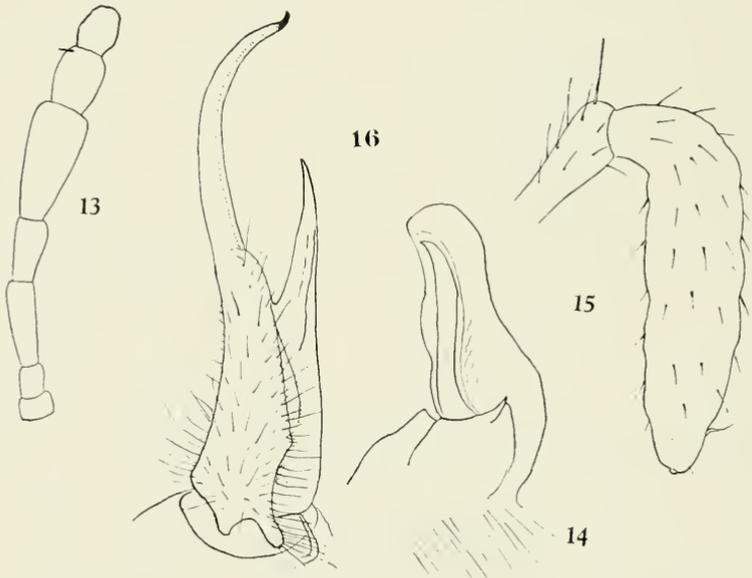


Fig. 13. *Trichoepetalum montis*, n. sp. Antenna.

Fig. 14. The same. A gonopod, anterolateral view.

Fig. 15. The same. A ninth leg of male, anterior aspect.

Fig. 16 *Borarja monticolene*, n. sp. Right gonopod, preaxial view.

In arrangement of ocelli similar to *T. lunatum* Harger, the generotype, but in the structure of the gonopods quite distinct from that and others so far known.

Family CLEIDOGONIDAE

PSEUDOTREMIA **HANSONI** Chamberlin, new species

Color horn brown, paler on lower part of sides and in an areolate spot mesad of each shoulder in each tergite and in a stripe along median sulcus; prozonites more greyish. Legs yellow, with tarsi darker, brownish.

Body less fusiform than usual, being of nearly uniform width from sixth to twentieth segment.

Ocelli about 21 in number, arranged in five definite series parallel with vertex of head; e.g., 6.5.5.3.2, from above downward.

Collum margined anteriorly, thickened below each lateral angle.

Shoulders of the following segments prominent in the more anterior ones, gradually decreasing to the twenty-sixth segment. Lateral striae conspicuous on all segments except the last few where they are obsolete. Tergites of first three segments essentially smooth. Beginning on fourth tergite a few longitudinal, narrow and keel-like tubercles mesad of each shoulder, these tubercles becoming more numerous in going caudad, and in the middle region forming several irregular transverse series, the anterior of which extends mesad to the middle line or, on more caudal segments, to the submesal setigerous tubercle on each side. Tubercles present on all tergites to the twenty-sixth, the 27 to 29th tergites more simply longitudinally rugose over the posterior portion.

Length, 29 mm.; width, 3 mm.

LOCALITY: Ky.: Pineville. One female taken July 10, 1947.

Differing from *carterensis* Bollman, in having the dorsal tubercles elongate, ridge-like and of variable size instead of rounded tubercles of nearly uniform size. Differing from *simulans* Loomis, a similarly large species, in the somewhat more numerous and more regularly arranged ocelli, in the more strongly compressed, ridge-like tubercles, and apparently in coloration.

PSEUDOTREMIA **FRACTA** Chamberlin, new species

Dorsum and antennae light brown or grayish brown; mesad of each shoulder the usual light mottled area. Legs pale.

Eyes pigmented; composed of about 10 ocelli, these arranged in three series parallel with the top of head, e.g., 4,4,2.

Tuberculation very strong; on a typical segment those on the posterior border are elevated beads of circular or oval outline, those on the anterior part are elongated and moderately compressed from side to side; tubercles present on all tergites from the second caudad, but those of the first ones few and confined to posterior area of tergite.

Width, 2.2 mm.

LOCALITY: Tennessee: Gatlinburg Cove, A female taken June 24, 1924.

Characterized especially by the form and distinctness of the dorsal tubercles, the number of ocelli and the pigmentation.

Family XYSTODESMIDAE

BORARIA MONTICOLENS Chamberlin, new species

A smaller species than *B. brunnior* Chamb. which occurs in the same general area. From that species it differs in the details of the gonopods. (Fig. 16) In these the principal blade is longer, more slender, and but moderately and evenly curved instead of being rather abruptly bent mesad as it is in *brunnior* and *geniculata*. On the other hand, the prefemoral spine is proportionately broader and shorter.

The type is brown above, with a band along posterior margin of tergites yellowish, and with a yellow spot also on most of the keels. Pleurae, venter, legs and antennae yellow.

Width, 3.8 mm.

LOCATION: Tennessee: Great Smoky Mts. National Park. One male.