THE STATUS OF SIGMORIA GRACILIPES CHAMBERLIN,
WITH REMARKS ON THE MILLIPED GENUS
BRACHORIA (POLYDESMIDA: XYSTODESMIDAE)

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ABSTRACT

Brachoria gracilipes (Chamberlin), comb. nov., distinguished by the
apical curvature of the gonopodal telopodite, is proposed for a ystodesmid
milliped species formerly in Sigmoria. The need for a second revision of
Brachoria is noted, as the nomenclature has undergone several recent
changes, and the range of the genus has been extended to the eastern edge
of the Blue Ridge Front in North Carolina.

The heterogeneity of the milliped genus Sigmoria has been recognized
since 1958, when Hoffman observed that it was a "catch-all" for ystodesmids
that could not readily be assigned to other established genera. Of the 9
species currently in Sigmoria, none is so obviously misplaced as gracilipes
Chamberlin, which he described in 1947 from Stone Mountain, Harlan Co.,
Kentucky. The very locality of this milliped, in the heart of the Cumberland
Mountains, suggests a species of Brachoria, and this suspicion is confirmed
by Chamberlin's gonopod illustration, which shows a distinct cingulum on
the telopodite. During a recent visit to the Academy of Natural Sciences,
Philadelphia (ANSP), I discovered the holotype of S. gracilipes in their
milliped collection and take this occasion to make the necessary nomenclature
change, redescribe the species, and publish comments on the genus
Brachoria. I am grateful to Selwyn Roback for permission to examine the
millipedes at the ANSP and loan of the type of S. gracilipes. This study was
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Brachoria gracilipes (Chamberlin), NEW COMBINATION
Figs. 1-3

Sigmoria gracilipes Chamberlin, 1947: 29, Fig. 15. Hoffman, 1950: 5.

TYPE-SPECIMEN: Male holotype (ANSP 9952) collected by Witmer
Stone, 30-IV-1921, from Stone Mountain, Harlan Co., KY.
DIAGNOSIS: A moderate sized species of Brachoria distinguished by the
distal configuration of the gonopodal telopodite, which bends sharply laterad
apically, thus hiding the tip in medial view.
HOLOTYPE: Length 40.0 mm; width of 6th segment 9.1 mm, of 10th seg-
ment 9.3 mm, of 15th segment 8.9 mm; W/L ratio 23.3%; depth/width ratio
62.4%; body essentially parallel sided for most of length.

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2Hoffman (1950) and Chamberlin and Hoffman (1958) incorrectly reported the type locality
as Pine Mountain, Bell Co., Kentucky.
Figs. 1-3. *Brachoria gracilipes* (Chamberlin), left gonopod of holotype, prefemoral setae omitted. 1) medial view, 2) lateral view, 3) cephalomedial view. Scale line = 1 mm for all figures.

Color in life unknown. Evidence in preserved specimen of stripe along anterior edge of collum and caudal edges of metaterga, connecting with paranotal markings; stripes slightly wider in middorsal region.

Head capsule smooth, polished; width across genal apices 4.8 mm; interantennal isthmus broad (1.8 mm); epicranial suture distinct, terminating in slight impression at interantennal region. Antennae long and slender, extending to caudal edges of 4th paranota, becoming progressively more horse-like distally; 1st antennomere subglobose, 2-6 clavate, 7 short and truncate. Genae not margined laterally, with distinct medial impressions, ends broadly rounded and extending slightly beyond adjacent margins of cranium. Facial setae as follows: epicranial, interantennal, frontal, and genal not detected and apparently absent; clypeal about 6-6; labral about 8-8.


Sides of metazonites irregular, with several shallow, grooved impressions. Strictures distinct. Pregonopodal sterna with small, irregular lobes; recessed slightly between 7th legs to accommodate curvature of gonopods. Postgonopodal sterna flattened, with shallow, longitudinal, medial impressions and slight indentations between legs. Hypoproct pointed, with distinct apical tooth; paraprocts with margins slightly thickened. Pregonopodal coxae without spines; postgonopodal coxae with low blunt tubercles on 9th legs, be-
coming progressively more spiniform through segment 16 and disappearing thereafter. Prefemoral spines distinct on legs 5-30; tarsal claws broadly curved.

Gonopodal aperture subelliptical, about 2.8 mm wide and 1.4 mm long at midpoint; margins flat, raised and flared slightly caudad. Gonopods (Figs. 1-3) with moderate sized coxae; prefemoral processes subtriangular, apically notched; telopodites thin and fragile, probably overlapping in situ, broadly curved ventrad and bent laterad apically, so that tip visible only in lateral view; cingulum at approximately mid-length; course of prostatic groove along midline basally, crossing over to lateral side distal to cingulum.

**DISTRIBUTION:** Known only from type locality.

**REMARKS:** The most striking feature of *graciltipes* is the apical curvature of the telopodite. It does not curve dorsad at all (downward toward the prefemur in either medial or lateral view) but instead is bent abruptly laterad so that the tip is concealed in medial view. This feature is revealed in Chamberlin's illustration, but there is no tooth along the inner edge of the telopodite at the base of this bend, as his figure shows. The apex is also blunt rather than pointed. None of the described species of *Brachoria* displays this curvature, which is diagnostic for *graciltipes*. Consequently, *graciltipes* does not seem to be closely related to any known species. As indicated by Hoffman (1971), additional species of *Brachoria* probably exist in eastern Kentucky, so the affinities of *graciltipes* may be more evident when the fauna of this region is better known.

**A Note on the Genus Brachoria**

Since its revision by Keeton (1959), *Brachoria* has been the subject of 3 additional papers (Hoffman 1963, 1971; Keeton 1965), and 4 new species have been described: *versicolor* Hoffman (1963); and *conta*, *enodicum*, and *divicula*, all by Keeton (1965). Hoffman (1971) subsequently reduced *versicolor*, along with *calcaria* Keeton and *hamata* Keeton, to subspecies of *separanda* Chamberlin. Thus, there have been several nomenclatorial changes in *Brachoria* since its revision, and there is disagreement about the status of *eutypa* and *ethotela*, both described by Chamberlin. Keeton (1959, 1965) regarded these as geographic races of a single species, whereas Hoffman (1971) suggested that they both might be valid species. My own observation is that these forms are similar to *initialia* Chamberlin, and a connection with this species may be possible. This is definitely a problem area within *Brachoria*, and it is accentuated by recent collections in North Carolina. Previously, the only published records of *Brachoria* from this state were *eutypa* *eutypa* from Avery Co. (Keeton 1959) and *ethotela* from Watauga Co. (Wray 1967). I have found the genus occasionally in the North Carolina mountains during the past 5 years, but in May 1978 it was abundant and common. Millipedes referable to *Brachoria* were collected in Mitchell, Yancey, and McDowell Cos. to the eastern edge of the Blue Ridge Front. Superficially, the fauna appears to be complex, as some specimens are trimaculate with a broad yellow spot on the middle of the metaterga, whereas others have only the paratal markings. The gonopods show similarities to published illustrations of both *eutypa* and *ethotela*, and I am uncertain as to how many species are involved.

Hoffman (1971) summarized the geographical distribution of *Brachoria*
and indicated that the northern Cumberland region of eastern Kentucky, which had been poorly collected, probably contained additional undescribed species. Inclusion of gracilipes in Brachoria attests to the veracity of his statement, and a complex fauna in the Blue Ridge Province of centralwestern North Carolina can now be reported. Thus, with the nomenclatorial changes since Keeton's revision and with the acquisition of material from new areas, a reexamination of Brachoria is clearly in order. Such a study should focus on species with thin, relatively simple gonopods, since there seem to be more problems with this group than with species having heavy, complex gonopods. Further simplification of the nomenclature of Brachoria beyond that of Keeton (1965) and Hoffman (1971) seems possible now, and a 2nd revision of this genus is rapidly emerging as an important taxonomic project in the family Xystodesmidae.

LITERATURE CITED


