

On a Diplopod Collection from  
Barro Colorado Island, Panama

BY

RALPH V. CHAMBERLIN



*BIOLOGICAL SERIES, Vol. V, No. 6*



PUBLISHED BY  
THE UNIVERSITY OF UTAH  
SALT LAKE CITY

THE UNIVERSITY PRESS  
UNIVERSITY OF UTAH  
SALT LAKE CITY

# On a Diplopod Collection From Barro Colorado Island, Panama

By RALPH V. CHAMBERLIN

The present paper presents the results of a taxonomic study of an important collection of millipeds made by Mr. Eliot C. Williams, Jr., of Northwestern University on Barro Colorado Island during July and August of 1938. Twenty-three species were secured, these representing a very interesting and largely new humus faunule. "All of the specimens were collected in the leaf debris of the forest floor. Some of them were collected by means of a Berlese funnel, but the majority of them were picked up by hand."

Nineteen species, eight genera and one family are named as new. The types of the new forms are in the author's collection at the University of Utah.

## POLYXENIDAE

Genus BARROXENUS Chamberlin, new

With eleven tergites and nine pairs of lateral bristle bundles. Thirteen pairs of legs. Head broad; ocelli lacking; bearing rather stout serrate setae over frontal and occipital regions. Antennae 8-jointed, with the eighth joint as long as the seventh. Anterior tergites with two dorsal whorls or bundles of setae additional to the ordinary lateral ones. Also with transverse series of setae, but no true scales present. Last segment with a single brush of setae which are of two kinds, long, fine setae and shorter, coarser bacilliform setae, both types serrate, with teeth fine and hair-like; no barbed setae present.

Genotype.—*B. panamanus*, new species.

*Barroxenus panamanus* Chamberlin, new species

Setae on head in a band starting in frontal region, where widest and curving upward and outward about the region of each antenna; a patch of setae also in middle region between ventral ends of these and on each side of the occipital region adjacent to the curving band. Antennae with the eighth article about equal in length to the seventh, narrowing distad, the seventh thicker and cylindrical.

The ordinary setae of the tergites and bristle bundles of uniform width except at the narrowed basal region and the short acuminate tip; serrate, with teeth hair-like; sometimes appearing clavate.

Setae on anal segment forming a single large and dense bundle in which there are two types. The first consists of shorter and much coarser setae like those of the lateral bristle bundles and arranged chiefly at the periphery. The second, forming principally the core of the bundle, consists of finer, flexuous hairs, of varying length but in large part much longer; these similarly provided with hair-like teeth

along the sides; the slender basal portion often very long with distal region expanded in paddle-like form.

Length of holotype to base of caudal fascicle, 1.66 mm.; length of principal denser portion of anal fascicle, .33 mm.; length to end of longest setae of core, about .55 mm. Length of longer setae of lateral bundles, .166 mm. Length of ordinary setae on head, about .083 mm.

—LOCALITY.—Panama: Barro Colorado Id. A considerable number of specimens, mostly young and rubbed, were taken at various dates in July and August.

### GLOMERIDESMIDAE

#### *Glomeridesmus barricolens* Chamberlin, new species

Typically the color of this species is black or fuscous with a series of larger light spots along each side on the keels, a series of smaller spots part way up the dorsum and a median dorsal series of geminate spots. Antennae and legs more or less fuscous proximally, pale distally.

Posterior angles of posterior keels acutely produced much as in the Guatemalan *G. centralis* which species it also resembles in the pattern of the seriate light spots. It differs from this species in having the penes decidedly longer and proportionately thicker, attenuated from base with apex especially narrowing more; longitudinal channels and fine cross rings of similar type; penes straight.

Length, about 7.5 to 8 mm.; width, 1.8 mm.

LOCALITY.—Panama: Barro Colorado Id. A number of specimens taken on July 7, 12, 13, 17, 18, 20 and 22, 1938. A considerable number of very young forms, probably this species, were taken on July 20 and 21.

#### *Glomeridesmus parvior* Chamberlin, new species

Differing from *G. barricolens* and *G. centralis* in much smaller size, generally browner color and in the color pattern. The head is white below level of antennae in front and on sides and in a large transverse spot on each side of occiput, the two spots nearly meeting at the middle; dark in front of these spots. Dorsum with a median series of light spots which are not geminate except on first and second tergites on which the spot is V-shaped with apex cephalad and more or less broken; sides of dorsum paler from level of position of usual intermediate series to bottom series, these spots in the present species not typically clear as they merge with the pale background.

The penes are obviously relatively shorter and thicker than in *barricolens* but longer than in *centralis*.

Length, 3.7 mm.

LOCALITY.—Barro Colorado Id. Several specimens taken July 4 and 17, 1938.

## STIODESMIDAE

Genus *NABOTOMUS* Chamberlin, new

Consisting of head and twenty body segments. Resembling *Gasatomus* in having the collum, which covers the head widely from above, with a broad border divided into twelve areas by radial sulci, the margin presenting corresponding crenations. Porigerous prominences at caudal corners of keels and directed caudo-laterad in all cases, two definite lobes lying in front of it. Last tergite trilobed, with a narrow subconical median lobe and each side of this a keel-like plate with caudally directed angle.

Genotype.—*Nabotomus delus*, new species.*Nabotomus delus* Chamberlin, new species

Vertex of head granular, crossed by a sharply impressed sulcus.

Collum with border horizontal and broad, extending well beyond head; border divided into 12 areas by clearly impressed radial sulci but marginal indentations scarcely detectable, the margin being nearly smoothly continuous. Convex area of collum covered with two transverse series of large tubercles of which there are six in the posterior row and four in the anterior.

Lateral keels of ordinary tergites wide and horizontal; divided by radial sulci into three lateral lobes corresponding to marginal crenations between which the incisions are shallow; anterior margin straight and smooth; the caudal margin with a single weak indentation corresponding to a radial sulcus, the margin otherwise smooth. Porigerous cones on third or caudal lateral area, i. e., with two areas or lobes in front of it. Last tergite broad, presenting two lateral horizontal expansions corresponding to the keels of preceding segments and a convex, subconical median portion of which the apex is narrowly truncate, this apex surpassing the caudally directed posterior angles of the lateral lobes or keels.

Length, 4 mm.; width, .88 mm.

LOCALITY.—Panama: Barro Colorado Id. One adult female taken July 9.

*Gasatomus dubius* Chamberlin, new species

Agreeing in general structure with *G. emersoni* but apparently a smaller form in which the fifth article of the antennae is relatively decidedly shorter and thicker. The collum with border divided by shallow crenations into the typical twelve lobes of which the one at each end of the series is relatively much smaller than in *emersoni*, being only between a third and a fourth the width of the adjacent one instead of half or more the width. The median, poriferous lobe of the fifth keels

thicker than the anterior lobe instead of more slender, and the caudal lobe situated farther mesad and directed more caudad than in the genotype.

Length of specimen of 17 segments, 2.5 mm.

LOCALITY.—Panama: Barro Colorado Id. Four immature specimens.

**Dominicodesmus panamicus** Chamberlin, new species

Basic color light horn brown but darkened by foreign material adherent especially on the tubercles.

Agreeing in general structure of the collum with the genotype. This leaves the head much exposed from above. The incisions of the border are similarly deep except between the last two lobes on each side which are completely fused except for a slight depression at middle of margin, which is much less evident than in *granulofrons*.

As in the genotype the anterior lobe of the poriferous keels is entire but more widely rounded and the diastema between this and the posterior lobe is wider and straight at bottom, not acute; poriferous lobe also broader and more rounded. Non-poriferous keels evenly trilobed.

Length, 4.6 mm.

LOCALITY.—Panama: Barro Colorado Id. One female taken July 28.

**STYLODESMIDAE**

**Botrydesmus cryptus** Chamberlin, new species

Light horn brown but darkened by abundant adherent material.

Antennae moderately clavate, the fifth joint longer and thicker than the sixth.

Collum covering the head in dorsal view. The border is divided into ten lobes separated by deep incisions extending through the rim; the median sinus somewhat wider than others but much narrower than in *B. lutosus*.

Surface of tergites granular and with short erect hairs. Lateral keels indented or notched as in *lutosus*, the margins closely fringed with hairs to which dirt is prone to adhere. In addition to the two pairs of principal dorsal keels there is on each side a partly developed keel at or just above the base of lateral keel, this keel with margin smooth and rising from its anterior end to a pointed projection at caudal end.

On penult tergite the two median keels more strongly elevated, projecting over caudal segment which is nearly covered in dorsal view.

Length, 4 mm.

LOCALITY.—Panama: Barro Colorado Id.

Distinguished from *lutosus* in lacking the four major lobes on border of collum in the latter, all incisions being equally deep. In *Stenitus* the border of the collum is simply crenate with radial sulci marking off the lobes.

### ONISCODESMIDAE

#### *Oniscodesmus eutypus* Chamberlin, new species

Dorsum and antennae light brown, the legs pale yellow or whitish. Agreeing in general structure with previously known species but differing conspicuously in having the posterior sinus of the penult tergite wider than long, instead of much narrower, although still narrower than the width of the keels. It is also very distinct in the sculpturing of the first tergite. In this the posterolateral margins form a convex line or semicircle, while the anterior margin is nearly straight at middle but extends forward on the lateral corners which are moderately produced forward, rounded; back of the anterior border, which is set off by a transverse sulcus, are two rows of large, conspicuous areas of which there are six in the anterior row and three in the posterior; the anterior border also more indistinctly divided into about six areas by weak cross-lines. Anterior border of second tergite subvertical, rising triangularly upward and backward at middle. On the ordinary tergites in front of the posterior border, marked into sharply defined small areas by longitudinal sulci, the surface is marked off into much larger, irregular areas by weaker and largely indistinct lines.

Length of the type, which is apparently not fully matured, about 5 mm.

LOCALITY.—Panama: Barro Colorado Id. One specimen taken July 21, 1938.

#### Genus *BARRODESMUS* Chamberlin, new

Agreeing in general with *Oniscodesmus* but differing in having the posterior border of tergites wholly smooth, not at all marked off into definite areas.

Genotype.—*Barrodesmus isolatus*, new species.

#### *Barrodesmus isolatus* Chamberlin, new

Light testaceous brown.

Differing from species of *Oniscodesmus*, as above indicated, in having the posterior borders of the tergites smooth and shining; in front of this border, between it and the segmental sulcus, the surface is densely and very finely longitudinally striate; surface in front of sulcus pitted or punctate, roughened.

First dorsal plate subtrapeziform, broader anteriorly than posteriorly; the anterior margin in middle nearly straight, convex at ends; posterior margin somewhat arcuate, convex at ends, the posterior corners rounded.

Second tergite greatly expanded on sides; the anterior margin of expanded wing almost semicircular.

Posterior excavation in penult tergite shallow, wider than long, the anal tergite extending into the sinus as a minute conical process; the sinus narrower than the bordering keels.

Length, 5 mm.

LOCALITY.—Panama: Barro Colorado Id. A number of specimens, mostly immature, taken in July and August.

### *Oncodesmus granosus* (Gervais and Goudot)

*Polydesmus granosus* Gervais and Goudat, Ann. Ent. Soc. Fr., 1841, ser. 2, v. 11, p. xxviii.

*Cyrtodesmus granosus* Gervais, Ins. Apt., 1847, v. IV, p. 93.

*Oncodesmus granosus* Cook, Brandtia, 1896, p. 28; Proc. U. S. Nat. Mus., 1898, 1898 XXI, p. 458.

*Oncodesmus granosus* Silvestri, Boll. Mus. Torino, 1896, v. XXI, p. 6.

A considerable number of young specimens, probably this species, which was previously reported from Panama by Silvestri, were taken on Barro Colorado at different dates in July and August.

### Genus PELTEDO Chamberlin, new

Resembling *Oncodesmus*, and differing from *Cyrtodesmus*, in not having the pores papillate and the surface bearing true hairs, these being typically represented by mere points. It has the dorsal surface of the segments densely studded with fine granules between and over larger tubercles which are in part arranged and partly fused into keel-like longitudinal crests not present in *Oncodesmus*. Segments shouldered and slightly notched on posterior side at base of keels. The carinae of the second segment vertical, greatly expanded into semicircular discs or shields extending above and cephalad of the head which is thus completely concealed from the sides; over outside of the smoothly semicircular margins of these carinae the carinae of the succeeding segments fit when the animal is rolled, the animal then appearing much compressed from side to side. Tergite of the twentieth segment much wider than long, the caudal margin setiferous, much exceeding the width of the keels of the 19th segment.

Genotype.—*P. archimedes*, new species.

*Pelredo archimedes* Chamberlin, new species

Dorsum uniformly brown throughout excepting anterior, normally concealed, portion of the prozonites. Sometimes very dark. Upper, granular area of head also brown but the part below level of antennae white. Antennae pink. Legs white.

Vertex and frontal region of head densely granular, crossed by a median longitudinal sulcus. Antennae strongly clavate, normally folded and lying in space between head and laminate keel of second tergite.

Collum densely covered with granules and larger tubercles which form a more elevated region each side of the middle region.

On the second tergite two series of the largest tubercles form longitudinal, ridge-like rows across the metazonite; of these the outer row or ridge on each side largest, the tubercles largely confluent, the ridge continuous with the elevated rim extending above and in front of the head.

On the succeeding segments also corresponding four rows of large tubercles of which, however, the inner pair are most strongly developed, each consisting of three tubercles, whereas the more lateral series contains but two, while lower down on each side is a single large tubercle representing a third ridge. Keels laterally with a single weak notch.

Width, 2 mm.

LOCALITY.—Panama: Barro Colorado Id. Specimens were taken July 1 and 31, and on August 1, 2, and 9, 1938.

## EUTYNELLIDAE, new family

Includes at present *Eutynellus*, gen. nov. and *Agenodesmus* Loomis, set apart by peculiarities of the male gonopods. Both have the reduced number of eighteen body segments.

## Genus EUTYNELLUS Chamberlin, new

Resembling the West Indian *Agenodesmus* in having the body composed of only 18 segments and in bearing pores on segments 5, 7, 9, 10, 12, 13, 15, 16 and 17. It differs, however, in having the pores open on the lateral margin instead of above, just in front of the caudal corner, which in consequence appears notched when viewed from above; the pore opening into a short canal leading to a rounded dorsal swelling situated just mesocephalad of the corner. The keels well developed; laterally typically with two denticles; caudal angles acutely produced in posterior and middle segments. Tergites bearing transverse series of clavate setae. Antennae clavate. Last articles of legs abruptly more slender than preceding ones.

Genotype.—*E. flavior*, new species.

*Eutynellus flavior* Chamberlin, new species

This minute millipede is yellow in color with anterior end and antennae often with a reddish tinge.

Head clothed over vertex and frontal region with erect setae shorter than those of tergites. Antennae clavate, with first four joints, however, slender and nearly uniform in thickness, the fifth abruptly thicker, longer than wide, the sixth thickest and longest; fourth, fifth and sixth articles with a long fine hair at distal end on outer side and with a similar one on inner side as well.

First segment with caudal margin straight, the lateral and anterior margins together evenly convex.

Succeeding tergites with keels well developed. Anterior corners rounded, the posterior from rectangular to acutely produced, those of third segment slightly produced, the production of succeeding ones gradually increasing, processes in posterior region pronounced and acute. Lateral margin of each keel with a denticle toward anterior corner and one at middle.

Last dorsal plate long, acutely triangular, the caudal end weakly notched.

Sixth articles of legs long, abruptly more slender than fourth and fifth, the third clavately widening to thickness of fourth.

Illustration of gonopods deferred.

Length, 2.75 mm.; width, .38 mm.

LOCALITY.—Panama: Barro Colorado Id. Numerous specimens taken at various dates in July and August.

## LEPTODESMIDAE

Genus *TYPOPHALLUS* Chamberlin, new

Consisting of the head and twenty segments. Head smooth, with a median sulcus across vertex. Antennae long and filiform, or slightly clavate, with joints 2, 3 and 4 long and subequal, joint 7 shorter and narrower. Collum broad, with anterior corners strongly rounded, and posterior margin arcuate. Tergites wholly smooth, each with a submedian transverse sulcus. Keels wide, nearly horizontal but rising upward toward lateral margins; anterior corners rounded, the posterior corners extended caudad in large and acute processes; margins smooth except for a minute lateral tooth toward anterior corner and typically one farther caudad; pores opening on lateral margins, the porigerous swelling long and narrow, moderate. Last tergite narrowing into a decurved process extending widely beyond the anal valves. Anal valves with inner borders moderately elevated. Legs long and slender; third joint longest as usual, the second and third thickest with articles beyond third notably abruptly more slender. Telopodite of anterior gonopods

of male is broad, lamellate, and much longer than the posterior which it wholly conceals from ventral view; the posterior (upper) ramus arising from very base of the anterior.

Genotype.—*Typophallus evidens*, new species.

Distinguished primarily by the distinctive structure of the male gonopods.

*Typophallus evidens* Chamberlin, sp. nov.

Dark brown or chocolate colored, the keels somewhat paler toward margins; antennae a lighter brown with first joint and last two lighter; legs yellow or nearly so; clypeal region of head pale.

Head with a pair of long setae toward lower end of sulcus and with numerous setae on face below level of antennal sockets.

Collum with anterior margin nearly straight at middle but curving widely laterally to the acute posterior corners. Caudal margin convex at middle and curving forward and laterad to the lateral angles, arcuate.

Posterior angles of all tergites produced caudad. Lateral margin with a small anterior tooth and a submedian one on anterior segments but the latter obscure or absent in middle and posterior regions.

Cauda with a setigerous conical marginal process on each side a little cephalad of tip and bearing two other setae between these marginal ones; a second series of setae farther forward.

Anterior ramus of gonopods smooth and glabrous, slightly widening distad but with ecto-distal corner oblique to the narrowly rounded mesodistal corner which bears a very small curved tooth; concave on posterior (upper) side. Posterior ramus a little more than half the length of the anterior; broader at base with angular outer corner below the narrower part which expands at distal end, the distal lamina indented at its end.

Length, 20.21 mm.; width, 3 mm.

LOCALITY.—Panama: Barro Colorado Id. Seven adult males and females and three immature specimens taken on July 6, 13, 15, 19, 22 and 31.

Genus *DESMACRIDES* Chamberlin, new

Consisting of the head and twenty body segments. Head smooth, with well marked vertigial sulcus. Antennae long and slender, the second, third, fourth and fifth articles longest and not much differing, the sixth shorter, clavately thickened distad. Collum of same general form as in *Typophallus*. Tergites of segments smooth; each metazonite with a submedian transverse sulcus; keels large, inserted high up and rising outwardly, with the posterior angles strongly produced and apically acute, the antero-ectal margin strongly convex, and the caudomesal

conspicuously concave; lateral margins finely serrate; dorsum of metazonites with transverse series of setae in front of and caudad of sulcus; setae in angles of serrations. Last tergite narrowed caudad, the projecting cauda with apical setae and others arising from basal tubercles on dorsum and along sides. Anal valves margined at mesal border, with three pairs of long setae inserted close to the inner rim. Legs very long and slender.

Characterized especially by the gonopods of the male. These are relatively very small; the telopodite has a conspicuously setose basal segment above which is a smooth, laminate, and somewhat complexly folded plate; from mesodorsal side of setose portion arises a slender, styliiform process which curves against, or in a concavity of, the distal lamina.

In the male the coxae of the fourth leg bears a rounded boss on base of mesal side and the corresponding sternite a pair of laminate processes.

Genotype.—*Desmacrides dichrus*, new species.

***Desmacrides dichrus* Chamberlin, new species**

General color black, or nearly so, with the keels beyond base yellow. Head black except the paler lateral border. Antennae brown and legs yellow.

Head with long setae both above and in front.

Collum with anterior and lateral margins together forming a semi-circle; posterior margin arcuate, the posterior margin of the keels being concave, the lateral angles acutely produced; lateral margin of the keels with a small serration in the angle of which is a seta; two transverse series of setae.

On succeeding tergites a series of setae behind sulcus and one in front of it. Keels curving strongly ectocaudad; outer margin with three low serrations of which the anterior is largest and in the angle of each of which there is a seta; concave caudal margin of keels bearing mostly five to seven teeth; pores opening on outer margin of base of process just back of the most caudal serration, the margin there but little thickened. Processes of nineteenth tergite reduced, the long processes of the eighteenth keels extending over them nearly to their ends.

Terminal lamina of telopodite of gonopods sub-geniculate a little beyond base, bending ectad; the blade so folded as to leave a wide furrow along ventral side, and a furrow on mesocaudal side into which the stylus curves. Setae at apex of basal division of telopodite very long.

Length, about 30 mm.; width, 4 mm.

LOCALITY.—Panama: Barro Colorado Id. Male holotype taken July 17, and a male and female July 14.

Genus *TICHODESMUS* Chamberlin, new

Composed of head and twenty segments. Antennae with first four articles of nearly uniform thickness, the fifth and sixth abruptly thicker, clavately widening distad, each bearing a long seta from dorsal side. Collum small, narrower than second tergite. All tergites with a distinct transverse sulcus; a row of large tubercular elevations in front of and one behind the sulcus, these tubercles bearing a transverse series of clavate setae; a transverse series of setae along caudal border arising from smaller nodules, these setae projecting directly caudad on the posterior segments. Keels narrow; anterior corners rounded, the posterior angularly produced in increasing degree from second segment caudad; lateral margin bi- or tridentate, the larger anterior tooth bearing a clavate seta, the second, submedian tooth very small and the third tooth, when detectable, minute. Caudal processes of keels typically decreasing in size from sixteenth and seventeenth segments caudad. The pores open upward from broad conical elevations at caudal corners on segments 5, 7, 9, 10, 12-18. Last tergite long, conically narrowed caudad.

Genotype.—*T. micrus*, new species.

*Tichodesmus micrus* Chamberlin, new species

In this species the color is horn brown with legs and antennae paler. Setae of head fine and short, not conspicuous. Fifth article of antennae evenly clavate from base; the sixth narrow at base and abruptly swelling out distad of this basal stalk.

Gonopods of male with telopodite arising from mesal side of swollen, hemispherical basal division, slender, geniculate with distal portion running horizontally mesad and crossing that from other member, distally slender and acute with apical portion a little curved.

Length of maximum female, 4.8 mm.; width, .6 mm.

LOCALITY.—Panama: Barro Colorado Id. Numerous specimens, in large part immature, taken at many stations and dates in July and early August.

## SPHAERIODESMIDAE

*Sphaeriodesmus isolatus*, Chamberlin, new species

General color of preserved specimens dull grayish brown.

Collum equal in width to head inclusive of cardines; ends subrectangular in outline but narrowly rounded.

Second and third tergites subequal in length, taken together a little longer than the large fourth tergite; their keels acutely narrowed distad, those of the second straight, those of third curved gently caudad. Fourth keels with anterior corners widely convex, the posterior angular; caudal margin of keels a little concave. Fifth and immediately following keels with ends evenly rounded. Keels of eighteenth tergite with caudal

margin meeting of median portion at a distant angle nearly as in *Eusphaeriodesmus angustus* Pocock.

First legs in the male considerably thickened, but the femur without node or process below.

Socket of gonopods of male limited at sides by a distinct moderately elevated rim, the middle, caudal segment of rim extending between bases of legs. Telopodite of gonopod extending forward parallel to axis of body and moderately curving, the tip directed ventrocephalad; entirely without tooth or trace of a secondary branch; abruptly narrowing at base of a terminal blade which in turn ends in a slender sigmoidally curved terminal spine which bears at base a tooth on its convex or anterior side; telopodite bearing numerous erect setae on ventral side from base to the terminal blade.

Length, 14-15 mm.; width, 5 mm.

LOCALITY.—Panama: Barro Colorado Id. Many specimens taken at several dates from July 13 to August 1, 1938.

### STEMMIULIDAE

#### *Stemmiulus canalis* Chamberlin, new species

A dorsal brown band bisected by a median pale line. Each side of the dorsal band the sides of the tergites are paler due to light spots or areolations. Anal segment paler. Head brown, paler laterally. Antennae brown, the first two and the last article paler.

Antennae long and slender with the sixth article two and a half times longer than broad and the fifth three times longer than broad in the male holotype. The usual large single ocellus on each side.

Collum with two oblique striae lying above lower margin and then curving up nearly parallel with anterior margin as usual. Second tergite striate beneath, the oblique striae rising higher and higher on succeeding tergites until they reach the middorsal line on the eleventh or twelfth segment. Marginal setae of last tergite well developed. Anal scale with two long setae at caudal end.

The large third legs of the male with the third, fourth and fifth articles much thickened, the first of these clavately enlarged distad, the other two subcylindrical and about as long as broad.

The outer column of gonopods of male characterized by a conspicuous lamellate subbasal process which extends from outer side distally ectad, and a second lamellate expansion just above this; toward distal and a rounded setose knob beyond which is a smooth chitinous lamella extending caudad and notched at distal end, the column appearing geniculate in side view at junction of terminal, basally narrow lamella with pilose region.

Number of segments, 48.

Length of male holotype, about 28 mm.; width, 2.2 mm.

LOCALITY.—Panama: Barro Colorado Id. Several adult and many immature specimens taken in July and early August.

This species is undoubtedly closely related to *Stemmiulus bioculatus* (Gervais) but the precise identity of the latter species must await a critical reexamination of the types. The present form would seem to be certainly different from the female described as *bioculatus* by Silvestri (1916, Boll. del Lab. di Zool. R. Scuola d'Agr. in Portici, vol. X, p. 314, fig. XXI, 1-3) in the notably more slender antennae and the apparently larger number of segments to the body. Silvestri's specimen was from Punta Sabana, Darien.

## SPIROBOLIDAE

### *Rhinocricus williamsi* Chamberlin, new species

A conspicuously banded form, each ordinary tergite being ringed with brown in front of the suture and with gray or yellowish gray caudad of it and especially on the sides, also in front of the brown band. Anal tergite brown, the anal scale and valves gray or yellowish as also are the legs and the head and antennae. Collum mostly yellowish except for a brown band across anterior portion and extending caudad at middle in form of triangle.

Collum with submarginal sulcus above each of the well-rounded ends and extending up the anterior border to level of eye, the sulcus light. Second tergite extending below end of collum, its lower end shallowly excavated back of anterior corner.

Scobina small, with anterior impression sublunate; the striate area triangular and relatively long, a little narrower in anterior segments at anterior end than the anterior impression; disappearing about 15 segments from the caudal end of body.

Anal scale broadly but distinctly triangular, with the sides a little convex.

Telopodite of posterior gonopods with principal branch paddle-shaped with its distal angles rounded and not at all produced, the styli-form branch slender and straight, shorter than the laminate branch. Anterior sternite of characteristic form, the median terminal portion being longer than the broader basal portion and parallel-sided or rather weakly clavate from its base, apically truncate.

Number of segments, 44-46.

Length of female allotype, about 42 mm.; width, 4 mm. Width of male holotype, 3 mm.

LOCALITY.—Panama: Barro Colorado Id. A number of specimens, partly immature, taken at various dates between July 3 and August 3.

### *Microspirobolus*, sp.

One immature specimen of uncertain species taken August 19.

## SPIROSTREPTIDAE

*Orthoporus* sp.

Two females probably of this genus cannot be satisfactorily determined in the absence of males. They were taken July 25.

## POLYZONIIDAE

*Siphonotus centralis* Chamberlin, new species

A small form with dorsum and antennae brown in color with some mostly indistinct light spots of which the most definite is a transversely elongate oblong or linear mark in front of caudal margin of tergites on each side of dorsum; head and legs pale yellow. In general size and appearance suggesting *S. parvus* Chamberlin of British Guiana, and similarly much smaller than the West Indian *S. purpurous* Pocock, with segments also much fewer. In comparison with *parvus* the last tergite is much more exposed from above with the dorsal line at caudal end less convex. Antennae less crassate with the large penult article relatively longer and more slender and of more uniform thickness.

Segments in adult male holotype 25.

Length, close to 3 mm.

LOCALITY.—Panama: Barro Colorado Id. One male taken August 7, 1938.

*Siphonotus angulifer* Chamberlin, new species

A much larger species than *S. centralis*, with more numerous segments. Darker and more uniform brown, the antennae dark like the dorsum but legs pale yellow or whitish. A conspicuous dark, almost black, line encircling dorsum from level of pore on each side, this dark line bent forward angularly at mid-dorsal line. Antennae moderately clavately thickened. Collum larger than in *centralis*, extending further forward into a free border and covering the eyes from above.

Dorsal line at caudal end gently convex, the last segment freely exposed from above.

Number of segments 46.

Length, nearly 9 mm.; width, .87 mm.

LOCALITY.—Panama: Barro Colorado Id. A single female was taken July 19.

## SIPHONOPHORIDAE

*Siphonophora fallens* Chamberlin

*Siphonophora fallens* Chamberlin, Proc. U. S. Nat. Mus., 1922, vol. 60, art. 8, p. 8, pl. 3, figs. 1-4.

This species, previously known from Guatemala at Joyabaj-Chiche, is represented in the present collection by a number of mostly immature specimens taken upon the Island on dates from July 13 to July 28, 1938.