THE GOBLIN SPIDER GENERA
PRODYSDERINA, ASCHNAOONOPS, AND
BIDYSDERINA
(ARANEAE, OONOPIDAE)

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On the cover: The canopy-dwelling species *Aschnaoonops silvae*, male, lateral view of carapace, showing the marginal row of setae with tuberculate bases.
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INTRODUCTION

The goblin spiders detailed below have received relatively little attention in the literature. Only a few species have been described, mostly misplaced in the genus Dysderina Simon. However, these animals lack the transverse ridges on the sternum, and the groove connecting the anterior spiracles, that characterize the members of Dysderina (see Platnick and Dupérré, 2011a). The distinctiveness of these taxa was first recognized by Dumitrescu and Georgescu (1987), who described one of them as "Prodysderina spinigera (Simon)." In attempting to establish the new genus they called Prodysderina, Dumitrescu and Georgescu included in it two species described by Simon, but because they failed to designate either of them as the type species, their generic name is a nomen nudum, and is not available. Of the two species, the one detailed first in their paper was "Prodysderina spinigera," but it is just as well that they did not designate it as the type species, because the specimens they studied and illustrated, from Venezuela, do not actually belong to Dysderina spinigera Simon, which was originally described from Saint Vincent in the Lesser Antilles. Those Saint Vincent specimens belong to a different genus, Simonoonops Harvey (see Platnick and Dupérré, 2011b).

Dumitrescu and Georgescu’s concept of Dysderina was erroneously based on a Mediterranean (rather than South American) species, their efforts have provided, for other systematists, the basis for a working concept of Prodysderina. In describing the genus as new below, we therefore retain their original generic name, and thereby make it available (with new authors and a new date). As the type species, we choose the one that was correctly identified by Dumitrescu and Georgescu, D. armata. That species shows a number of peculiarities, including a laterally incised, tuberculate, but unridged sternum, a groove connecting the posterior (but not the anterior) spiracles, and a male embolus with a greatly elongated distal prong and a much shorter, thinner proximal prong (figs. 61–73). Eight
apparently related new species are described below from Venezuela and Colombia.

The taxon that Dumitrescu and Georgescu misidentified as “Prodysderina spinigera” shares the sternal and spiracular features of these *Prodysderina* species but differs in having a basally widened and twisted embolus in males, and a reduced genital atrium in females. Those features are shared with a wide range of species, treated below, that are here considered congeneric with the misidentified Venezuelan species. Their distributions range from Peru northward; the group appears to be most speciose in Colombia and Venezuela, but also extends into northeastern Brazil and even the West Indies.

Ineffective as Dumitrescu and Georgescu’s attempt at establishing a new generic name may have been, their paper nevertheless contains careful descriptions and useful illustrations of the morphology of the specimens they studied. The same cannot be said for a more recent effort by Makhan and Ezzatpanah (2011) that also established a new generic name within the Oonopidae, *Aschnaoonops*, based on a single included species, *Aschnaoonops aschnae*, from Suriname. Their “paper” is perhaps best characterized as the taxonomic equivalent of medical malpractice. Those authors provided no differential diagnosis (i.e., no information identifying the putatively most closely related genus or genera, and indicating how their genus can be distinguished from those putative relatives). Their entire generic “description” reads as follows:

Small brown species. Carapace round. Palp with a C-shaped projection. Underside of the projection strongly sclerotized and upper side soft, open and seed-like inside. Legs with large thick spines and hairs.

Their species “description” merely repeats this information, adding only a measurement of the single known specimen and a few uninformative comments on its coloration and setation. Six extremely low-quality photographs were presented; from the two habitus views, one can determine only that their male specimen is a hard-bodied oonopid. There is a ventral view that is so out of focus that one cannot determine anything at all about the structure of the sternum. A lateral view of a first leg shows that the femur, tibia, and metatarsus are each heavily spined. In concert, these figures suggest that the specimen belongs to the *Dysderina* complex, a placement confirmed by two photographs of the male palp.

Those authors claimed that the “holotype will be deposited in the collection of the University of Suriname, Department of Entomology, Paramaribo, Suriname.” As documented by workers on other groups of arthropods who have had the misfortune of having to deal with the “contributions” of Makhan, this claim appears to be science fiction (see the comments by Bolton et al., 2008, who charitably considered a work by Makhan to be “one of the most inadequate papers that has ever been produced in ant taxonomy”). Our repeated requests to examine the holotype of *A. aschnae* have, unsurprisingly, been declined (see Jäch, 2006, for details on Makhan’s prior attempts to extort large sums from investigators seeking to examine his types).

Our first inclination was simply to treat *Aschnaoonops* as a nomen dubium, on the grounds that nothing in the published description or illustrations suffices to identify the genus, and that the type is unlikely ever to be available for examination. Although the name clearly refers to some member of the *Dysderina* complex, the generic description could easily apply to members of that complex as disparate as *Paradyserina* Platnick and Duplicè (cf. Platnick and Dupérré, 2011c: figs. 122–125) and *Costarina* Platnick and Dupérré (cf. Platnick and Dupérré, 2012: figs. 80–84). However, males of one of the new species described below from Pará, Brazil, have palps that appear to resemble those of *A. aschnae*, and on that basis we have decided to use the generic name to refer to the group of species that seem to be most closely related to *A. margaretae*, new species (which is the taxon that was misidentified as “*Prodysderina spinigera*” by Dumitrescu and Georgescu, 1987). Although the palpal photographs provided by Makhan and Ezzatpanah do not show a basally widened embolus, the Brazilian specimens, when seen in ventral or retrolateral views, clearly have that type of embolus, even though few traces of the
widened basal portions are apparent in prolateral view (figs. 560–565).

Both genera include some species with anomalous characters. For example, females of six species of Prodysderina (P. armata, P. megarmata, P. piedecuesta, P. rasgon, P. filandia, and P. otun) have the dorsal scutum fused to the epigastric scutum (figs. 63, 130); based on the similar male palps of P. rasgon and P. santander, we predict that the unknown female of the latter species will also show this character, which is not found in females of the other two species of the genus (P. rollardae and P. janetae). In the males, these scuta appear to have fused only in P. rasgon and P. santander. Even odder is that the females of P. piedecuesta and P. otun have the postepigastric scutum fused to the epigastric scutum (figs. 108, 109, 674), a feature not found in any of the other females treated below (although it is ubiquitous in the males). Within this group of species, even some individual specimens are anomalous; one of the females of P. filandia has normal female genitalia and a normal right palp, but the left palp bears, at its tip, a reduced male bulb subtending an apparently normal embolus (figs. 140–143). Males of P. filandia are unknown, but the embolus on the teratological female (figs. 144, 145) corresponds well to those of the other known species in the genus!

Similarly perplexing diversity occurs within Aschnaonops. Although most species resemble those of Prodysderina in having a substantial spinneret scutum and a groove connecting the posterior spiracles, two species (A pedro, fig. 380; A. cristalina, fig. 508) have seemingly lost the spinneret scutum, and in the females of two species (A. paez, figs. 299, 301; A. cristalina, fig. 509) the groove that normally connects the posterior spiracles seems to have moved anteriorly and lost its spiracular connections (males of A. paez are unknown, but those of A. cristalina have only a weak, almost obsolete, groove connecting those spiracles). Some reduction of the spinneret scutum also appears in A. jaji; although females of that species have a distinct scutum (fig. 456), males show only a slightly sclerotized rim, bearing the usual elongate setae. All these somatically anomalous species nevertheless have genitalia that seem typical for the genus.

In Aschnaonops, the dorsal and epigastric scuta appear to have fused only in the females of A. cosanga, A. indio, A. teleferico, A. trujillo, A. simla, and A. villalba, and in both sexes of A. tariba. The two known males of A. martia resemble those of some species of Paradysderina in showing asymmetry between the left and right palps; the right palpal bulb is much less “inflated” than the left, and there are also some slight but consistent differences in the shape of the embolus on the right and left palps (figs. 394–399). The single known female of A. villalba is also anomalous; the female genitalia are greatly reduced (figs. 588, 589) and the posterior legs have spines on the prolateral sides of tibiae and metatarsi III and IV that have not been detected on any other specimens. However, the right and left posterior legs show different spination patterns, and we suspect that this specimen is teratological.

Some species groups can be recognized within the large genus Aschnaonops. A group of seven Venezuelan species (A. tachira, A. tariba, A. teleferico, A. merida, A. aquada, A. masneri, and A. trujillo) are united by having an extremely complex embolus, with multiple processes, accompanied by a triangular projection on the retrolateral surface of the cymbium (as in figs. 430, 441). Interestingly, A. villalba, from Puerto Rico, shares these characters (figs. 586, 587) and seems to belong to the tachira group. Four species (A. meta, A. similis, and A. chingaza from Colombia, plus A. belem from Brazil) share a more apically situated projection on the male palpal cymbium (as in figs. 320, 332). Two species (A. ramirezi and A. marshalli from Ecuador) share a deep notch on the ventral pedicel margin of females (figs. 254, 270), but that feature has apparently been acquired independently by two members of the tachira group (A. merida and A. trujillo, figs. 468, 497), as well as by one species of Prodysderina (P. otun, fig. 674).

A third genus, Bidysderina, is established below for a small group of species with similar sternal structure, but with very different male genitalia. The palpal bulb is small, not expanded as in more typical members of the Dysderina complex, and the embolus is almost entirely bifid (figs. 627,
Producing the appearance of a separate embolus (presumably corresponding to the distal prong) and conductor (presumably corresponding to the proximal prong; this conductor is sometimes bifid as well). The male endites are distinctively modified, with a complex distal process (fig. 595). The female genitalia still retain an atrium, but it is short and small (figs. 630, 652). The five species assigned to this genus are known only from Napo province, Ecuador; although they have been taken on the ground (e.g., in pitfall traps), they have also been collected by beating foliage and even by canopy fogging, and at elevations as high as 3850 m.

Our methods follow those of Platnick and Dupéré (2009a, 2009b); only differences from the males (beyond the obvious lack of male endite modifications) are mentioned in the descriptions of females. The species are treated geographically, beginning (for Prodysderina) with the Venezuelan type species and proceeding westward, and (for Aschnaoonops) starting in Peru and proceeding north through the Andes, then east across northern South America, and finally north again into the West Indies. Because Aschnaoonops is so speciose, separate keys are provided to the species of Peru and Ecuador, of Colombia, of Venezuela, and of Brazil and the West Indies. Scans were taken from uncoated right male palps, and the images were flipped for consistency. All measurements are in mm. High-resolution, full-color versions of the images, a sortable version of the geocoded locality data, and a distribution map for each species will be available on the goblin spider Planetary Biodiversity Inventory (PBI) project’s website (http://research.amnh.org/oonopidae). Users should note that the relatively small published images are merely avatars for the actual image files on the website, which can each be enlarged several times before pixelating.

Collected and examined

AMNH American Museum of Natural History, New York, NY
BMNH Natural History Museum, London, England
CAS California Academy of Sciences, San Francisco, CA
CNC Canadian National Collection, Ottawa, Canada
FMNH Field Museum of Natural History, Chicago, IL
IAVH Instituto Alexander von Humboldt, Bogotá, Colombia
ICN Instituto de Ciencias Naturales, Universidad Nacional, Bogotá, Colombia
INBIO Instituto Nacional de Biodiversidad, Santo Domingo, Costa Rica
MACN Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina
MCZ Museum of Comparative Zoology, Harvard University, Cambridge, MA
MHNG Muséum d’Histoire Naturelle, Geneva, Switzerland
MNHN Musée National d’Histoire Naturelle, Paris, France
MPEG Museu Paraense Emílio Goeldi, Belém, Brazil
MUSM Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru
QCAZ Museum of Invertebrates, Pontificia Universidad Católica, Quito, Ecuador
USNM National Museum of Natural History, Smithsonian Institution, Washington, DC
ZFMK Alexander Koenig Zoological Research Museum, Bonn, Germany

Prodysderina, new genus


Type Species: Dysderina armata Simon.

Etymology: The generic name refers to the similarities to the genus Dysderina Simon, and is feminine in gender.

Diagnosis: Members of this genus differ from those of other members of the Dysderina complex as follows: from Dysderina, Simoonoonyops, and Costarina by lacking transverse ridges on the sternum (figs. 11, 41, 96,
of carapace by their radius or more, median projection present, formed by fused small, triangular chilum (figs. 3, 33); setae light, needlelike. Eyes six, well developed, ALE largest, oval, PME squared, PLE oval; posterior eye row recurved from above, procurred from front; ALE separated by less or more than their radius, ALE-PLE separated by less than ALE radius, PME touching throughout most of their length, PLE-PME separated by less than PME radius. Sternum (figs. 11, 41) wider than long, not fused to carapace, surface without transverse ridges or pits, median concavity and hair tufts absent, with radial furrows between coxae I–II, II–III, III–IV, furrows with rows of small pits, radial furrow opposite coxae III absent, sickle-shaped structures absent, anterior margin with continuous transverse groove, posterior margin not extending posteriorly of coxae IV but with posterior hump, anterior corners excavated, lateral margins with infracoxal grooves bearing anterior, posterior openings, distance between coxae approximately equal, extensions of precoxal triangles absent, lateral margins with bridges to coxae; setae sparse, dark, needlelike, denser laterally, originating from surface, posterior and lateral margins with conspicuous, tuberculate setal bases. Chelicerae slightly divergent, anterior face with slight swelling; usually with one large to one smaller tooth on promargin, one smaller tooth on retromargin (figs. 4, 5, 34, 35; scanned only in P. megarmata); fangs without toothlike projections, directed medially, shape normal, without prominent basal process, tip unmodified; setae dark, needlelike, denser medially; paturon inner margin with scattered setae, distal region, posterior surface unmodified, promargin with row of flattened setae, inner margin unmodified, laminate groove absent. Labium (figs. 6, 36) triangular, not fused to sternum, anterior margin not indented at middle, same as sternum in sclerotization; with six or more setae on anterior margin, subdistal portion with unmodified setae. Endites (figs. 6, 7, 36, 37) same as sternum in sclerotization, distally not excavated, serrula usually absent (scanned only in P. megarmata), anterior portion modified in males, posterior portion unmodified; labrum with thumb-shaped projection. Female palp (figs. 38, 39) without claw or spines; tibia with
three trichobothria (fig. 40), patella without prolateral row of ridges, tarsus elongate.  

**Abdomen:** Ovoid, without long posterior extension, rounded posteriorly, interscutal membrane without rows of small sclerotized platelets. Booklung covers large, ovoid, without setae, anterolateral edge unmodified; posterior spiracles connected by groove, groove continued beyond spiracles almost to lateral edge of postepigastric scutum. Pedicel tube medium, ribbed, scutopedicel region unmodified, scutum extending far dorsal of pedicel, plumose hairs, matted setae on anterior ventral abdomen in pedicel area, cuticular outgrowths near pedicel all absent. Dorsal scutum strongly sclerotized, in males covering full length of abdomen, no soft tissue visible from above (smaller in females), sometimes fused to epigastic scutum around midline, middle surface smooth, sides smooth, anterior half without projecting denticles. Epigastic scutum strongly sclerotized, surrounding pedicel, not protruding, small lateral sclerites absent, without lateral joints in females. Postepigastric scutum strongly sclerotized, in males covering nearly full length of abdomen, fused to epigastic scutum (in females smaller, not fused to epigastic scutum, except in *P. piedecusta* and *P. otun*); anterior margin unmodified, with short posteriorly directed lateral apodemes. Spinneret scutum present, incomplete ring, with fringe of long setae; supraanal scutum absent. Abdominal setae dark, needlelike, epigastic area setae not basally thickened; dense patch of setae anterior to spinnerets absent, interscutal membrane with setae. Colulus present, tiny, with pair of setae. Anterior lateral spinnerets bisegmented, basal segment without oblique membranous strip, posterior medians unisegmented, posterior laterals bisegmented (figs. 12, 42); spigots scanned only in *P. megarmata*, anterior laterals with single major ampullate gland spigot and four piriform gland spigots in males (fig. 13), five in females (fig. 43); posterior medians with four spigots in males (three with convex bases, presumably minor ampullate gland spigots, one with concave base, presumably aciniform gland spigot, fig. 14), 11 spigots in females (three with convex bases, eight with concave bases, fig. 44), posterior laterals with four spigots in males (three with convex bases, one with concave base, fig. 15), 10 spigots in females (three with convex bases, seven with concave bases, fig. 45).  

**Legs:** Femur IV not thickened, same size as femora I–III, patella plus tibia I shorter than carapace, tibia I unmodified, tibia IV specialized hairs on ventral apex, ventral scopula absent, metatarsi I, II mesopodial comb absent, metatarsi III, IV ventral scopula absent. Leg spines present on anterior femora, tibiae, metatarsi; femoral spines strong, tibial and metatarsal spines long, spines absent on posterior legs. Tarsi without inferior claw. Superior claws (scanned only in *P. megarmata*) of males with single row of 2–5 teeth set on inner margin (figs. 17–24), of females with two rows of teeth, outer margin with four teeth, most distal tooth much smaller than others, inner margin with two or three longer teeth (figs. 48–55). Trichobothrial base with numerous parallel ridges (fig. 25). Tarsal organs with three receptors on legs I, II (figs. 26, 27, 56, 57), two on legs III, IV, palps (figs. 28–30, 58–60).  

**Genitalia:** Male epigastic region with sperm pore (fig. 16) large, narrow, slitlike, situated between anterior and posterior spiracles, rebordered; furrow without Ω-shaped insertions, without specialized setae. Male palp of normal size, not strongly sclerotized, right and left palps symmetrical, proximal segments pale orange, cymbium, bulb yellow; embolus dark, without prolateral excavation; trochanter of normal size, unmodified; femur of normal size, two or more times as long as trochanter, without posteriorly rounded lateral dilation, attaching to patella basally; patella shorter than femur, not enlarged, without prolateral row of ridges, setae unmodified; tibia with three trichobothria (fig. 10); cymbium (figs. 8, 9) ovoid in dorsal view, completely fused with bulb, no seam visible, extending beyond distal tip of bulb, plumose setae, stout setae, distal patch of setae all absent; bulb shorter than cymbium, stout, elongated. Embolus with greatly elongated distal prong, proximal prong reduced. Female genitalia externally with distinct atrium (fig. 46), internally with pair of slight to pronounced protrusions situated near anterior spiracles (presumably serving as muscle attachments), sclerotized anterior
genitalic process, and membranous posterior receptaculum (fig. 47).

**DISTRIBUTION:** Known from Venezuela and Colombia.

**KEY TO SPECIES OF PRODYSDERINA**

1. Males (unknown in *P. filandia* and *P. otun*) .......................... 2
   - Females (unknown in *P. santander*) .......................... 8

2. Distal prong of embolus extending much farther prolaterally than base of embolus (figs. 68, 81, 114, 125, 135) .......................... 3
   - Distal prong of embolus not extending so far (figs. 92, 103) .......................... 7

3. Distal prong of embolus relatively narrow (figs. 68, 81) .......................... 4
   - Distal prong of embolus wider (figs. 114, 125, 135) .......................... 5

4. Palpal bulb relatively large (fig. 79) .......................... *megarmata*
   - Palpal bulb relatively small (fig. 66) .......................... *armata*

5. Distal prong of embolus sharply bent (fig. 125) .......................... *rasgon*
   - Distal prong of embolus otherwise (figs. 114, 135) .......................... *santander*

6. Base of distal prong much wider than tip (fig. 136) .......................... *piedecusta*
   - Base of distal prong not much wider than tip (fig. 115) .......................... *janelae*

7. Distal prong of embolus relatively wide at base (fig. 92) .......................... *rollardae*
   - Distal prong of embolus relatively narrow at base (fig. 103) .......................... *janetae*

8. Postepigastric scutum fused to epigastric scutum (figs. 108, 674) .......................... 9
   - Postepigastric scutum not fused to epigastric scutum .......................... 10

9. Genital atrium semicircular (fig. 109); pedicel margin not invaginated (fig. 108) .......................... *piedecusta*
   - Genital atrium oval (fig. 675); pedicel margin ventrally invaginated (fig. 674) .......................... *otum*

10. Aside from tuberculate setal bases, sternum surface smooth (as in fig. 118) .......................... *rasgon*
    - Sternum surface finely or coarsely reticulate .......................... 11

11. Anterior genital process relatively long (figs. 95, 106) .......................... 12
    - Anterior genital process shorter .......................... 13

12. Sclerite connecting apodemes relatively straight (fig. 95) .......................... *rollardae*
    - Sclerite connecting apodemes more sinuous (fig. 106) .......................... *janelae*

13. Conspicuous sclerotization obvious at level of anterior edge of postepigastric scutum (figs. 73, 84) .......................... 14
   - No conspicuous sclerotization at level of anterior edge of postepigastric scutum (fig. 147) .......................... *filandia*

14. Conspicuous sclerotization large, rounded (fig. 84) .......................... *megarmata*
    - Conspicuous sclerotization smaller (fig. 73) .......................... *armata*

**Prodysderina armata** (Simon), new combination

Figures 61–73

*Dysderina armata* Simon, 1893b: 441, pl. 9, fig. 9
(male holotype from Caracas, Distrito Capital, Venezuela, in MNHN, examined).

**Prodysderina armata:** Dumitrescu and Georgescu, 1987: 100, pl. 6 (transferred male to generic nomen nudum, described female).

**DIAGNOSIS:** Males resemble those of *P. megarmata* but have a much smaller palpal bulb (figs. 64–66); females lack the enlarged, sclerotized anterior portion of the posterior receptaculum found in that species (figs. 71–73).

**MALE** (PBI_OON 981, figs. 61, 64–70): Total length 1.76. ALE separated by less than their radius. Sternal surface coarsely reticulate, microsculpture everywhere but front. Anterior portion of endites sharply pointed. Dorsal scutum not fused to epigastric scutum. Postepigastric scutum almost semicircular. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-1p, II v2-2-0. Distal prong of embolus about four times as long as proximal prong, sharply bent at about 1/4 its length.

**FEMALE** (PBI_OON 981, figs. 62, 63, 71–73): Total length 2.14. Sternal surface coarsely reticulate, microsculpture everywhere but front. Anterior portion of endites sharply pointed. Dorsal scutum not fused to epigastric scutum. Postepigastric scutum almost semicircular. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-1p, II v2-2-0. Distal prong of embolus about four times as long as proximal prong, sharply bent at about 1/4 its length.
Figs. 61–73. *Prodysderina armata* (Simon), male (61, 64–70) and female (62, 63, 71–73). 61. Sternum and mouthparts, ventral view. 62. Abdomen, ventral view. 63. Same, anterior view. 64. Left palp, prolateral view. 65. Same, ventral view. 66, 70. Same, retrolateral view. 67. Left embolus, prolateral view. 68. Same, ventral view. 69. Same, retrolateral view. 71, 72. Genitalia, ventral view. 73. Same, dorsal view.

**Distribution:** Apparently widespread in northern Venezuela (Mérida, Aragua, Distrito Capital).

**Prodysderina megarmata,** new species

**Figures 1–60, 74–84

**Type:** Male holotype taken in cloud forest litter at an elevation of 1300 m at a site 17 km S of Las Tejerías and 12 km N of Tiara, Aragua, Venezuela (Aug. 8, 1987; S., J. Peck), deposited in AMNH (PBI_OON 20).

**Etymology:** The specific name refers to the male palpal bulb, which resembles that of *P. armata* but is much larger.

**Diagnosis:** Males resemble those of *P. armata* but have a much larger palpal bulb (figs. 77–79); females have a distinctively enlarged, rounded, sclerotized anterior portion of the posterior receptaculum (figs. 83, 84).

**Male** (PBI_OON 20, figs. 1–30, 74, 77–82): Total length 1.83. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior portion of endites sharply pointed. Dorsal scutum not fused to epigastric scutum. Postepigastric scutum almost semicircular. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-1p; II v3-2-0. Embolus with distal prong about four times as long as proximal prong, sharply bent at about 1/4 its length.

**Female** (PBI_OON 38040, figs. 31–60, 75, 76, 83, 84): Total length 2.13. Sternum with additional tuberculate setal bases near anterior groove. Dorsal scutum covering 1/2 to 3/4 of abdomen length, more than 1/2 to most of abdomen width, fused to epigastric scutum. Postepigastric scutum widely hexagonal, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-2-0. Posterior margin of genital atrium with rounded posterior extension representing sclerotized portion of posterior receptaculum.


**Distribution:** Apparently widespread in northern Venezuela (from Mérida to Miranda).

**Prodysderina rollardae,** new species

**Figures 85–95

**Type:** Male holotype from cloud forest litter taken at an elevation of 1450 m on the road to Pico Guacamaya, Estación Biológica Rancho Grande, Parque Nacional Henri Pittier, 10°21’30”N, 67°40’30”W, Aragua, Venezuela (May 14, 1998; R. Anderson), deposited in AMNH (PBI_OON 983).

**Etymology:** The specific name is a patronym in honor of Christine Rollard (MNHN), in recognition of her assistance, with the Simon collection in Paris, to all the PBI participants.

**Diagnosis:** Males resemble those of *P. janetae* but have a wider distal prong on the embolus (figs. 88–93); females have the sclerite connecting the apodemes relatively straight (figs. 87, 94, 95).

**Male** (PBI_OON 983, figs. 85, 88–93): Total length 1.82. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior tip of endites with small, dark, triangular process. Dorsal scutum not fused to epigastric scutum. Postepigastric scutum long, almost rectangular. Leg spination:
femora: I p0-0-2, r1-1-1; II p0-0-2; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-1p; II v3-2-0. Embolus with distal prong relatively wide, tip ledge-like, proximal prong short, sharp.

FEMALE (PBI_OON 984, figs. 86, 87, 94, 95): Total length 2.01. Dorsal scutum covering 1/2 to 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum widely hexagonal, covering about 1/2
of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-1r-1p. Anterior genital process very long, narrow, slightly expanded at about 3/4 its length.

**Other Material Examined: Venezuela:**


**Monagas:** Caripe, Cueva Guacharo, July 20–31, 1987, malaise, flight intercept traps, forest over coffee, elev. 700–750 m (S., J. Peck, AMNH PBI_OON 134, 985, 37877), 5♀.

**Distribution:** Northeastern Venezuela (Aragua, Monagas).

**Prodysderina janetae**, new species

_Figures 96–106_

**Type:** Male holotype from cloud forest litter taken at an elevation of 1850 m at a site 6.5 km SE Sanare in the Parque Nacional Yacambú, 9°41’51"N, 69°38’57"W, Lara, Venezuela (May 17, 1998; R. Anderson), deposited in AMNH (PBI_OON 987).

**Etymology:** The specific name is a patronym in honor of Janet Beccaloni (BMNH), in recognition of her assistance, with the Simon and Keyserling collections in London, to all the PBI participants.

**Diagnosis:** Males resemble those of _P. rollardae_ but have a narrower, more angular distal prong on the embolus (figs. 99–104); females have a more sinuous sclerite connecting the apodemes (figs. 98, 105, 106).

**Male** (PBI_OON 987, figs. 96, 99–104): Total length 2.12. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Distal tip of endites with small, triangular, anteriorly directed process. Dorsal scutum not fused to epigastic scutum. Postepigastric scutum long, almost rectangular. Leg spination: femur I p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2. Distal prong of embolus with two sharp bends, distally narrowed, proximal prong extremely narrow.

**Female** (PBI_OON 992, figs. 97, 98, 105, 106): Total length 2.40. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum widely hexagonal, covering about 1/2 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2. Anterior genital process very long, very narrow throughout its length.

**Other Material Examined: Venezuela:**


**Trujillo:** old road between Boconó and Trujillo, July 9–28, 1986, elev. 2500 m (B. Gill, CNC PBI_OON 38130), 2♂, 1♀.

**Distribution:** Western Venezuela (Trujillo, Lara).

**Prodysderina piedecuesta**, new species

_Figures 107–117_

**Types:** Male holotype, female allotype, and female paratype taken in a Winkler trap in a high Andean forest at an elevation of 2150 m at the Estación Experimental y Demostrativa El Rasgón, Piedecuesta, 7°03’N, 72°57’W, Santander, Colombia (Sept. 21–23, 2004; I Quintero, E. González), deposited in IAVH (PBI_OON 994).

**Etymology:** The specific name is a noun in apposition taken from the type locality.

**Diagnosis:** Males can easily be recognized by the long, distally sinuous distal prong on the embolus (figs. 110–115); females resemble...
96. Sternum and mouthparts, ventral view.  
97. Abdomen, ventral view.  
98, 105. Genitalia, ventral view.  
99. Left palp, prolateral view.  
100. Same, ventral view.  
101. Same, retrolateral view.  
102. Left embolus, prolateral view.  
103. Same, ventral view.  
104. Same, retrolateral view.  
106. Genitalia, dorsal view.
those of *P. otun* in having the postepigastric scutum completely fused to the epigastric scutum (fig. 108), but have a semicircular, rather than oval, genital atrium (fig. 109).

**MALE** (PBI_OON 994, figs. 107, 110–115): Total length 2.50. ALE separated by their radius to diameter. Sternum surface finely reticulate, microsculpture everywhere but front. Distal tip of endites forming sharp, triangular projection. Dorsal scutum not fused to epigastric scutum. Postepigastric scutum long, almost rectangular. Leg spination: femora: I p0-0-2, r1-1-0; II p0-0-2, r1-1-0; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Embolus with distal prong sinuous, about three times as long as narrow proximal prong.

**FEMALE** (PBI_OON 994, figs. 108, 109, 116, 117): Total length 2.90. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, fused to epigastric scutum. Postepigastric scutum long, semicircular, extending to nearly full length of abdomen, fused to epigastric scutum. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-1r-1p. Anterior genitalic process much wider posteriorly than anteriorly.

**OTHER MATERIAL EXAMINED:** Colombia: Santander: Estación Experimental y Demostrativa El Rasgón, Piedecuesta, 7°03'N, 72°57'W, Sept. 21–23, 2004, dung trap, high Andean forest, elev. 2150 m (I Quintero, E. González, IAVH PBI_OON 994, 995), 1♂, same, Winkler trap (IAVH 108133, 108140, PBI_OON 996, 997), 1♂, 1♀.

**DISTRIBUTION:** Northern Colombia (Santander).

*Prodysderina rasgon,* new species

**TYPE:** Male holotype taken in a Winkler trap in an Andean forest at an elevation of 2150 m in the Estación Experimental y Demostrativa El Rasgón, Piedecuesta, 7°03'N, 72°57'W, Santander, Colombia (Sept. 21–23, 2004; I. Quintero, E. González), deposited in IAVH (108133, PBI_OON 922).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males have a relatively simple embolus, which is broad throughout most of its length and bears a tiny, proximal prong at about half its length (figs. 131–136); they have less granulation immediately behind the eyes, and a rougher sternal surface (fig. 129), than do both sexes of the sympatric species *P. rasgon*.

**MALE** (PBI_OON 922, figs. 118, 121–126): Total length 2.30. ALE separated by their radius to diameter. Sternum surface smooth, microsculpture absent. Anterior portion of endites sharply pointed. Dorsal scutum fused to epigastric scutum. Postepigastric scutum long, semicircular. Leg spination: femora: I p0-0-2, r1-1-0; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-2-0. Embolus with distal prong folded, proximal prong short, sharply pointed.

**FEMALE** (PBI_OON 923, figs. 119, 120, 127, 128): Total length 2.73. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/2 of abdomen. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-2-0. Round-ed lobe present at base of long, distally expanded anterior process.

**OTHER MATERIAL EXAMINED:** One female taken with the male (IAVH PBI_OON 923).

**DISTRIBUTION:** Northern Colombia (Santander).

*Prodysderina santander,* new species

**TYPE:** Male holotype taken in a Winkler trap in an Andean forest at an elevation of 2150 m in the Estación Experimental y Demostrativa El Rasgón, Piedecuesta, 7°03'N, 72°57'W, Santander, Colombia (Sept. 21–23, 2004; I. Quintero, E. González), deposited in IAVH (108133, PBI_OON 924).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males have a relatively simple embolus, which is broad throughout most of its length and bears a tiny, proximal prong at about half its length (figs. 131–136); they have less granulation immediately behind the eyes, and a rougher sternal surface (fig. 129), than do both sexes of the sympatric species *P. rasgon*.

**MALE** (PBI_OON 924, figs. 129, 131–136): Total length 2.58. ALE separated by a transverse ridge at about half the embolar length (figs. 121–126); females have a straight anterior margin on the genitalic atrium (figs. 120, 127, 128).

118. Sternum and mouthparts, ventral view.
119. Abdomen, ventral view.
120, 127. Genitalia, ventral view.
121. Left palp, prolateral view.
122. Same, ventral view.
123. Same, retrolateral view.
124. Left embolus, prolateral view.
125. Same, ventral view.
126. Same, retrolateral view.
128. Genitalia, dorsal view.
their radius to diameter. Sternum surface smooth, microsculpture absent, few additional tuberculate setal bases situated more medially and behind anterior sternal groove.

Anterior portion of endites sharply pointed. Dorsal scutum fused to epigastric scutum. Postepigastric scutum long, semicircular. Leg spination: femur I p0-0-2, r1-1-0; tibiae:

I v4-4-1p; II v4-4-0; metatarsi: I v2-2-1p; II v2-2-0. Embolus with distal prong twisted proximally and distally, proximal prong reduced to small, sharp protuberance.

**FEMALE:** Unknown.

**OTHER MATERIAL EXAMINED:** None.

**DISTRIBUTION:** Northern Colombia (Santander).

**Prodysderina filandia**, new species

Figures 130, 137–147

**TYPE:** Female holotype taken by canopy fogging at an elevation of 1975 m at Finca El Palacio, Cañon del Río Barbás, Filandia, 4°41.436' N, 75°38.827' W, Quindío, Colombia (Mar. 13, 2005; M. Pimienta), deposited in IAVH (108158, PBI_OON 998).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Females can easily be recognized by the divided appearance of the genital atrium (figs. 139, 146, 147). The coarsely reticulate surface of the sternum indicates that these specimens are not the unknown females of *P. santander*.

**MALE:** Unknown.

**FEMALE (PBI_OON 998, figs. 130, 137–147):** Total length 1.61. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 2/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-0; II p0-0-2, r1-0-0; tibiae I, II v4-4-1p; metatarsi: I v2-2-1p; II v3-0-2. Anterior genital process short, wide.

**OTHER MATERIAL EXAMINED:** Colombia: Quindío: Reserva Forestal Bremen, Filandia, 4°41.143' N, 75°37.645' W, Feb. 22, 2005, canopy fogging, elev. 1945 m (M. Pimienta, IAVH 108147, PBI_OON 999), 1♀; Valle del Cauca: near Cali, Dec. 15, 1971, elev. 1300 m (W. Eberhard, MCZ PBI_OON 38075), 1♀; Río Yotoco, Sept. 2002, elev. 1500 m (E. Florez, ICN 4097, PBI_OON 1000), 1♀.

**DISTRIBUTION:** Western Colombia (Valle del Cauca, Quindío).

**Prodysderina otun**, new species

Figures 673–677

**TYPES:** Female holotype and three female paratypes from a Berlese sample of early secondary forest litter taken at an elevation of 1800 m in the Otún Quimbaya Flora and Fauna Sanctuary, near La Suiza, Pereira, 4°44' N, 75°35' W, Risaralda, Colombia (June 10, 2005; A. Sabogal), deposited in ICN (PBI_OON 49887).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Females can easily be recognized by the very long, medial invagination on the ventral surface of the pedicel tube (fig. 674); the genital atrium is large, oval, and undivided (figs. 676, 677). The coarsely reticulate surface of the sternum indicates that these specimens are not the unknown females of *P. santander*.

**MALE:** Unknown.

**FEMALE (PBI_OON 49887, figs. 673–677):** Total length 2.38. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 2/3 of abdomen length, fused to epigastric scutum. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2, r1-0-0; tibiae I, II v4-4-1p; metatarsi: I v2-2-2; II v2-1p-2. Genital atrium large, ovoid, undivided.

**OTHER MATERIAL EXAMINED:** None.

**DISTRIBUTION:** Western Colombia (Risaralda).

**Aschnaonops** Makhan and Ezzatpanah

**Aschnaonops** Makhan and Ezzatpanah, 2011: 1 (type species by original designation *Aschnaonops aschnae* Makhan and Ezzatpanah).

**DIAGNOSIS:** Members of this genus resemble those of *Prodysderina* and *Bidysderina* in sternal and spiracular characters, but lack the elongated distal/reduced proximal embolar prong configuration and instead have a twisted (and usually basally widened) embolus in males (figs. 214, 363, 439, 479, 563), and a greatly reduced (or absent) genital
atrium in females (figs. 233, 288, 370, 413, 559).

**DESCRIPTION:** Total length of males 1.5–2.9, of females 1.6–3.5. Carapace, sternum, mouthparts, abdominal scuta, legs orange-brown, without pattern; abdomen soft portions white, without pattern. **Cephalothorax:** Carapace broadly oval in dorsal view (figs. 148, 178), anteriorly narrowed to 0.49 times its maximum width or less, pars cephalica strongly elevated in lateral view (figs. 149, 179), anterolateral corners with
strongly sclerotized, triangular extension, pars thoracica with rounded postero-lateral corners, without depressions or radiating rows of pits, postero-lateral edge without pits, posterior margin not bulging below posterior rim, postero-lateral surface without spikes; surface of elevated portion of pars cephalica granulate, sides granulate; fovea absent, lateral margin straight, rebordered, with blunt, seta-bearing denticles (fig. 149, except in A. yasuni and A. orito, which have sharp denticles on lateral margins plus enlarged postero-lateral corners); plumose setae near posterior margin of pars thoracica absent; marginal, nonmarginal pars cephalica, pars thoracica setae light, needlelike, scattered. Clypeus margin strongly rebordered, sinuous in front view, vertical in lateral view, high, ALE separated from edge of carapace by their radius or more, median projection present, formed by fused small, triangular chilum (figs. 150, 180); setae light, needlelike. Eyes six, well developed, ALE largest, oval, PME squared, PLE oval; posterior eye row recurved from above, procurred from front; ALE separated by less or more than their radius, ALE-PLE separated by less than ALE radius, PME touching throughout most of their length, PLE-PME separated by less than PME radius. Sternum (figs. 156, 186) wider than long, not fused to carapace, surface without transverse ridges or pits, median concavity and hair tufts absent, with radial furrows between coxae I–II, II–III, III–IV, furrows with rows of small pits, radial furrow opposite coxae III absent, sickle-shaped structures absent, anterior margin with continuous transverse groove, posterior margin not extending posteriorly of coxae IV but with posterior hump, anterior corners excavated, lateral margins with infracoxal grooves bearing anterior, posterior openings, distance between coxae approximately equal, extensions of precoxal triangles absent, lateral margins with bridges to coxae; setae sparse, dark, needlelike, densest laterally, originating from surface, posterior and lateral margins with conspicuous, tuberculate setal bases. Chelicerae slightly divergent, anterior face with slight swelling; usually with one large tooth on promargin, one smaller tooth on retromargin (figs. 151, 152, 181, 182; scanned only in A. silvae); fangs without toothlike projections, directed medially, shape normal, without prominent basal process, tip unmodified; setae dark, needlelike, densest medially; paturon inner margin with scattered setae, distal region, posterior surface unmodified, promargin with row of flattened setae, inner margin unmodified, laminate groove absent. Labium (figs. 153, 183) triangular, not fused to sternum, anterior margin not indented at middle, same as sternum in sclerotization; with six or more setae on anterior margin, subdistal portion with unmodified setae. Endites (figs. 153, 154, 183, 184) same as sternum in sclerotization, distally not excavated, serrula usually absent in males, reduced in females (fig. 185; scanned only in A. silvae), anterior portion modified in males, posterior portion unmodified; labrum with rounded projection (fig. 155). Female palp (figs. 187, 188) without claw or spines; tibia with three trichobothria (fig. 189), patella without prolateral row of ridges, tarsus elongate. Abdomen: Ovoid, without long posterior extension, rounded posteriorly, interscutal membrane without rows of small sclerotized platelets. Booklung covers large, ovoid, without setae, anterolateral edge unmodified; posterior spiracles connected by groove, groove continued beyond spiracles almost to lateral edge of postepigastric scutum (except in A. cristalina and A. paez, where groove apparently shifted to anterior of spiracles, figs. 299, 509). Pedicel tube medium, ribbed, scutopedicel region unmodified, scutum extending far dorsal of pedicel, plumose hairs, matted setae on anterior ventral abdomen in pedicel area, cuticular outgrowths near pedicel all absent. Dorsal scutum strongly sclerotized, in males covering most to all of abdomen length, width (smaller in females), sometimes fused to epigastric scutum around midline, middle surface smooth, sides smooth, anterior half without projecting denticles. Epigastric scutum strongly sclerotized, surrounding pedicel, not protruding, small lateral sclerites absent, without lateral joints in females. Postepigastric scutum strongly sclerotized, in males covering nearly full length of abdomen, fused to epigastric scutum (in females smaller, not fused to epigastric scutum); anterior margin unmodified, with short posteriorly directed lateral apodemes.
Spinneret scutum present (except in *A. pedro* and *A. cristalina*), incomplete ring, with fringe of long setae; supraanal scutum absent. Abdominal setae dark, needlelike, epigastric area setae not basally thickened; dense patch of setae anterior to spinnerets absent, inter- scutal membrane with setae. Colulus present, tiny, with pair of setae. Anterior lateral spinnerets bisegmented, basal segment without oblique membranous strip, posterior medians unisegmented, posterior laterals bisegmented (figs. 158, 193); spigots scanned only in *A. silvae*, anterior laterals with single major ampullate gland spigot and four piriform gland spigots in males (fig. 159), seven in females (fig. 194); posterior medians with three spigots in males (two with convex bases, presumably minor ampullate gland spigots, one with concave base, presumably aciniform gland spigot, fig. 160), 10 spigots in females (three with convex bases, seven with concave bases, fig. 195), posterior laterals with three spigots in males (two with convex bases, one with concave base, fig. 161), 10 spigots in females (three with convex bases, seven with concave bases, fig. 196). Legs: Femur IV not thickened, same size as femora I–III, patella plus tibia I shorter than carapace, tibia I unmodified, tibia IV specialized hairs on ventral apex, ventral scopula absent, metatarsi I, II mesoapical comb absent, metatarsi III, IV ventral scopula absent. Leg spines present on anterior femora, tibiae, metatarsi; femoral spines strong, tibial and metatarsal spines long, spines absent on posterior legs. Tarsi without inferior claw. Superior claws (scanned only in *A. silvae*) of males with single row of 3–6 teeth set on inner margin (figs. 166–173), of females with two rows of teeth, outer margin with four teeth, distalmost tooth much smaller than others, inner margin with two or three longer teeth (figs. 197–204). Trichobothrial base with numerous parallel ridges (fig. 192). Tarsal organs with three receptors on legs I, II (figs. 174, 175, 205, 206), two on legs III, IV, palps (figs. 176, 177, 207). Genitalia: Male epigastric region with sperm pore (fig. 157) situated between anterior and posterior spiracles, rebordered; furrow without Ω-shaped insertions, without specialized setae. Male palp of normal size, not strongly sclerotized, right and left palps symmetrical (except in *A. marta*), proximal segments pale orange, cymbium, bulb yellow; embolus dark, without prolateral excavation; trochanter of normal size, unmodified; femur of normal size, two or more times as long as trochanter, without posteriorly rounded lateral dilation, attaching to patella basally; patella shorter than femur, not enlarged, without prolateral row of ridges, setae unmodified; tibia with three trichobothria (fig. 162); cymbium (figs. 163, 165) ovoid in dorsal view, completely fused with bulb, no seam visible, extending beyond distal tip of bulb, plumose setae, stout setae absent, distal patch of setae sometimes present; bulb shorter than cymbium, stout, elongated. Embolus typically widened, basally twisted (fig. 164). Female genitalia externally with atrium greatly reduced or absent (fig. 190), internally with pair of slight to pronounced protrusions situated near anterior spiracles (presumably serving as muscle attachments), sclerotized anterior genitalic process, often accompanied by transverse basal sclerite (fig. 191).

**DISTRIBUTION:** Peru north to Puerto Rico.

**KEY TO SPECIES FROM PERU AND ECUADOR**

1. Males (unknown in *A. jatun* and *A. marshalli*) ........................................ 2
   - Females ........................................ 6
2. Embolus claw shaped in retrolateral view (figs. 216, 250) ............................ 3
   - Embolus not claw shaped .............. 4
3. Distal prong of embolus with blunt tip (fig. 216). ................................... *silvae*
   - Distal prong of embolus with sharply pointed tip (fig. 250) ..................... *cosanga*
4. Embolus relatively long (fig. 261). ........................................ *ramirezii*
   - Embolus relatively short (figs. 227, 239) ........................................... 5
5. Posterolateral corners of carapace enlarged (as in fig. 219). .................... *yasuni*
   - Posterolateral corners of carapace not enlarged. .................................. 7
6. Posterolateral corners of carapace enlarged (fig. 219). .......................... *yasuni*
   - Posterolateral corners of carapace not enlarged. .................................. 7
7. Pedicel tube with ventral notch (figs. 254, 270) ...................................... 8
   - Pedicel tube without notch .......... 9
8. Anterior genitalic process with procured anterior tip (fig. 273) .......... .......................... marshalli
    Anterior genitalic process otherwise (fig. 263) .......... ramirezii

9. Anterior genitalic process with wide, rectangular anterior expansion (fig. 218) .... silvae
    Anterior genitalic process otherwise .......... 10

10. Anterior genitalic process relatively long, slightly widened both at base and tip (fig. 241) .......... tiputini
     Anterior genitalic process relatively short, uniform in width (figs. 252, 268) .......... 11

11. Apodemes basally enlarged (fig. 268) .......... jatun
     Apodemes otherwise (fig. 252) .......... cosanga

Aschnaonops silvae, new species

FIGURES 148–218

TYPES: Male holotype, female allotype, and four male paratypes taken by canopy fogging at Pithecia, 05°11’S, 74°42’W, Loreto, Peru (May 13–30, 1990; T. Erwin, D. Silva), deposited in MUSM (PBI_OON 818).

ETYMOLOGY: The specific name is a patronym in honor of one of the collectors, the leading Peruvian arachnologist Diana Silva.

DIAGNOSIS: Males can easily be recognized by the overhanging distal prong and the spiniform proximal prong of the embolus (figs. 211–216), females by the distinctly shaped sclerotization visible through the cuticle at the base of the epigastric scutum (figs. 210, 217) and the wide, rectangular anterior expansion on the anterior genitalic process (fig. 218).

MALE (PBI_OON 821, figs. 148–177, 208, 211–216): Total length 1.69. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites distally narrowed into sharply pointed projection. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to about 3/4 of abdomen length. Leg spination: femora I p0-0-1; tibiae I, II v4-4-0; metatarsi I, II v2-2-0. Sperm pore large, narrow, slitlike. Cymbium with distal patch of setae. Embolus ventral portion with very narrow, spiniform, arched projection, dorsal portion with thicker arched projection.

FEMALE (PBI_OON 821, figs. 178–207, 209, 210, 217, 218): Total length 1.86. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, extending to about 2/3 of abdomen length. Leg spination: femora: I p0-0-2, r2-1-0; II p0-0-2, r1-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi I, II v3-2-0. Posterior portion of anterior genitalic process surrounded by distinctive basal sclerite, sclerite longer ventrally than dorsally.

Aschnaonops Yasuni, new species

Figures 219–230

Type: Male holotype from a Berlese sample of humid forest litter taken at an elevation of 295 m at the Estación Científica Yasuni, 0.067428°S, 76.39764°W, Orellana, Ecuador (Dec. 1–5, 2009; M. Ramírez, Niarchos Exped.), deposited in QCAZ (PBI_OON 826).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Both sexes can easily be recognized by the protrusions at the posterolateral corners of the carapace and the sharp denticles on the lateral margins of the carapace (fig. 219), features shared only with the Colombian species A. orito. Males of A. orito are unknown, but females of A. Yasuni have the anterior genital process widened both anteriorly and posteriorly (fig. 230).

Male (PBI_OON 826, figs. 219, 220, 222–227): Total length 2.24. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior portion of endites with triangular, heavily sclerotized ventral process not reaching as far distally as more dorsal, less heavily sclerotized tip. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, semicircular, extending nearly full length of abdomen. Leg spination: femora: I p0-0-2, r0-1-1; II p0-0-1, r0-1-0; tibiae: I v4-4-2; II v4-4-1lp; metatarsi: I v2-2-2; II v2-2-1p. Sperm pore large, narrow, slitlike. Cymbium with distal patch of setae. Embolus with distal prong more heavily sclerotized than proximal prong.

Female (PBI_OON 827, figs. 221, 228–230): Total length 2.96. ALE separated by their radius to diameter. Postepigastric scutum almost semicircular, extending to about 2/3 of abdomen length. Leg spination: femora I, II p0-0-2, r0-1-1; tibiae: I v4-4-2; II v4-4-1lp; metatarsi I, II v2-2-2. Anterior genital process relatively wide, expanded anteriorly.

Other Material Examined: Ecuador: Napo: Estación Biológica Jatun Sacha, 1°03′57.5″S, 77°37′00.2″W, Dec. 1–5, 2009, Berlese, wet forest litter, elev. 410 m (C. Grismando, F. Labarque, Niarchos Exped., MACN PBI_OON 30593), 1♀; Estación Biológica Yanayacu, 0°35′55″S, 77°53′43.1″W, Nov. 25–26, 2009 (Niarchos Exped., MACN PBI_OON 30606), 1♂; Parque Nacional Napo-Galeras, 0°44′00″S, 77°28′07″W, Nov. 27, 2009, elev. 1005 m (Niarchos Exped., AMNH PBI_OON 827), 1♀. Tungurahua: 22.7 km E Baños, May 22, 1993, litter near stream, elev. 4650 ft (L. Herman, AMNH PBI_OON 66), 1♀.

Distribution: Ecuador (Napo, Orellana, Tungurahua).

Aschnaonops Tiputini, new species

Figures 231–241

Type: Male holotype and female allotype taken at an elevation of 220–250 m at the Estación de Biodiversidad Tiputini, near the Parque Nacional Yasuni, 0°37′55″S, 76°08′39″W, Orellana, Ecuador (July 4, 1998; T. Erwin et al.), deposited in USNM (PBI_OON 828).

Etymology: The specific name is a noun in apposition taken from the type locality.
219. Carapace, dorsal view.  
220. Sternum and mouthparts, ventral view.  
221. Abdomen, ventral view.  
222. Left palp, prolateral view.  
223. Same, ventral view.  
224. Same, retrolateral view.  
225. Left embolus, prolateral view.  
226. Same, ventral view.  
227. Same, retrolateral view.  
228, 229. Genitalia, ventral view.  
230. Same, dorsal view.

231. Sternum and mouthparts, ventral view.
232. Abdomen, ventral view.
233, 240. Genitalia, ventral view.
234. Left palp, prolateral view.
235. Same, ventral view.
236. Same, retrolateral view.
237. Left embolus, prolateral view.
238. Same, ventral view.
239. Same, retrolateral view.
241. Genitalia, dorsal view.
Diagnosis: Both sexes resemble those of A. yasuni but lack protrusions at the posterolateral corners of the carapace and have shorter, blunter tubercles on the lateral margins of the carapace. The proximal margin of the distal prong of the embolus is more sinuous than in A. yasuni (fig. 238), and the sclerite at the base of the anterior genitalic process is more heavily sclerotized (fig. 241).

Male (PBI_OON 828, figs. 231, 234–239): Total length 1.83. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites distally with ventral, triangular projection occupying about half of endite width, not reaching as far anteriorly as dorsal portion. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, semicircular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r0-1-1; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-1p; II v2-2-0. Sperm pore large, narrow, slitlike. Cymbium with distal patch of setae. Embolus with proximal prong less heavily sclerotized than distal prong.

Female (PBI_OON 828, figs. 232, 233, 240, 241): Total length 1.88. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, extending to about 2/3 of abdomen length. Leg spination: femora I, II p0-0-2, r0-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi I, II v2-2-1p. Anterior genitalic process relatively wide, slightly expanded anteriorly.

Other Material Examined: Ecuador: Orellana: Estación de Biodiversidad Tiputini, near Parque Nacional Yasuni, 0°37’55”S, 76°08’39”W, Oct. 24, 1998, elev. 220–250 m (T. Erwin et al., USNM PBI_OON 833), 1♀; Estación Científica Yasuni, 0.067428°S, 76.39764°W, Dec. 1–5, 2009, Berlese, wet forest litter, elev. 295 m (M. Ramírez, MACN PBI_OON 30595, 30830), 4♂ (including Eva Gaußlomme sequencing voucher); 1 km S Onkone Gare Camp, 0°39’25.77”S, 76°27’10.8”W, Reserva Etnica Waorani, June 26, 1996, elev. 216 m (T. Erwin et al., USNM PBI_OON 834, 936, 37682), 1♂, 2♀.

Distribution: Northeastern Ecuador (Orellana).

Aschnaoonops cosanga, new species Figures 242–252

Type: Female holotype taken in montane evergreen forest litter at an elev. of 2150 m at a site 2.5 km W of Cosanga, 0°35’24”S, 77°53’19”W, Napo, Ecuador (Nov. 5, 1999; R. Anderson), deposited in AMNH (PBI_OON 823).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Females have a short postepigastric scutum and an anteriorly narrow anterior genital process (figs. 243, 252); the single male here tentatively assigned to the species resembles that of A. silvae but has a retrolaterally flatter embolar base (figs. 248–250).

Male (PBI_OON 835, figs. 242, 245–250): Total length 1.85. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior part of endites with narrow, triangular projection. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, semicircular, extending to nearly full length of abdomen. Leg spination: femur I p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-1p; II v2-2-0. Sperm pore small, circular. Cymbium with distal patch of setae. Embolus with translucent median prong between dark proximal and distal prongs.

Female (PBI_OON 823, figs. 242, 244, 251, 252): Total length 2.11. Dorsal scutum covering 1/2 to 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, extending to about 2/3 of abdomen length. Leg spination: femora I, II p0-0-2, r0-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi I, II v2-2-1p. Anterior genitalic process relatively wide, slightly expanded anteriorly.

Other Material Examined: Ecuador: Carchi: Estación Biológica Guandera, ca. 15 km E San Gabriel, 0°35’11”N, 77°44’372”W, Nov. 1, 1999, clusia/bromeliad forest litter, elev. 3500 m (R. Anderson, AMNH PBI_OON
A. marshalli resemble those of B. Baehr, Niarchos Exped., MACN PBI_OON 30594). The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males can be recognized by the elongate, distally flared embolus (figs. 259–261) and the presence of a distinct, triangular protuberance on the anterior surface of the cheliceral paturon, not far from the base of the fang (fig. 253); females resemble those of A. marshalli, A. merida, and A. trujillo in having a ventrally notched pedicel tube (fig. 254), but have a narrow genital atrium with strong margins (figs. 262, 263).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Females resemble those of B. Baehr, Niarchos Exped., MACN PBI_OON 30594). The specific name is a noun in apposition taken from the type locality.

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.
Figs. 253–263. Aschnaonops ramirezi, new species, male (253, 256–261) and female (254, 255, 262, 263).

253. Sternum and mouthparts, ventral view.
254. Abdomen, ventral view.
255, 262. Genitalia, ventral view.
256. Left palp, prolateral view.
257. Same, ventral view.
258. Same, retrolateral view.
259. Left embolus, prolateral view.
260. Same, ventral view.
261. Same, retrolateral view.
263. Genitalia, dorsal view.
closer to each other than in that species (fig. 268).

**MALE**: Unknown.

**FEMALE** (PBI_OON 30594, figs. 264–268): Total length 1.82. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-1, r1-1-0; tibiae: I v4-4-2; II v4-4-0; metatarsi: I v2-1p-2; II v2-2-0. Anterior genitalic process with basal projections, not expanded anteriorly.

**OTHER MATERIAL EXAMINED**: None.

**DISTRIBUTION**: Ecuador (Napo).

*Aschnaonops marshalli*, new species

**Figures** 269–273

**TYPES**: Female holotype taken by sifting rainforest litter 20–30 yards from the edge of a lake at Limoncocha, near Río Negro, Sucumbios, Ecuador (Dec. 18, 1984; S. Marshall), deposited in AMNH (PBI_OON 37875).

**ETYMOLOGY**: The specific name is a patronym in honor of the collector of the type, Sam Marshall.

**DIAGNOSIS**: Females resemble those of *A. ramirezi*, *A. merida*, and *A. trujillo* in having a ventrally notched pedicel tube (fig. 270), but have a very small, unsclerotized atrial area (figs. 271–273).

**MALE**: Unknown.

**FEMALE** (PBI_OON 37875, figs. 269–273): Total length 1.60. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum short, almost rectangular, extending to about 2/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2, r0-1-1; tibiae: I v4-4-1p; II v4-4-0; metatarsi: I v2-2-1p; II v2-2-0. Anterior genitalic process short, with expanded, pro-curved anterior tip.

**OTHER MATERIAL EXAMINED**: None.

**DISTRIBUTION**: Ecuador (Sucumbios).

**KEY TO SPECIES FROM COLOMBIA**

1. Posterolateral corners of carapace enlarged (as in fig. 219) ................................ orito
   – Posterolateral corners of carapace not enlarged .............................................. 2
2. Aside from tuberculate setal bases, sternum surface smooth (fig. 313) ................. 3
   – Sternum surface coarsely reticulate ............................................................... 5
3. Embolus relatively long (fig. 328); sclerite at base of anterior genitalic process relatively long (fig. 334) ................................................................. similis
   – Embolus relatively short (figs. 317, 361); sclerite at base of anterior genitalic process relatively short (figs. 323, 367) ......................... 4
4. Embolus extended dorsally (fig. 321); anterior genitalic process slightly expanded, asymmetrical at tip (fig. 323) ........................................ meta
   – Embolus not extended dorsally (fig. 365); anterior genitalic process rocket shaped, not expanded anteriorly (fig. 367) .................. chingaza
5. Males (unknown in *A. paez*) .............................................................. 6
   – Females (unknown in *A. leticia* and *A. marta*) ........................................ 14
6. Right bulb much less inflated than left bulb (figs. 394–399) ................................ martia
   – Right and left bulbs equally inflated .............................................................. 7
7. Embolus claw shaped in retrolateral view (figs. 216, 294, 310, 354) ................. 8
   – Embolus not claw shaped ............................................................................. 11
8. Distal prong of embolus with proximally directed, blunt tip (fig. 216) ............... silvae
   – Distal prong of embolus otherwise ................................................................. 9
9. Proximal prong of embolus without accessory spur (fig. 354) ......................... alban
   – Proximal prong of embolus with accessory spur (figs. 294, 310) ................. 10
10. Accessory spur situated near tip of proximal prong (fig. 294) ......................... pira
    – Accessory spur situated near base of proximal prong (fig. 310) .................. huila
11. Embolus prolaterally with long spur (fig. 385) .............................................. pedro
    – Embolus prolaterally with flattened plate with serrate edge (figs. 280, 341, 374) 12
12. Embolus with invaginated dorsal margin (fig. 341) ......................................... propinquus
    – Embolus without invaginated dorsal margin (figs. 280, 374) ....................... 13
13. Embolus relatively narrow (fig. 282) ...................................................... leticia
    – Embolus relatively wide (fig. 376) ................................................................. pamplona
14. Anterior genitalic process without distinct anterior expansion (figs. 300, 301) .... paez
    – Anterior genitalic process with distinct anterior expansion (as in fig. 218) ........ 15
15. Expansion on anterior genitalic process wide, rectangular (figs. 218, 312, 356, 378) 16

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KEY TO SPECIES FROM COLOMBIA

1. Posterolateral corners of carapace enlarged (as in fig. 219) ................................ orito
   – Posterolateral corners of carapace not enlarged .............................................. 2
2. Aside from tuberculate setal bases, sternum surface smooth (fig. 313) ................. 3
   – Sternum surface coarsely reticulate ............................................................... 5
3. Embolus relatively long (fig. 328); sclerite at base of anterior genitalic process relatively long (fig. 334) ................................................................. similis
   – Embolus relatively short (figs. 317, 361); sclerite at base of anterior genitalic process relatively short (figs. 323, 367) ......................... 4
4. Embolus extended dorsally (fig. 321); anterior genitalic process slightly expanded, asymmetrical at tip (fig. 323) ........................................ meta
   – Embolus not extended dorsally (fig. 365); anterior genitalic process rocket shaped, not expanded anteriorly (fig. 367) .................. chingaza
5. Males (unknown in *A. paez*) .............................................................. 6
   – Females (unknown in *A. leticia* and *A. marta*) ........................................ 14
6. Right bulb much less inflated than left bulb (figs. 394–399) ................................ martia
   – Right and left bulbs equally inflated .............................................................. 7
7. Embolus claw shaped in retrolateral view (figs. 216, 294, 310, 354) ................. 8
   – Embolus not claw shaped ............................................................................. 11
8. Distal prong of embolus with proximally directed, blunt tip (fig. 216) ............... silvae
   – Distal prong of embolus otherwise ................................................................. 9
9. Proximal prong of embolus without accessory spur (fig. 354) ......................... alban
   – Proximal prong of embolus with accessory spur (figs. 294, 310) ................. 10
10. Accessory spur situated near tip of proximal prong (fig. 294) ......................... pira
    – Accessory spur situated near base of proximal prong (fig. 310) .................. huila
11. Embolus prolaterally with long spur (fig. 385) .............................................. pedro
    – Embolus prolaterally with flattened plate with serrate edge (figs. 280, 341, 374) 12
12. Embolus with invaginated dorsal margin (fig. 341) ......................................... propinquus
    – Embolus without invaginated dorsal margin (figs. 280, 374) ....................... 13
13. Embolus relatively narrow (fig. 282) ...................................................... leticia
    – Embolus relatively wide (fig. 376) ................................................................. pamplona
14. Anterior genitalic process without distinct anterior expansion (figs. 300, 301) .... paez
    – Anterior genitalic process with distinct anterior expansion (as in fig. 218) ........ 15
15. Expansion on anterior genitalic process wide, rectangular (figs. 218, 312, 356, 378) 16
Aschnaoonops leticia, new species
Figures 274, 277–282

**TYPE:** Male holotype taken in malaise trap at Leticia, Amazonas, Colombia (July 9–11, 1970; J. Campbell), deposited in CNC (PBI_OON 38127).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males have a distally arrow-shaped embolus (figs. 280–282).

**MALE** (PBI_OON 38127, figs. 274, 277–282): Total length 1.55. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior portion of endites with broadly triangular ventral process. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum almost rectangular, extending to about 3/4 of abdomen length. Leg spination: femur I p0-0-2, r1-1-0; tibiae: I v4-4-1p; II v4-4-0; metatarsi: I v2-2-1p; II v2-2-0. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus with prolateral portion distally widened in ventral view, tip relatively small.

**FEMALE:** Unknown.

**OTHER MATERIAL EXAMINED:** None.

**DISTRIBUTION:** Southern Colombia (Amazonas).

Aschnaoonops orito, new species
Figures 275, 276, 283–285

**TYPE:** Female holotype taken at an elevation of 850 m at Orito, Vereda Libano Predio, 0°40′53″N, 77°02′07″W, Putomayo, Colombia (Mar. 10, 2003; I. Grivaldo, F. Quevedo), deposited in ICN (4099, PBI_OON 837).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Females closely resemble those of the Ecuadorian species *A. yasuni* in having protrusions at the posterolateral corners of the carapace and sharply pointed denticles on the lateral carapace margins, but have the anterior genitalic projection distally wider and have distinct lateral processes on the sclerite at the base of that projection (fig. 285). Although one of the females was collected near the type locality of *A. leticia*, these animals are much larger and have a much more deeply incised sternum (as well as the posterolateral carapace protrusions) and are therefore unlikely to be the females of *A. leticia*.

**MALE:** Unknown.

**FEMALE** (PBI_OON 837, figs. 275, 276, 283–285): Total length 2.89. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior portion of endites with broadly triangular ventral process. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum almost rectangular, extending to about 3/4 of abdomen length. Leg spination: femora I, II p0-0-2, r0-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v2-1p-2. Anterior genitalic process expanded anteriorly, sclerite at base with distinct, medially directed lateral projections.

**OTHER MATERIAL EXAMINED:** Colombia: Amazonas: 7 km N Leticia, Feb. 20–25, 1972, Berlese (S. Peck, AMNH PBI_OON 37065), 1♀.

**DISTRIBUTION:** Southern Colombia (Putomayo, Amazonas).
Aschnaoonops pira, new species
Figures 286–296

Type: Male holotype taken at Río Pira and Río Apaporis, 0°25'S, 70°15'W, Amazonas, Colombia (Feb. 7–16, 1989; V., B. Roth), deposited in CAS (PBI_OON 2756).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Both sexes resemble those of the Ecuadorian species A. cosanga, but males have a proximal prong on the embolus that is set at a right angle to the distal prong (figs. 292–294); females have a tree-shaped anterior expansion on the anterior genitalic process (fig. 296).

Male (PBI_OON 2756, figs. 286, 289–294): Total length 1.63. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior portion of endites with narrow, triangular ventral process. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femur I p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-0; metatarsi: I v2-2-1p; II v2-2-0. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Proximal prong of embolus sharply pointed, distal prong narrow, arched.

Female (PBI_OON 839, figs. 287, 288, 295, 296): Total length 1.89. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v2-1p-2. Anterior genitalic process relatively short, narrow, not distally expanded, accompanied basally by wide sclerotization.

Other material examined: None.

Distribution: Colombia (Amazonas, Vaupés).

Aschnaoonops paez, new species
Figures 297–301

Type: Female holotype taken at an elevation of 3300 m at Páez in the Parque Nacional Nevado del Huila, Cauca, Colombia (Sept. 1980; L. Aristide), deposited in ICN (2220, PBI_OON 840).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Females have a long, wide postepigastric scutum and a short, wide genital atrium with thickened anterior and posterior margins (figs. 299–301).

Male: Unknown.

Female (PBI_OON 840, figs. 297–301): Total length 3.07. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum long, semicircular, extending to about 2/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2, r1-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v2-1p-2. Anterior genitalic process relatively short, narrow, not distally expanded, accompanied basally by wide sclerotization.

Other material examined: None.

Distribution: Colombia (Cauca).

Aschnaoonops huila, new species
Figures 302–312

Types: Male holotype and female allotype taken in montane forest litter an elevation of 1600 m at Resina, 1°55'N, 75°42'W. Huila, Colombia (June 8, 1956; H. Sturm), deposited in MCZ (72941, PBI_OON 37003).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Males have both the proximal and distal embolar prongs triangular, sharply pointed (figs. 308–310); females have a conspicuous, medially invaginated sclerite at the base of the anterior genitalic process (figs. 304, 312).

Male (PBI_OON 37003, figs. 302, 305–310): Total length 2.08. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior part of endites with long, narrow, pointed projection. Dorsal

scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femur I p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v1p-1r-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Proximal prong of embolus with distinct subbasal projection.

**FEMALE (PBI_OON 37003, figs. 303, 304, 311, 312):** Total length 2.38. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, extending to about 1/2 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi I, II v1p-2-2. Anterior genitalic process greatly expanded, angular distally, accompanied by wide basal sclerite with procurred anterior margin.

**Other Material Examined:** None.  
**Distribution:** Colombia (Huila).

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**Aschnaonops meta, new species**  
**Figures 313–323**

**Type:** Male holotype from a Berlese sample of forest litter taken at an elevation of 1000 m at Quebrada Susumuco, 23 km NW Villavicencio, Meta, Colombia (Mar. 2, 1972; S. Peck), deposited in AMNH (PBI_OON 29397).

**Etymology:** The specific name is a noun in apposition taken from the type locality.

**Diagnosis:** Males have a greatly elongated and narrowed distal prong on the embolus (figs. 319–321); the female here tentatively matched with the male has similar sternal microsculpture and a long, asymmetrical anterior genitalic process (fig. 323).

**Male (PBI_OON 29397, figs. 313, 316–321):** Total length 2.50. ALE separated by less than their radius. Sternum surface smooth, microsculpture only at sides. Endites with narrow distal projection extending farther anteriorly than remainder of endite. Dorsal scutum covering full length of abdomen, no...
Aschnaonops huila, new species, male (302, 305–310) and female (303, 304, 311, 312).

302. Sternum and mouthparts, ventral view.
303. Abdomen, ventral view.
304, 311. Genitalia, ventral view.
305. Left palp, prolateral view.
306. Same, ventral view.
307. Same, retrolateral view.
308. Left embolus, prolateral view.
309. Same, ventral view.
310. Same, retrolateral view.
312. Genitalia, dorsal view.


313. Sternum and mouthparts, ventral view.
314. Abdomen, ventral view.
315, 322. Genitalia, ventral view.
316. Left palp, prolateral view.
317. Same, ventral view.
318. Same, retrolateral view.
319. Left embolus, prolateral view.
320. Same, ventral view.
321. Same, retrolateral view.
323. Genitalia, dorsal view.
soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-1-0; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v2-1p-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus with proximal prong expanded into large scoop.

**FEMALE (PBI_OON 841, figs. 314, 315, 322, 323):** Total length 3.14. ALE separated by their radius to diameter. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process very long, accompanied by long, rectangular basal sclerite.

**OTHER MATERIAL EXAMINED:** Colombia: Meta: San Juanito, Plan de San Luis, Parque Nacional Chingaza, 4°29'38"N, 73°41'33"W, Nov. 22–24, 2003, pitfall, forest, elev. 2990 m (I. Quintero, M. Torres, IAVH 108166, PBI_OON 841), 1♂.

**DISTRIBUTION:** Colombia (Meta).

*Aschnaonops similis* (Keyserling), new combination

*Oonops similis* Keyserling, 1881: 297, pl. 11, fig. 17 (male holotype from Colombia, as “Neu-Granada,” in BMNH; examined).

*Dysderina similis* Simon, 1893a: 304.

**DIAGNOSIS:** Males can easily be recognized by the large, beak-shaped embolus (figs. 330–332), females by the long, rectangular sclerite at the base of the anterior genitalic process (fig. 334).

**MALE (PBI_OON 110, figs. 324, 327–332):** Total length 2.68. ALE separated by their radius to diameter. Sternum surface smooth, microsculpture only at sides. Endites with distal projection relatively short, wide. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-1-0; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2. Sperm pore small, narrow, slitlike. Cymbium with distal patch of setae. Embolus shaped like duck’s bill.

**FEMALE (PBI_OON 110, figs. 325, 326, 333, 334):** Total length 3.14. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, extending to about 2/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v3-2-2; II v3-0-2. Anterior genitalic process very long, accompanied by long, rectangular basal sclerite.


**DISTRIBUTION:** Central Colombia, at elevations from 2850–3350 m.

*Aschnaonops propinquus* (Keyserling), new combination

*Oonops propinquus* Keyserling, 1881: 297, pl. 11, fig. 18 (male holotype from Colombia, as “Neu-Granada,” in BMNH; examined).

*Dysderina propinqua* Simon, 1893a: 304.
Figs. 324–334. *Aschnaonops similis* (Keyserling), male (324, 327–332) and female (325, 326, 333, 334).
NOTE: Unfortunately, the holotype is missing both palps, and Keyserling’s illustration is not very informative. We suspect that, like the holotypes of the other two species Keyserling described from Colombia, *A. similis* and *Paradyserina globosa* (Keyserling), it was collected in some montane area near Bogotá. The sternal sculpturing of the holotype (fig. 335) is a good match to those of the specimens here assigned to the species.

**Diagnosis:** Males can easily be recognized by the leaf-shaped embolus, which is deeply excavated on both its ventral/retrolateral and dorsal/prolateral surfaces (figs. 341–343), females by the pair of transverse sclerites situated anterior and posterior of the wide sclerite at the base of the anterior genitalic process (fig. 345).

**Male** (PBI_OON 854, figs. 335, 338–343): Total length 2.52. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with distal prong long, lateral surface of endite concave. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v2-1r-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus elaborate, with proximal prong fitting inside basal excavation of distal prong, distal prong laterally flattened, with relatively broad tip.

**Female** (PBI_OON 857, figs. 336, 337, 344, 345): Total length 3.21. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, extending to about 2/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2, r1-1-0; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process with ventrally concave distal expansion, accompanied basally by two wide sclerites.

**Other Material Examined:** Colombia: no specific locality (BMNH PBI_OON 850), 1♀ (holotype). *Boyacá:* Lagunillas, Santuario de Flora y Fauna de Iguáque, 5°25’N, 73°27’W, Feb. 9–24, 2001, Winkler trap, elev. 3380 m (G. Oliva, IAVH 108100, PBI_OON 856), 1♂; Quebrada Carrizal, Santuario de Flora y Fauna de Iguáque, 5°25’N, 73°27’W, Nov. 18–20, 2000, Winkler trap, elev. 3350 m (P. Reina, IAVH 108094, PBI_OON 854), 1♂; Quebrada Los Francos, Santuario de Flora y Fauna de Iguáque, 5°25’N, 73°27’W, Feb. 7–9, 2001, pitfall trap, elev. 2860 m (G. Oliva, IAVH 108095, PBI_OON 857), 1♀; Sutamarchán, Serranía Merchán, 5°45’01”N, 73°40’02”W, Apr. 7–9, 2003, Winkler traps, secondary forest, elev. 3220 m (E. González, C. Reina, IAVH 108117, 108124, PBI_OON 852, 853), 1♂, 2♀. *Cundinamarca:* Páramo de Monserrate, Bogotá, Apr.–Nov. 1968, pitfall (H. Sturm, AMNH PBI_OON 851), 1♀.

**Distribution:** Central Colombia (Boyacá, Cundinamarca), at elevations from 2860–3380 m.

*Aschnaoonops alban*, new species

**Figures** 346–356

**Type:** Male holotype from Finca San Pablo, 3 km north of Alban, Cundinamarca, Colombia (Aug. 1–12, 1967; P. B. Wygodzinsky), deposited in AMNH (PBI_OON 109).

**Etymology:** The specific name is a noun in apposition taken from the type locality.

**Diagnosis:** Males resemble those of *A. huila* but have a less angular embolar base, especially in retrolateral view (figs. 352–354); females have a longer sclerite at the base of the anterior genitalic process (fig. 356).

**Male** (PBI_OON 109, figs. 346, 349–354): Total length 2.02. ALE separated by less than their radius. Sternum surface finely reticulate, microsculpture everywhere but front. Endites with distal projection relatively short, wide. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, extending to about 2/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2, r1-1-0; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process with ventrally concave distal expansion, accompanied basally by two wide sclerites.

FEMALE (PBI_OON 858, figs. 347, 348, 355, 356): Total length 2.39. Postepigastric scutum almost semicircular, covering about 1/2 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v1p-2-2. Anterior genitalic process with wide, rectangular distal expansion.


DISTRIBUTION: Colombia (Cundinamarca).

Aschnaonops chingaza, new species

Figures 357–367

TYPE: Male holotype from Winkler sample of forest litter taken at an elevation of 2930 m at La Calera, Parque Nacional Natural Chingaza, 4°41’24"N, 73°51’21"W, Cundinamarca, Colombia (Nov. 18–20, 2003; E. González), deposited in IAVH (108165, PBI_OON 859).

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Males have a dorsoventrally constricted embolus base, especially in retro-lateral view (figs. 363–365); females have a long, rocket-shaped anterior genitalic process (fig. 367).

MALE (PBI_OON 859, figs. 357, 360–365): Total length 2.88. ALE separated by their radius to diameter. Sternum surface smooth, microsculpture only at sides. Endites with distal projection relatively short, narrow. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-1-0; II p0-0-2, r1-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v2-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus highly twisted, almost corkscrew shaped.

FEMALE (PBI_OON 860, figs. 358, 359, 366, 367): Total length 3.47. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, extending to about 1/2 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process rocket shaped, with triangular base.


DISTRIBUTION: Colombia (Cundinamarca).

Aschnaonops pamplona, new species

Figures 368–378

TYPE: Male holotype taken in a dung trap at an elevation of 2150 m in a high Andean forest at the Estación Experimental y Demostrativa El Rasgón, Piedecuesta, 7°03’N, 72°57’W, Santander, Colombia (Sept. 21–23, 2004; I. Quintero, E. González), deposited in IAVH (108136, PBI_OON 868).

ETYMOLOGY: The specific name is a noun in apposition taken from one of the localities at which the species has been collected.

DIAGNOSIS: Males have an embolus that resembles that of A. propinquus but is not distally invaginated and has a longer tip (figs. 374–376); females have a much wider expansion at the tip of the anterior genitalic process (fig. 378).

MALE (PBI_OON 868, figs. 368, 371–376): Total length 2.00. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process relatively long, narrow. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-1; tibiae: I v4-4-2; II v4-4-0; metatarsi: I v2-2-1p; II v2-2-0. Sperm pore large, narrow, slitlike. Cymbium without distal patch of setae. Embolus deeply excavated on prolateral side.

FEMALE (PBI_OON 863, figs. 369, 370, 377, 378): Total length 2.58. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg
spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-2-1p; II v3-2-0. Anterior genital process with short but very wide anterior expansion.


**DISTRIBUTION:** Colombia (Santander, Norte de Santander).

*Aschnaonops pedro,* new species

Figures 379–389

**TYPE:** Male holotype and female allotype taken from epiphytic bromeliads or leaf litter at an elevation of 960 m at San Pedro, Sierra Nevada de Santa Marta, Magdalena, Colombia (May 19, 1975; J. Kochalka), deposited in AMNH (PBI_OON 10073).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males resemble those of *A. propinquus* but have a shorter, less twisted embolus bearing a long, prolateral spur (figs. 385–387); females have a large, tree-shaped anterior expansion on the anterior genital process (fig. 389).

**MALE** (PBI_OON 37109, figs. 379, 382–387): Total length 2.11. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process basally wide. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora I p0-0-2, r1-1-1; II p0-0-2, r1-0-0; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-2-0. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus with proximal prong shifted to retrolateral side of bulb, distal prong with short, sharp, proximal protrusion.

**FEMALE** (PBI_OON 37109, figs. 380, 381, 388, 389): Total length 2.39. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-2-0. Anterior genital process with tree-shaped anterior expansion.

**OTHER MATERIAL EXAMINED:** Colombia: Magdalena: Cerro Lagila, Sierra Nevada de Santa Marta, Apr. 15–30, 1975, pitfall, elev. 1540 m (J. Kochalka, AMNH PBI_OON 37108), 1♂; trail, Río Frio, Sierra Nevada de Santa Marta, Apr. 23, 1975, elev. 535 m (J. Kochalka, AMNH PBI_OON 37110), 2♂; San Pedro, Sierra Nevada de Santa Marta, May 19, 1975, epiphytic bromeliads and/or leaf litter, elev. 960 m (J. Kochalka, AMNH PBI_OON 37109), 7♂, 3♀; 2 km NW San Pedro, 10°55’N, 74°03’W, Aug. 16, 1985, elev. 1200 m (FMNH 56549, PBI_OON 10767), 1♂, 1♀; near San Pedro de la Sierra, northwestern Sierra Nevada de Santa Marta, Apr. 12, 1986, litter, elev. 1000 m (H.-G. Müller, MHNG PBI_OON 897), 2♂.

**DISTRIBUTION:** Colombia (Magdalena).

*Aschnaonops marta,* new species

Figures 390–399

**TYPE:** Male holotype taken from epiphytic bromeliads or leaf litter at an elevation of 960 m at San Pedro, Sierra Nevada de Santa Marta, Magdalena, Colombia (May 19, 1975; J. Kochalka), deposited in AMNH (PBI_OON 10073).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males resemble those of *A. pedro* but have a subdistally wider embolus. The two known males show differences between the right and left sides; the right bulb is much less inflated than the left (figs. 394–399), and there are slight but consistent differences in the shapes of the right and left emboli as well.

**MALE** (PBI_OON 37106, figs. 379–389): Total length 2.06. ALE separated by less than

their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process long, narrow. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2, r0-1-0; tibiae: I v4-4-2; II v3-4-1p; metatarsi: I v3-2-0; II v2-1r-0. Sperm pore large, narrow, slitlike. Cymbium with distal patch of setae. Embolus arrow shaped in lateral view, right bulb much less inflated than left bulb.

**FEMALE:** Unknown.

**OTHER MATERIAL EXAMINED:** Colombia: Magdalena: near San Pedro de la Sierra, northwestern Sierra Nevada de Santa Marta, Aug. 16, 1985, under bark and rocks, elev. 500–1000 m (H.-G. Müller, MHNG PBI_ OON 15708), 1♂.

**DISTRIBUTION:** Colombia (Magdalena).

**KEY TO SPECIES FROM VENEZUELA**

1. Males (those of *A. simoni* unknown) .... 2
   - Females (those of *A. aquada* and *A. masneri* unknown) .... 14
2. Embolus complex, with numerous processes, accompanied by triangular projection on cymbium (as in figs. 440, 441) .... 3
   - Embolus simpler, cymbium without projection .... 9
3. Embolus with blunt tip (figs. 503, 504) trujillo
   - Embolus with sharp tip .... 4
4. Embolus relatively short (figs. 490, 492) .... masneri
   - Embolus longer .... 5
5. Embolus with broad subdistal process (fig. 474) .... merida
   - Embolus otherwise .... 6
6. Embolus with three processes (figs. 439, 441) .... tariba
   - Embolus with four processes .... 7
7. Embolus with broad distal process (fig. 430) .... tachira
   - Embolus otherwise .... 8
8. Dorsalmost process of embolus sharply bent (fig. 452) .... teleferico
   - Dorsalmost process of embolus not sharply bent (fig. 480) .... aquada
9. Cymbium deeply invaginated at base of embolus (fig. 537) .... margaretae
   - Cymbium not deeply invaginated .... 10
10. Prolateral surface of embolus with numerous narrow processes (figs. 417, 524) .... 11
   - No such narrow processes .... 12
11. Dorsal prong of embolus with narrow subdistal spur (fig. 417) .... indio
   - Dorsal prong of embolus without subdistal spur (fig. 524) .... bocono
12. Embolus terminating in three sharp, parallel prongs (fig. 408) .... chorro
   - Embolus otherwise .... 13
13. Median process on embolus much larger than dorsal and ventral processes (fig. 515) .... cristalina
   - Median process on embolus smaller (fig. 463) .... jaji
14. Anterior genitalic process with distinct anterior expansion (as in fig. 410) .... 15
   - Anterior genitalic process without such an expansion (as in fig. 421) .... 20
15. Anterior expansion T-shaped or Y-shaped .... 16
   - Anterior expansion otherwise .... 18
16. Anterior expansion Y-shaped (fig. 539) .... margaretae
   - Anterior expansion T-shaped .... 17
17. Anterior expansion relatively wide (fig. 410) .... chorro
   - Anterior expansion relatively narrow (fig. 432) .... simoni
   - Anterior expansion angular .... 19
18. Anterior expansion conifer shaped (fig. 517) .... cristalina
   - Anterior expansion with posterolateral extensions (fig. 465) .... jaji
19. Anterior genitalic process long (figs. 443, 506, 528) .... 21
   - Anterior genitalic process short (figs. 421, 454, 476) .... 23
20. Anterior genitalic process narrow throughout its length (fig. 528) .... bocono
   - Anterior genitalic process otherwise .... 22
21. Anterior genitalic process much longer than basal sclerite (fig. 443) .... tariba
   - Anterior genitalic process not much longer than basal sclerite (fig. 506) .... trujillo
   - Median sclerite semicircular (fig. 421) .... indio
22. Median sclerite otherwise .... 24
23. Median genitalic process slightly widened at tip (fig. 454) .... teleferico
24. Anterior genitalic process not widened (fig. 476) .... merida

**Aschnaonops chorro,** new species

Figures 400–410

**TYPES:** Male holotype, female allotype, and one female and two male paratypes
Figs. 400–410. *Aschnaonops chorro*, new species, male (400, 403–408) and female (401, 402, 409, 410).  
400. Sternum and mouthparts, ventral view.  
401. Abdomen, ventral view.  
402, 409. Genitalia, ventral view.  
403. Left palp, prolateral view.  
404. Same, ventral view.  
405. Same, retrolateral view.  
406. Left embolus, prolateral view.  
407. Same, ventral view.  
408. Same, retrolateral view.  
410. Genitalia, dorsal view.
taken from cloud forest litter at an elevation of 1400 m at a site 8 km northeast of San Cristóbal in the Parque Nacional Chorro El Indio, 7°44′15″N, 72°11′37″W, Táchira, Venezuela (May 29, 1998; R. Anderson), deposited in AMNH (PBI_OON 869).

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Males resemble those of *A. propinquus* but have a V-shaped embolar tip (figs. 406–408); females have a T-shaped anterior genitalic process with recurved tips (fig. 410).

**MALE** (PBI_OON 870, figs. 400, 403–408): Total length 2.17. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Anterior process of endites relatively long, sharply pointed. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femur I p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-0; metatarsi: I v2-2-1p; II v2-2-0. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus relatively short, wide, distally with three parallel prongs.

**FEMALE** (PBI_OON 869, figs. 401, 402, 409, 410): Total length 2.33. Dorsal scutum covering 1/2 to 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-2-1p; II v3-2-0. Distal expansion on anterior genitalic process greatly widened, T-shaped, recurved.

**OTHER MATERIAL EXAMINED:** Venezuela: Táchira: 10 km NE San Cristóbal, Parque Nacional Chorro El Indio, 7°43′46″N, 72°12′17″W, May 29, 1998, upper montane forest litter, elev. 1300 m (R. Anderson, AMNH PBI_OON 870), 4♂.

**DISTRIBUTION:** Venezuela (Táchira).

*Aschnaonops indio*, new species

**Figures 411–421**

**TYPE:** Male holotype taken from cloud forest litter at an elevation of 1400 m at a site 8 km northeast of San Cristóbal in the Parque Nacional Chorro El Indio, 7°44′15″N, 72°11′37″W, Táchira, Venezuela (May 28, 1998; R. Anderson), deposited in AMNH (PBI_OON 871).

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Although sympatric with *A. chorro*, males of this species can easily be recognized by the triangular proximal prong on the embolus (figs. 417–419); females have relatively short apodemes forming sclerotized triangles at the sides of the atrial area and a short anterior genitalic process that barely extends beyond the basal sclerite (figs. 420, 421).

**MALE** (PBI_OON 34, figs. 411, 414–419): Total length 2.18. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process relatively short, narrow. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-1-2, r1-1-1; II p0-0-2, r2-1-0; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process short, about as long as semicircular sclerite at its base.

**FEMALE** (PBI_OON 877, figs. 412, 413, 420, 421): Total length 2.52. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2, r2-1-0; tibiae I, II v4-4-2; metatarsi: I v2-2-1p; II v1p-2-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus with proximal prong sharply pointed, narrower than distal prong.

**OTHER MATERIAL EXAMINED:** Venezuela: Mérida: Finca Fundo La Trinidad, 34 km NW Mérida, 8°37′00″N, 71°29′12″W, May 22, 1998, montane forest litter, elev. 2350 m (R. Anderson, AMNH PBI_OON 877), 4♂, 9♀; Universidad de Los Andes Biol. Res. La Carbonnera, 20 km SE Azulita, June 28–July 27, 1989, podocarp forest litter, elev. 2300 m (S. J. Peck, AMNH PBI_OON 34, 46), 2♂.

**DISTRIBUTION:** Venezuela (Táchira, Mérida).
Figs. 411–421. *Aschnaonops indio*, new species, male (411, 414–419) and female (412, 413, 420, 421).

Aschnaoonops tachira, new species
Figures 422–432

Type: Male holotype taken from shrub litter at an elevation of 2910 m at the Páramo La Negra, 15 km southeast of Pueblo Hondo, 8°14’50”N, 71°52’31”W, Táchira, Venezuela (May 27, 1998; R. Anderson), deposited in AMNH (PBI_OON 872).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Males can easily be recognized by the shape of multiple embolar projections (figs. 428–430). The females here assigned to the species have not been collected together with males, and may be mismatched; they resemble those of A. chorro but have a differently shaped extension on the anterior genital process and a sinuous anterior margin of the sclerite at the base of that process (figs. 431, 432).

Male (PBI_OON 872, figs. 422, 425–430): Total length 2.31. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with tip of anterior process directed anterolaterally. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r0-1-1; II p0-0-2; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-1p; II v2-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Distal prong of embolus with three processes.

Female (PBI_OON 38041, figs. 423, 424, 431, 432): Total length 3.12. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2; r1-1-0; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Anterior genital process with spade-shaped anterior extension, sclerite at base with medially invaginated anterior margin.

Other material examined: Venezuela: Táchira: Páramo El Zumbador, 40.3 km NE Táraba, 7°58’20”N, 72°05’15”W, May 30, 1998, elfin forest litter, elev. 2420 m (R. Anderson, AMNH PBI_OON 876), 1♂;

Páramo La Negra, 15 km SE Pueblo Hondo, 8°14’50”N, 71°52’31”W, May 27, 1998, shrub litter, elev. 2910 m (R. Anderson, AMNH PBI_OON 873), 1♂; 55 km N San Cristóbal, May 18–22, 1974, elev. 10,000 ft (S. Peck, AMNH PBI 38041), 1♀.

Distribution: Venezuela (Táchira).

Aschnaoonops tariba, new species
Figures 433–443

Types: Male holotype and female allotype from elfin forest litter taken at an elevation of 2420 m on the Páramo El Zumbador, 40.3 km NE Táraba, 7°58’20”N, 72°05’15”W, Táchira, Venezuela (May 30, 1998; R. Anderson), deposited in AMNH (PBI_OON 874).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Males can easily be recognized by the F-shaped embolus (figs. 439–441); females have a long, narrow anterior genital process and triangular protrusions on the transverse sclerite connecting the apodemes (fig. 443).

Male (PBI_OON 875, figs. 433, 436–441): Total length 2.14. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process relatively short, with anterolaterally directed tip. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-1-0; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I, II v2-2-1p. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus, in retrolateral view, with proximal and distal prongs parallel.

Female (PBI_OON 875, figs. 434, 435, 442, 443): Total length 2.41. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-0; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi I, II v2-2-1p. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus, in retrolateral view, with proximal and distal prongs parallel.

422. Sternum and mouthparts, ventral view.
423. Abdomen, ventral view.
424, 431. Genitalia, ventral view.
425. Left palp, prolateral view.
426. Same, ventral view.
427. Same, retrolateral view.
428. Left embolus, prolateral view.
429. Same, ventral view.
430. Same, retrolateral view.
432. Genitalia, dorsal view.
**Aschnaoonops teleferico**, new species

Figs 444–454

Type: Male holotype taken in a flight intercept trap in cloud forest litter at an elevation of 2450 m at the La Montaña cable car (Teleférico) station in Mérida, Mérida, Venezuela (June 27–July 26, 1989; S., J. Peck), deposited in AMNH (PBI_OON 23).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Males can easily be recognized by having the embolus cross shaped in retrolateral view (fig. 452), females by the short anterior genitalic process and irregularly oval basal sclerite (fig. 454).

Male (PBI_OON 900, figs. 444, 447–452): Total length 2.37. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process short, narrow. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-2-0. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus with distal prong bearing short, acutely bent projection.

Female (PBI_OON 900, figs. 445, 446, 453, 454): Total length 2.66. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2; r1-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process short, without distal enlargement, surrounded by basal sclerite for about 2/3 its length.

Other Material Examined: Venezuela: Mérida: Estación Teleférico La Montaña, Mérida, Feb. 23–25, 1968, elev. 2440 m (P., B. Wygodzinsky, M. Cormons, AMNH PBI_OON 31137), 1♀, June 27, 1989, cloud forest litter, elev. 2440 m (S., J. Peck, AMNH PBI_OON 47), 2♂, June 27–July 26, 1989, cloud forest, flight intercept trap, elev. 2450 m (S., J. Peck, AMNH PBI_OON 33), 1♀, July 26, 1989, cloud forest litter, elev. 2450 m (S., J. Peck, AMNH PBI_OON 43), 1♂; La Mucuy, 7 km E Tabay, Parque Nacional Sierra Nevada, 8°37’35”N, 71°02’01”W, May 24, 1998, cloud forest litter, elev. 2450 m (R. Anderson, AMNH PBI_OON 899, 900), 6♂, 2♀, 8°37’41”N, 71°01’46”W, May 24, 1998, cloud/bamboo forest litter, elev. 2520 m (R. Anderson, AMNH PBI_OON 898), 2♂, 8°37’44”N, 71°02’26”W, May 24, 1998, upper montane forest litter, elev. 2340 m (R. Anderson, AMNH PBI_OON 901), 10♂, 4♀; trail to Monte Cerpa, N Mérida, Mar. 29, 1992, litter on moist bank, litter near stream, elev. 8300 ft (L. Herman, AMNH PBI_OON 16, 24), 2♂, litter near stream, elev. 7400 ft (L. Herman, AMNH PBI_OON 40), 1♀; Sendero Truchicola, Mucuy, Tabay, June 17–July 3, 1989, cloud forest, flight intercept trap, elev. 2300 m (S., J. Peck, AMNH PBI_OON 38), 1♂.

Distribution: Venezuela (Mérida).

**Aschnaoonops jaji**, new species

Figs 455–465

Types: Male holotype and female allotype from litter near stream taken at an elevation of 5600–5900 ft near La Chorrera on the road to Jaji, Mérida, Venezuela (Mar. 28, 1992; L. Herman), deposited in AMNH (PBI_OON 141).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Males can easily be recognized by having a short, sharp projection on the dorsal margin of the embolus (figs. 461–463), females by the posterolateral extensions on the anterior expansion of the anterior genitalic process and the medially invaginated basal sclerite (fig. 465).

Male (PBI_OON 25, figs. 455, 458–463): Total length 2.26. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process relatively wide, distally sinuous. Dorsal scutum covering full length of abdomen, no soft
tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femur I p0-0-2, r1-1-0; tibiae: I v4-4-2; II v4-4-0; metatarsi: I v2-2-2; II v3-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus with base very wide, twisted, distal prong with distally directed projection.

**FEMALE (PBI_OON 141, figs. 456, 457, 464, 465):** Total length 2.62. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process with rectangular anterior enlargement with recurved posterior margins; basal sclerite invaginated at middle.

**OTHER MATERIAL EXAMINED:** VENEZUELA: Mérida: Hechicera, Monte Zerpe, July 22–Aug. 2, 1989, montane forest, carrion trap, elev. 2000 m (S., J. Peck, AMNH PBI_OON 42), 1 \( \delta \); trail to Monte Cerpa, N Mérida, Mar. 27, 1992, litter near stream, elev. 6400–6800 ft (L. Herman, AMNH PBI_OON 25), 1 \( \delta \).

**DISTRIBUTION:** Venezuela (Mérida).

*Aschnaoolops merida*, new species

*Figures 466–476*

**TYPES:** Male holotype, female allotype, and male paratype from elfin forest litter taken at an elevation of 3300 m at Laguna Negra, Parque Nacional Sierra Nevada, 8°47'14"N, 70°48'31"W, Mérida, Venezuela (May 23, 1998; R. Anderson), deposited in AMNH (PBI_OON 902).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males can easily be recognized by the highly complex embolus, with one rounded and three narrow, elongate, distally directed processes (figs. 472–474); females have a ventrally notched pedicel tube (fig. 468) and a short anterior genitalic process without an anterior expansion (fig. 476).

**MALE (PBI_OON 52, figs. 466, 469–474):** Total length 2.34. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with tip of anterior process relatively wide, directed anterolaterally. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-0-2, r1-0-0; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v1p-2-2; II v3-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Distal prong of embolus with three processes, of which two are narrow, one wide.

**FEMALE (PBI_OON 52, figs. 467, 468, 475, 476):** Total length 2.69. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-2, r1-1-0; tibiae I, II v4-4-2; metatarsi: I v1p-2-2; II v3-0-2. Anterior genitalic process short, narrow, distally attenuated.

**OTHER MATERIAL EXAMINED:** VENEZUELA: Mérida: Páramo de Santo Domingo, 15.6 km SW Santo Domingo, Apr. 7, 1994, litter near stream, elev. 3100 m (L. Herman, AMNH PBI_OON 52), 2 \( \delta \), 4 \( \varphi \).

**DISTRIBUTION:** Venezuela (Mérida).

*Aschnaoolops aquada*, new species

*Figures 477–483*

**TYPE:** Male holotype taken in *Espeletia* leafbase at an elevation of 3450 m on a paramo at the La Aguada cable car (Teleférico) station in Mérida, Mérida, Venezuela (June 28, 1989; S., J. Peck), deposited in AMNH (PBI_OON 44).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males can easily be recognized by the highly complex embolus, with four narrow, elongate, distally directed processes (figs. 478–480).

**MALE (PBI_OON 44, figs. 477–483):** Total length 2.38. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with tip of anterior process truncated. Dorsal scutum covering full length of abdomen, no soft tissue visible from
Figs. 466–476. *Aschnaonops merida*, new species, male (466, 469–474) and female (467, 468, 475, 476).
above, not fused to epigastric scutum. Post-
epigastric scutum long, almost rectangular,
extending to nearly full length of abdomen.
Leg spination: femora: I p0-0-2, r1-l-1; II p0-0-2;
tibiae: I v4-2-2; II v4-4-1p; metatarsi: I v1p-2-2; II v1p-1r-2. Sperm pore small,
narrow, slitlike. Cymbium without distal
patch of setae. Embolus hand shaped, with

thumb-shaped proximal prong and four processes on distal prong.

**FEMALE:** Unknown.

**OTHER MATERIAL EXAMINED:** None.

**DISTRIBUTION:** Venezuela (Mérida).

**Aschnaonops masneri**, new species

**Figures 484, 487–492**

**TYPE:** Male holotype taken at an elevation of 2000 m at Santa Rosa, Mérida, Venezuela (May 4–13, 1981; L. Masner), deposited in CNC (PBI_OON 38125).

**ETYMOLOGY:** The specific name is a patronym in honor of the collector, Lubomir Masner of the CNC.

**DIAGNOSIS:** Males can easily be recognized by the distally expanded embolus, with four laterally directed processes (figs. 487–492).

**MALE (PBI_OON 38125, figs. 484, 487–492):**
- Total length 2.18.
- ALE separated by their radius to diameter.
- Sternum surface coarsely reticulate, microsculpture everywhere but front.
- Endites with anterior process truncated, with anterolaterally directed tip.
- Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum.
- Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen.
- Leg spination: femora: I p0-0-2, r1-1-1; II p0-0-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2.
- Sperm pore large, triangular, with rounded angles. Cymbium without distal patch of setae. Distal prong of embolus with three processes arranged serially along its length.

**FEMALE:** Unknown.

**OTHER MATERIAL EXAMINED:** None.

**DISTRIBUTION:** Venezuela (Mérida).

**Aschnaonops trujillo**, new species

**Figures 496–506**

**TYPES:** Male holotype and male paratype from cloud forest litter taken at an elevation of 2240 m at km 6.0 on the highway to Trujillo, 9°21′21″N, 70°17′51″W, Trujillo, Venezuela (May 20, 1998; R. Anderson), deposited in AMNH (PBI_OON 904).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males can easily be recognized by the pair of dorsal projections on the distal portion of the embolus (figs. 502–504); females resemble those of *A. merida* in having a ventrally notched pedicel tube (fig. 497), but have a longer anterior genitalic process (fig. 506).

**MALE (PBI_OON 906, figs. 496, 499–504):**
- Total length 2.29. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process truncated, with anterolaterally directed tip. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora I p0-0-2, r1-1-1; II p0-0-2; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2.

**FEMALE (PBI_OON 906, figs. 497, 498, 505, 506):**
- Total length 2.39. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process gradually widened toward anterior end.

**OTHER MATERIAL EXAMINED:** Venezuela: Trujillo: Páramo La Cristalina, km. 9.7 on highway to Trujillo, 9°21′21″N, 70°17′51″W, May 20, 1998, elfin forest litter, elev. 2400 m (R. Anderson, AMNH PBI_OON 906), 1♂, 1♀; Parque Nacional Guaramacal, 12. 9 km SE Boconó, 9°14′48″N, 70°12′17″W, May 19, 1998, cloud forest litter, elev. 2350 m (R. Anderson, AMNH PBI_OON 904), 2♂, 2♀, 19.3 km SE Boconó, 9°14′11″N, 70°11′07″W, May 19, 1998, shrub litter, elev. 2800 m (R. Anderson, AMNH PBI_OON 905), 1♂.

**DISTRIBUTION:** Venezuela (Trujillo).

**Aschnaonops cristalina**, new species

**Figures 507–517**

**TYPES:** Male holotype, female allotype, and male paratype from elfin forest litter taken at an elevation of 2400 m at km 9.7 along the highway to Trujillo on the Páramo La Cristalina, 9°21′21″N, 70°17′51″W, Trujillo,
Figs. 496–506. Aschnaoonops trujillo, new species, male (496, 499–504) and female (497, 498, 505, 506).

496. Sternum and mouthparts, ventral view.
497. Abdomen, ventral view.
498, 505. Genitalia, ventral view.
499. Left palp, prolateral view.
500. Same, ventral view.
501. Same, retrolateral view.
502. Left embolus, prolateral view.
503. Same, ventral view.
504. Same, retrolateral view.
506. Genitalia, dorsal view.
Aschnaoonops bocono, new species

**Figures 518–528**

Types: Male holotype and male paratype from sifted leaf litter taken at an elevation of 1500 m at a site 15.3 km SSE of Boconó San Antonio, 9°08′N, 70°13′W, Trujillo, Venezuela (May 20, 1998; R. Anderson), deposited in AMNH (PBI_OON 907).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Although sympatric with *A. trujillo*, both sexes can easily be recognized by the more elaborate sternal sculpturing (fig. 507) and the lack of a spinneret scutum (fig. 508); males have a single, median dorsal projection on the distal portion of the embolus (figs. 513–515), females have a conifer-shaped expansion on the anterior genital process (fig. 517).

**MALE (PBI_OON 907, figs. 507, 510–515):** Total length 2.90. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with tip of anterior process broad, anterolaterally directed. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora I p0-0-2, r1-1-1; II p0-0-2, r1-1-0; tibiae: I v4-4-2; II v4-4-1p, metatarsi: I v2-2-2; II v3-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus prolaterally with numerous narrow protrusions.

**FEMALE (PBI_OON 910, figs. 519, 520, 527, 528):** Total length 2.01. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p, metatarsi: I v2-2-2; II v3-0-2. Anterior genital process very long, very narrow, sclerite at base short.

**OTHER MATERIAL EXAMINED:** Venezuela: Lara: Parque Nacional Yacambú, 14.2 km SE Sanare, 9°41′45″N, 69°36′48″W, May 18, 1998, cloud forest litter, elev. 1650 m (R. Anderson, AMNH PBI_OON 910), 5♀, 2♂.

**DISTRIBUTION:** Venezuela (Trujillo).
Figs. 518–528. *Aschnaoonops bocono*, new species, male (518, 521–526) and female (519, 520, 527, 528).

**518.** Sternum and mouthparts, ventral view.

**519.** Abdomen, ventral view.

**520, 527.** Genitalia, ventral view.

**521.** Left palp, prolateral view.

**522.** Same, ventral view.

**523.** Same, retrolateral view.

**524.** Left embolus, prolateral view.

**525.** Same, ventral view.

**526.** Same, retrolateral view.

**528.** Genitalia, dorsal view.
TYPE: Female holotype from Venezuela, without specific locality but presumably from one of the three localities in northern Venezuela specified by Simon (1893b: 441): Caracas (Distrito Capital), Corosal (Falcón), or San Esteban (Falcón), deposited in MNHN (10979, PBI_OON 917).

ETYMOLOGY: The specific name is a patronym in honor of the likely collector of the holotype.

DIAGNOSIS: Females resemble those of A. silvae but differ in the shape of the proximal sclerite at the base of the anterior genitalic process (fig. 495).

MALE: Unknown.

FEMALE (PBI_OON 917, figs. 485, 486, 493–495): Total length 2.16. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/2 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-1p; metatarsi: I v2-2-0; II v2-0-2. Anterior genitalic process with club-shaped anterior expansion, basal sclerite large, elaborate.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Venezuela (presumably coastal portions of Falcón and/or the Distrito Capital).

Aschna onops margaretae, new species

Figures 529–539


TYPES: Male holotype and male paratype from cloud forest litter taken at an elevation of 1550 m on the road to Pico Guacamaya in the Estación Biológica Rancho Grande, Parque Nacional Henri Pittier, 10°20’42”N, 67°41’09”W, May 12, 1998, montane forest litter, elev. 1150 m (R. Anderson, AMNH PBI_OON 916), 4♂, 1♀; road to Pico Guacamaya, Estación Biológica Rancho Grande, Parque Nacional Henri Pittier, 10°21’38”N, 67°40’35”W, May 14, 1998, cloud forest litter, elev. 1450 m (R. Anderson, AMNH PBI_OON 912), 2♂; Rancho Grande, 15 km N Maracay, Feb. 9–27, 1971, Berlese, forest litter (S. Peck, AMNH PBI_OON 915), 1♂; Rancho Grande, 20 km NW Maracay, Apr. 15, 1994, litter, elev. 1150 m (L. Herman, AMNH PBI_OON 913), 1♀.

DISTRIBUTION: Venezuela (Aragua).

ETYMOLOGY: The specific name is a patronym in honor of Margareta Dumitrescu, who was the first to describe this species.

DIAGNOSIS: Males can easily be recognized by the invaginated tip of the cymbium (figs. 534, 537), females by the distinctive shape of the postepigastric scutum (fig. 530, 531).

MALE (PBI_OON 916, figs. 529, 532–537): Total length 2.00. ALE separated by their radius to diameter. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process short, wide, directed anteromedially. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora I, II p0-0-2, r1-1-1; II p0-0-2, r1-1-0; tibiae: I v4-4-1p; II v4-4-0; metatarsi: I v2-1p-2; II v2-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus compact, triangular, on narrow base.

FEMALE (PBI_OON 916, figs. 530, 531, 538, 539): Total length 2.20. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-2. Anterior genitalic process relatively wide, with bifid anterior expansion.

KEY TO SPECIES FROM BRAZIL AND THE WEST INDIES

1. Males (those of A. malkini, A. caninde, and A. gorda unknown) .................. 2
   – Females ................................ 4
2. Embolus arrow shaped (fig. 576) .... simla
   – Embolus otherwise ................. 3
3. Embolus with two ventrally directed projections (fig. 587) ...... villalba
   – Embolus with distally directed projections (fig. 565) .............. belem
4. Anterior genitalic process long, T-shaped (fig. 578) .......... simla
   – Anterior genitalic process otherwise ........................ 5
5. Basal sclerite narrow, triangular, longer than anterior genitalic process (fig. 551) ... gorda
   – Basal sclerite otherwise ................ 6
6. Anterior genitalic process with anterior expansion (figs. 544, 545) .......... malkini
   – No anterior expansion .................. 7
7. Posterior tibiae and metatarsi with spines; anterior genitalic process apparently absent (figs. 588, 589) .... villalba
   – Posterior legs without spines; anterior genitalic process obvious ........ 8
8. Basal sclerite reaching to two-thirds of length of anterior genitalic process (fig. 556) ....
   – Basal sclerite reaching only to about half of length of anterior genitalic process (fig. 567) ......

Aschnaoonops malkini, new species
Figures 540–546

TYPE: Female holotype from Igarapé 'Belem, near its confluence with the Rio Solimões, Amazonas, Brazil (Apr. 5–30, 1966; B. Malkin), deposited in AMNH (PBI_OON 38061).

ETYMOLOGY: The specific name is a patronym in honor of the collector of the holotype, Borys Malkin.

DIAGNOSIS: The single known female resembles those of the Colombian species A. pira but has a wider anterior expansion on the anterior genitalic process (fig. 545). It is conceivable that it represents the unknown female of the Colombian species A. leticia (according to Lynch, 1980, the Brazilian type locality is about 70 km east of Leticia, Colombia, although according to Heyer, 1994, there is some doubt about whether all the Malkin material with this locality data is actually from the same place). However, the sternum of the Brazilian female (fig. 541) is more tuberculate than that of the Colombian male (fig. 274), and we therefore predict that the male of the Brazilian species, when collected, will be different from that of A. leticia.

MALE: Unknown.

FEMALE (PBI_OON 38061, figs. 540–546): Total length 1.85. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process with short, wide, semicircular anterior expansion; basal sclerite shorter at middle than at sides.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Brazil (far western Amazonas).

Aschnaoonops caninde, new species
Figures 552–556

TYPE: Female holotype and female para-type from Rio Gurupi, Caninde, Paragominas, Pará, Brazil (Apr. 7–15, 1983; B. Malkin), deposited in AMNH (PBI_OON 38070).

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Females have an unusually long postepigastric scutum, extending almost to the spinneret scutum (fig. 553) and have a short anterior genitalic process that is only slightly widened anteriorly (fig. 556).

MALE: Unknown.

FEMALE (PBI_OON 38067, figs. 552–556): Total length 2.34. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum covering about 2/3 of abdomen length. Leg spination: femora I p0-0-3, r1-1-2; II p0-0-2, r1-1-2; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process only slightly widened anteriorly, only about 1/3 of its length extending anterior of basal sclerite.

DISTRIBUTION: Brazil (Pará, near the Maranhão border).

Aschnaoonops belem, new species

Figures 557–567

Type: Male holotype from Benevides, near Belém, 1°21′32.41″S, 48°14′49.14″W, Pará, Brazil (Apr. 1–8, 2001; S. Souza), deposited in MPEG (19118, PBI_OON 1001).

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Males can be recognized by the deeply bifid appearance of the embolus in prolateral view (figs. 560, 563), females by the short anterior genitalic process, which is uniformly wide throughout its length (fig. 567).

MALE (PBI_OON 1004, figs. 557, 560–565): Total length 2.12. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process narrow, sharply pointed. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femora: I p0-1-2, r1-1-2; II p0-0-2, r1-1-2; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-2-1p; II v3-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus with distal prong bearing translucent dorsal flange.

FEMALE (PBI_OON 49408, figs. 558, 559, 566, 567): Total length 2.37. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width. Postepigastric scutum covering about 2/3 of abdomen length. Leg spination: femora: I p0-1-2, r1-1-2; II p0-0-2, r1-1-2; tibiae I, II v4-4-2; metatarsi: I v2-2-2; II v3-0-2. Anterior genitalic process short, without anterior expansion, uniform in width.

OTHER MATERIAL EXAMINED: Brazil: Pará: Benevides, near Belém, Jan. 27, 2001 (J. Barreiros, D. Santos-Souza, MPEG 4686, PBI_OON 49410), 1♀; Parque Ambiental do

DISTRIBUTION: Brazil (Pará).

Aschnaonoops aschnae Makhan and Ezzatpanah

Aschnaonoops aschnae Makhan and Ezzatpanah, 2011: 1, figs. 1–6 (male holotype from Kasikasima, Suriname, supposedly deposited in University of Suriname, not available for examination).

DIAGNOSIS: Apparently closely related to A. belem (see above), but little can be said about the species until topotypical specimens become available for study.


FEMALE: Unknown.

MATERIAL EXAMINED: None.

DISTRIBUTION: Suriname.

Aschnaonoops simla (Chickering), new combination

Dysderina simla Chickering, 1968: 29, figs. 65–68 (male holotype from Simla, Arima, Trinidad, in MCZ; examined).

DIAGNOSIS: Males can be recognized by the tiny projection paralleling the tip of the embolus (figs. 574–576); females by the short, T-shaped anterior genitalic process (fig. 578).

MALE (PBI_OON 1008, figs. 568–578): Total length 1.81. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Endites with anterior process broad, sinuous, wide at tip. Dorsal scutum covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum. Postepigastric scutum long, almost rectangular, extending to nearly full length of abdomen. Leg spination: femur I p0-0-2, r1-1-0; tibiae I, II v4-4-1p; metatarsi: I v2-2-2; II v2-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus retrolaterally excavated, triangular in prolateral view.

FEMALE (PBI_OON 919, figs. 569, 570, 577, 578): Total length 2.20. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae I, II v4-4-2; metatarsi: I v2-1p-2; II v2-0-2. Anterior genitalic process short, T-shaped, basal sclerite with two lateral lobes.


DISTRIBUTION: Trinidad.

Aschnaonoops villalba, new species

Types: Male holotype and female allotype from forest leaf litter taken at an elevation of 3900 feet at a site 6 mi N of Villalba on Rt. 149, 6.7 mi W of Rt. 143, near Cerro de Punta, Villalba, Puerto Rico (Mar. 18, 1992; L. Herman), deposited in AMNH (PBI_OON 38066).

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.
Figs. 568–578. *Aschnaoonops simla* (Chickering), male (568, 571–576) and female (569, 570, 577, 578).


579. Sternum and mouthparts, ventral view.
580. Abdomen, ventral view.
581, 588. Genitalia, ventral view.
582. Left palp, prolateral view.
583. Same, ventral view.
584. Same, retrolateral view.
585. Left embolus, prolateral view.
586. Same, ventral view.
587. Same, retrolateral view.
589. Genitalia, dorsal view.
**DIAGNOSIS:** Males can easily be recognized by the pair of parallel, ventrally directed flanges at the base of the embolus (figs. 585–587); the single known female specimen is probably teratological, but can be recognized by the presence of spines on the prolateral surfaces of tibiae and metatarsi III and IV.

**MALE** (PBI_OON 38066, figs. 579, 582–587): Total length 2.03. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-2. Anterior genitalic process apparently tiny, T-shaped, hidden behind narrow triangular basal sclerite.

**FEMALE** (PBI_OON 38069, figs. 580, 581, 588, 589): Total length 2.35. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/2 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-2. Sperm pore small, narrow, slitlike. Cymbium without distal patch of setae. Embolus as seen in lateral view, with two parallel, ventrally directed prongs.

**OTHER MATERIAL EXAMINED:** None.

**DISTRIBUTION:** Puerto Rico.

**Aschnaoonops gorda,** new species

*Figures 547–551*

**TYPE:** Female holotype from Virgin Gorda Mountain, Virgin Gorda, Virgin Islands (June 26, 1966), deposited in AMNH (PBI_OON 38069).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Females can be recognized by the narrow, triangular basal sclerite at the base of the tiny, T-shaped anterior genitalic process (fig. 551).

**MALE:** Unknown.

**FEMALE** (PBI_OON 38069, figs. 547–551): Total length 2.07. ALE separated by less than their radius. Sternum surface coarsely reticulate, microsculpture everywhere but front. Dorsal scutum covering more than 3/4 of abdomen length, more than 1/2 to most of abdomen width, not fused to epigastric scutum. Postepigastric scutum almost semicircular, covering about 1/3 of abdomen length. Leg spination: femora I, II p0-0-2, r1-1-1; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-2. Anterior genitalic process apparently tiny, T-shaped, hidden behind narrow triangular basal sclerite.

**OTHER MATERIAL EXAMINED:** None.

**DISTRIBUTION:** Virgin Islands.

**Bidysderina,** new genus

**TYPE SPECIES:** *Bidysderina perdido,* new species.

**ETYMOLOGY:** The generic name refers to the bipartite embolus and the similarities to the genus *Dysderina,* and is feminine in gender.

**DIAGNOSIS:** Members of this genus resemble those of *Prodysderina* and *Aschnaoonops* in sternal and spiracular characters, but can easily be distinguished by the deeply bifid embolar structure (figs. 627, 660), the distinctively modified tips of the male endites (fig. 595), and the small but distinct female genital atrium (figs. 622, 644). The almost fully bifid embolar structure suggests that, despite the sternal similarities to *Prodysderina* and *Aschnaoonops,* this genus may actually be more closely related to *Dysderina* and some undescribed genera, the members of which seem to have a fully separate embolus and conductor.

**DESCRIPTION:** Total length of male 1.6–2.1, of females 2.3–3.1. Carapace, sternum, mouthparts, abdominal scuta, legs orange-brown, without pattern; abdomen soft portions white, without pattern. *Cephalothorax:* Carapace broadly oval in dorsal view (fig. 590), anteriorly narrowed to 0.49 times its maximum width or less, pars cephalica strongly elevated in lateral view (fig. 591), anterolateral corners with strongly sclerotized, triangular extension, pars thoracica
with rounded posterolateral corners, without depressions or radiating rows of pits, posterolateral edge without pits, posterior margin not bulging below posterior rim, posterolateral surface without spikes; surface of elevated portion of pars cephalica granulate, sides granulate; fovea absent, lateral margin straight, rebordered, with blunt denticles not bearing setae (fig. 591); plumose setae near posterior margin of pars thoracica absent; marginal, nonmarginal pars cephalica, pars thoracica setae light, needlelike, scattered. Clypeus margin strongly rebordered, sinuous in front view, vertical in lateral view, high, ALE separated from edge of carapace by their radius or more, median projection present, formed by fused small, triangular chilum (fig. 592); setae light, needlelike. Eyes six, well developed, ALE largest, oval, PME squared, PLE oval; posterior eye row recurved from above, procured from front; ALE separated by less or more than their radius, ALE-PLE separated by less than ALE radius, PME touching throughout most of their length. PLE-PME separated by less than PME radius. Sternum (fig. 600) wider than long, not fused to carapace, surface coarsely reticulate, microsculpture present everywhere but front, without transverse ridges or pits, median concavity and hair tufts absent, with radial furrows between coxae I–II, II–III, III–IV, furrows with rows of small pits, radial furrow opposite coxae III absent, sickle-shaped structures absent, anterior margin with continuous transverse groove, posterior margin not extending posteriorly of coxae IV but with posterior hump, anterior corners excavated, lateral margins with infracoxal grooves bearing anterior, posterior openings, distance between coxae approximately equal, extensions of precoxal triangles absent, lateral margins with bridges to coxae; setae sparse, dark, needlelike, densest laterally, originating from surface, posterior and lateral margins with conspicuous, tuberculate setal bases. Chelicerae slightly divergent, anterior face with slight swelling (fig. 593); teeth scanned only in male of *B. perdido*, usually with one large tooth on promargin, one smaller tooth on retromargin, but male of *B. perdido* with promarginal tooth enlarged into distinct lobe bearing numerous tiny projections on retrolateral surface (fig. 594); fangs without toothlike projections, directed medially, shape normal, without prominent basal process, tip unmodified; setae dark, needlelike, densest medially; paturon inner margin with scattered setae, distal region, posterior surface unmodified, promargin with row of flattened setae, inner margin unmodified, laminate groove absent. Labium (fig. 595) triangular, not fused to sternum, anterior margin not indented at middle, same as sternum in sclerotization; with six or more setae on anterior margin, subdistal portion with unmodified setae. Endites same as sternum in sclerotization, anterior portion modified in males with distally excavated, ventrally with small, sharply pointed, triangular apical projection, dorsally with larger, much more heavily sclerotized, triangular projection, dorsal projection directed ventrally, medially (fig. 595), posterior portion unmodified; serrula absent in males (scanned only in male of *B. perdido*, fig. 596), apparently present as single row of teeth in females (not scanned, uncertain); labrum with rounded projection. Female palp without claw or spines; patella without prolateral row of ridges, tarsus elongate. Abdomen: Ovoid, without long posterior extension, rounded posteriorly, interscutal membrane without rows of small sclerotized platelets. Booklung covers large, ovoid, without setae, anterolateral edge unmodified; posterior spiracles connected by groove, groove continued beyond spiracles almost to lateral edge of postepigastric scutum. Pedicel tube medium, ribbed, scutopedicel region unmodified, scutum extending far dorsal of pedicel, plumose hairs, matted setae on anterior ventral abdomen in pedicel area, cuticular outgrowths near pedicel all absent. Dorsal scutum strongly sclerotized, in males covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum around midline, in females smaller, occupying more than half of abdomen width, fused to epigastric scutum; middle surface smooth, sides smooth, anterior half without projecting denticles. Epigastric scutum strongly sclerotized, in males covering full length of abdomen, no soft tissue visible from above, not fused to epigastric scutum around midline, in females smaller, occupying more than half of abdomen width, fused to epigastric scutum; middle surface smooth, sides smooth, anterior half without projecting denticles. Epigastric scutum strongly sclerotized, surrounding pedicel, not protruding, small lateral sclerites absent, without lateral joints in females. Postepigastric scutum strongly sclerotized, in males...
covering nearly full length of abdomen, fused to epigastric scutum (in females much shorter, not fused to epigastric scutum); anterior margin unmodified, with short posteriorly directed lateral apodemes. Spinneret scutum present, incomplete ring, with fringe of long setae; supranaal scutum absent. Abdominal setae dark, needlelike, epigastric area setae not basally thickened; dense patch of setae anterior to spinnerets absent, intercalary membrane with setae. Colulus present, tiny, with pair of setae. Anterior lateral spinnerets bisegmented, basal segment without oblique membranous strip, posterior medians unisegmented, posterior laterals bisegmented (fig. 601); spigots scanned only in male of *B. perdido*, anterior laterals with single major ampullate gland spigot and four piriform gland spigots (fig. 602); posterior medians with four spigots (three with convex bases, presumably minor ampullate gland spigots, one with concave base, presumably aciniform gland spigot, fig. 603); posterior laterals with five spigots (four with convex bases, one with concave base, fig. 604).

**Legs:** Femur IV not thickened, same size as femora I–III, patella plus tibia I shorter than carapace, tibia I unmodified, tibia IV specialized hairs on ventral apex, ventral scopula absent, metatarsi I, II mesoptimal comb absent, metatarsi III, IV ventral scopula absent. Leg spines present on anterior femora, tibiae, metatarsi; femoral spines strong, tibial and metatarsal spines long, spines absent on posterior legs. Tarsi without inferior claw. Superior claws (scanned only in male of *B. perdido*) with single row of five or six teeth set on inner margin, most distal tooth greatly elongated on leg IV (figs. 606–613). Trichobothrial base with numerous parallel ridges (fig. 614). Tarsal organs with three receptors on legs I, II (figs. 615, 616), two on legs III, IV, palps (figs. 617, 618, 619). Genitalia: Male epigastric region with sperm pore small, narrow, slitlike, situated between anterior and posterior spiracles, rebordered (fig. 605); furrow without Ω-shaped insertions, without specialized setae. Male palp of normal size, not strongly sclerotized, right and left palps symmetrical, proximal segments pale orange, cymbium, bulb yellow; embolus dark, without prolateral excavation; trochanter of normal size, unmodified; femur of normal size, two or more times as long as trochanter, without posteriorly rounded lateral dilation, attaching to patella basally; patella shorter than femur, not enlarged, without prolateral row of ridges, setae unmodified; tibia with three trichobothria (fig. 599); cymbium (figs. 597, 598) ovoid in dorsal view, completely fused with bulb, no seam visible, extending beyond distal tip of bulb, plumose setae, stout setae, distal patch of setae all absent; bulb shorter than cymbium, slender, elongated. Distal elements deeply bifid, with embolus situated retrolateral to conductor, conductor sometimes also bifid (fig. 639). Female genitalia externally with short, wide atrium (fig. 622), internally with pair of slight to pronounced protrusions situated near anterior spiracles (presumably serving as muscle attachments), sclerotized anterior genitalic process, often accompanied by transverse basal sclerite visible through cuticle of atrium (fig. 622).

**DISTRIBUTION:** Known only from Napo province, Ecuador.

**KEY TO SPECIES**

1. Males. ......................................................... 2
   – Females (unknown in *B. cayambe*) ........ 6
2. Conductor bifid (as in figs. 637, 639) .... 3
   – Conductor entire ................................. 5
3. Conductor long, only distal half bifid (figs. 670, 671) ....... *cayambe*
   – Conductor shorter, bifid nearly to base .... 4
4. Retrolateral prong of conductor relatively long, extending almost to embolus (fig. 649) ............... *niarchos*
   – Retrolateral prong of conductor relatively short (fig. 638) .......... *bifida*
5. Embolus relatively narrow (fig. 627) .... *perdido*
   – Embolus relatively wide (fig. 660) .... *wagra*
6. Tip of anterior genitalic process greatly expanded (fig. 652) ......................... *niarchos*
   – Tip of anterior genitalic process much smaller ........................................ 7
7. Tip of anterior genitalic process relatively wide (fig. 641) ....................... *bifida*
   – Tip of anterior genitalic process narrower (figs. 630, 663) ................. 8
8. Stem of anterior genitalic process relatively short, wide (fig. 630) .......... *perdido*
   – Stem of anterior genitalic process relatively long, narrow (fig. 663) ........ *wagra*
**Bidysderina perdido**, new species

Figures 590–630

**TYPE:** Male holotype taken by canopy fogging at an elevation of 2085 m on the Río Perdido trail in the Estación Biológica Yanayacu, 0°36.496'S, 77°52.947'W, Napo, Ecuador (Nov. 26, 2009; Niarchos Exped.), deposited in QCAZ (PBI_OON 30627).

**ETYMOLOGY:** The specific name is a noun in apposition taken from the type locality.

**DIAGNOSIS:** Males can be recognized by the long, distally darkened embolus and the long, distally narrowed conductor (figs. 626–628), females resemble those of *B. wagra* in having a relatively small atrium, but the stem of the anterior genitalic process is shorter and wider (fig. 630).

**MALE (PBI_OON 30627, figs. 590–620, 623–628):** Total length 1.72. ALE separated by less than their radius. Leg spination: femora: I p0-0-2, r0-1-0; II p0-0-1; tibiae: I v4-4-1p; II v4-4-0; metatarsi: I v2-1p-2; II v2-0-2. Embolus long, sharply bent at 2/3 its length, conductor long, distal portion extremely narrow, threadlike.

**FEMALE (PBI_OON 30615, figs. 621, 622, 629, 630):** Total length 2.40. Dorsal scutum covering 1/2 to 3/4 of abdomen length. Leg spination: femora: I p0-0-2, r0-1-1; II p0-0-2, r0-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-1. Genital atrium short, wide, anterior margin straight except at middle, where procurved, posterior margin procurred.

**OTHER MATERIAL EXAMINED:** Ecuador: Napo: Macucoloma trail, Estación Biológica Yanayacu, 0°36.196’S, 77°53.407’W, Nov. 25–30, 2009, beating foliage, elev. 2100 m (M. Ramírez et al., Niarchos Exped., MACN PBI 30604, 30612), 3♀; Río Perdido trail, Estación Biológica Yanayacu, 0°36.496’S, 77°52.947’W, Nov. 25–26, 2009, hand collecting, elev. 2085 m (M. Ramírez et al., Niarchos Exped., MACN PBI 30608, 30840), 2♂ (including E. Gaublomme DNA sequencing voucher), same, beating foliage (M. Ramírez et al., Niarchos Exped., MACN PBI 30614), 1♂, Nov. 26, 2009, elev. 2085 m (Niarchos Exped., AMNH PBI_OON 49527, 49528), 3♂ (including P. Michalik TEM voucher); Sierra Azul, 15 km W Cosanga, 0°40’55’S, 77°56’09’W, Nov. 5, 1999, montane evergreen forest litter, elev. 2350 m (R. Anderson, AMNH PBI_OON 824), 1♀; Stream trail, Estación Biológica Yanayacu, 0.60022°S, 77.89039°W, Nov. 25–30, 2009, leaf litter, elev. 2175 m (M. Ramírez et al., Niarchos Exped., MACN PBI 30615), 1♀.

**DISTRIBUTION:** Ecuador (Napo).

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**Bidysderina bifida**, new species

Figures 631–641

**TYPE:** Male holotype taken from leaf litter at an elevation of 2140 m on the trail to the San Jorge de Yanayacu Wildlife Reserve, 0.58813°S, 77.88428°W, Napo, Ecuador (Nov. 25–30, 2009; M. Ramírez et al., Niarchos Exped.), deposited in QCAZ (PBI_OON 30611).

**ETYMOLOGY:** The specific name refers to the bifid palpal conductor.

**DIAGNOSIS:** Males can easily be recognized by the greatly elongated embolus and bifid conductor (figs. 637, 639), females by the short, wide tip of the anterior genitalic process (fig. 641).

**MALE (PBI_OON 30611, figs. 631, 634–639):** Total length 1.80. ALE separated by less than their radius. Leg spination: femora: I p0-0-2, r0-1-0; II p0-0-1; tibiae: I v4-4-1p; II v4-4-0; metatarsi: I v2-1p-2; II v2-0-2. Embolus very long, sinuous, conductor bifid, with proximal prong situated almost directly ventrally of distal prong.

**FEMALE (PBI_OON 49529, figs. 632, 633, 640, 641):** Total length 2.51. Dorsal scutum covering 1/2 to 3/4 of abdomen length. Leg spination: femora: I p0-0-2, r0-1-1; II p0-0-2, r0-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-2. Genital atrium short, wide, anterior margin sinuous, closely approximating posterior margin of epigastric scutum, posterior margin procurred.


**DISTRIBUTION:** Ecuador (Napo).
Figs. 620–630. *Bidysderina perdido*, new species, male (620, 623–628) and female (621, 622, 629, 630).

**Bidysderina niarchos**, new species

Figures 642–652

**Type**: Male holotype taken in a pitfall trap at an elevation of 2130 m on the Stream trail in the Estación Biológica Yanayacu, 0°35.955'S, 77°53.341'W, Napo, Ecuador (Nov. 24–Dec. 2, 2009 (N. Duperré et al., Niarchos Exped.), deposited in QCAZ (PBI_OON 49532);

**Etymology**: The specific name is a noun in apposition taken from the expedition during which the type was collected.

**Diagnosis**: Males resemble those of *B. bifida* in having a bifid conductor; the only male available has the conductor broken on both palps, but the size, shape, and angle of the more retrolaterally situated prong of the conductor are different (compare figs. 649 and 638); females can easily be recognized by the massive anterior expansion on the anterior genital process (fig. 652).

**Male** (PBI_OON 49532, figs. 642, 645–650): Total length 1.73. ALE separated by less than their radius. Leg spination (leg II missing): femur I p0-0-2, r0-1-0; tibia I v4-4-1p; metatarsus I v2-1p-2. Embolus abruptly narrowed at more than half its length, where bent, conductor apparently bifid, distal branch broken on only available specimen.

**Female** (PBI_OON 825, figs. 643, 644, 651, 652): Total length 3.07. ALE separated by less than their radius. Dorsal scutum covering 1/2 to 3/4 of abdomen length. Leg spination: femora: I p0-0-2, r0-1-1; II p0-0-2, r0-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-2. Stem of anterior genital process relatively long, narrow.

**Other Material Examined**: Ecuador: Napo: Estación Biológica Jatun Sacha, 1°03'57.5"S, 77°37'00.2"W, Dec. 2, 2009; 410 m (Niarchos Exped., AMNH PBI_OON 49533), 1♂; Stream trail, Estación Biológica Yanayacu, 0°35.955'S, 77°53.341'W, Nov. 24–25, 2009, pitfalls, leaf litter and root mat, elev. 2130 m (N. Duperré et al., Niarchos Exped., AMNH PBI_OON 30622), 2♀.

**Distribution**: Ecuador (Napo).

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**Bidysderina wagra**, new species

Figures 653–663

**Types**: Male holotype and female allotype taken from humid forest with karstic rocks at an elevation of 750 m at the Sacha Wagra Lodge, 10 km from Papallacta to Oyacachi, in the Reserva Ecología Cayambe-Coca, 0°16’13’S, 78°05’36”W, Napo, Ecuador (Dec. 1, 2009; Niarchos Exped.), deposited in QCAZ (PBI_OON 49534);

**Etymology**: The specific name is a noun in apposition taken from the type locality.

**Diagnosis**: Males can easily be recognized by the short embolus and widened conductor (fig. 660), females by the long stem and small tip of the anterior genital process (fig. 663).

**Male** (PBI_OON 30622, figs. 653, 656–661): Total length 1.62. ALE separated by their radius to diameter. Leg spination: femur I p0-0-2, r1-1-0; tibiae: I v4-4-1p; II v4-4-0; metatarsi: I v2-1p-2; II v3-0-2. Embolus basally wide, sharply bent at about half its length, conductor similarly bent, widest at bend.

**Female** (PBI_OON 30554, figs. 654, 655, 662, 663): Total length 2.31. Dorsal scutum covering 1/2 to 3/4 of abdomen length. Leg spination: femora: I p0-0-2, r0-1-1; II p0-0-2, r0-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-2. Stem of anterior genital process massively expanded anteriorly.


**Distribution**: Ecuador (Napo).

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**Bidysderina cayambe**, new species

Figures 664–672

**Type**: Male holotype taken at an elevation of 3850 m on the road from Papallacta to Oyacachi, in the Reserva Ecología Cayambe-Coca, 0°16’13’S, 78°05’36”W, Napo, Ecuador (Dec. 1, 2009; Niarchos Exped.), deposited in QCAZ (PBI_OON 49534);

**Etymology**: The specific name is a noun in apposition taken from the type locality.

**Diagnosis**: Males can easily be recognized by the long, sinuous embolus and the long conductor, the distal half of which is bifid (figs. 667–672).

**Male** (PBI_OON 49534, figs. 664–672): Total length 2.07. ALE separated by less than their radius. Leg spination: femora: I p0-0-2, r0-1-0; II p0-0-2, r0-1-0; tibiae: I v4-4-2; II v4-4-1p; metatarsi: I v2-1p-2; II v3-0-2. Embolus very...

Figs. 653–663. *Bidysderina wagra*, new species, male (653, 656–661) and female (654, 655, 662, 663).


long, distally sinuous, conductor very long, distal half bifid.

**FEMALE:** Unknown.

**OTHER MATERIAL EXAMINED:** One male taken with the holotype (AMNH PBI_OON 49535).

**DISTRIBUTION:** Ecuador (Napo).

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