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Revision of the subfamily Bactrodinae (Heteroptera, Reduviidae), with a phylogenetic analysis of *Bactrodes*

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Abstract

The subfamily Bactrodinae is revised. Its sole genus includes five species: *Bactrodes femoratus* (Fabricius), *B. biannulatus* Stål, *B. spinulosus* Stål, *B. multiannulatus* Berg, and *B. misionensis*, new species. A cladistic analysis; descriptions of the subfamily, the genus, and its species; and a key are included, as well as a map with geographical distributions.

Key words: Bactrodinae, Bactrodes n.sp., neotropical, redescription, assassin bug

Introduction

According to Putshkov & Putshkov (1985-1989), the family Reduviidae comprises 21 subfamilies, although Maldonado Capriles (1990) considers 25 subfamilies. In Davis's (1969) made an exhaustive study of the harpactoroid complex he concluded that it is formed by the Harpactorinae (Diaspidini, Ectinoderini, Apiomerini, Harpactorini, Raphidosomini, and Tegeini), and the Bactrodinae; and he considered the clade Harpactorini-Raphidosomini-Tegeini to be the sister group of Bactrodinae.

The present revision was prompted by the lack of a critical taxonomic treatment of all the nominal species recognized in the subfamily Bactrodinae. An examination of these revealed that 5 valid species can be assigned to *Bactrodes* Stål, one of them described here as new. The present study introduces new characters for the differentiation of species and provides a phylogenetic analysis of the genus.

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Materials and methods

The material used in the present study was obtained from the following institutions: American Museum of Natural History (AMNH), New York, NY, U.S.A.; United States National Museum, Smithsonian Institution (USNM), Washington, U.S.A.; California Academy of Sciences (CAS), San Francisco, CA, U.S.A.; Snow Entomological Museum, University of Kansas (UK), Lawrence, U.S.A.; Swedish Museum of Natural History, Stockholm, Sweden (NRS); Museo Nacional, Quinta da Boa Vista, Rio de Janeiro, Brazil (QBOM); Museo Argentino de Ciencias Naturales Bernardino Rivadavia (MACN), Buenos Aires, Argentina; Museo de Ciencias Naturales de La Plata (MLP), La Plata, Argentina.

Morphological characters were observed with a Wild M-5 stereomicroscope. Illustrations were made with an attached drawing tube. Measurements are given in millimetres.

The phylogenetic analysis was done using the parsimony-based program NONA (Goloboff, 1993, version 1.5) using the command mult* 3. Table 1 shows the data matrix. The ingroup comprises 4 species: *Bactrodes femoratus*, *B. biannulatus*, *B. spinulosus*, and *B. misionensis* n. sp. Apomorphic character states were identified by outgroup comparison (Nixon & Carpenter, 1993) with the genus *Harpactor* Laporte, 1833 and *Arilus* Hahn, 1831. The choice of outgroup was based on relationships discussed in previous studies (Davis, 1969). A total of 28 characters from the genitalia and other morphological structures were analysed.

The following 28 characters were analysed:
0.- Head setose: presence [0]; absence [1]
1.- Ocelli placed on a tubercle: absence [0]; presence [1]
2.- Antennal tubercle spinose: presence [0]; absence [1]
3.- Antennal segment I: one colour [0]; two colours [1]
4.- Head spinose: absence [0]; presence [1]
5.- Genae much protruded: absence [0]; presence [1]
6.- Neck with 1+1 setose tubercles: absence [0]; presence [1]
7.- Postocular region: cylindrical [0]; rounded [1]
8.- Anteriorly projecting pronotum: absence [0]; presence [1]
9.- Posterior lobe of pronotum: not invaginated [0]; invaginated [1]
10.- Scutellum: smooth [0]; armed with setae or spines [1]
11.- Fore legs predatory: absence [0]; presence [1]
12.- Fore coxa elongate: absence [0]; presence [1]
13.- Fore trochanter with one ventral spine: absence [0]; presence [1]
14.- Fore femur with big setose tubercles: absence [0]; presence [1]
15.- Fore femora: not banded [0]; banded [1]
16.- Fore tibia with a band and an external brown spot: absence [0]; presence [1]
17.- Claws: symmetrical [0]; asymmetrical [1]

18.- Chorion and clavus: setose [0]; glabrous [1]
19.- Quadrate cell: presence [0]; absence [1]
20.- Abdomen with postlateral projections and protruded spiracles: absence [0]; presence [1]
21.- Membrane: with two cells [0]; with one cell [1]
22.- Apical hook of median process of pygophore: simple [0]; divided [1]
23.- Parameres: not seen from above [0]; seen from above [1]
24.- Apical hook of median process of pygophore: acute [0]; not acute [1]
25.- Basal part of median process of pygophore long: absence [0]; presence [1]
26.- Median process of pygophore: without basal portion and apical hook acute: absence [0]; presence [1]
27.- Gonocoxite VIII expanded laterally (ratio 5: 1): absence [0]; presence [1]

Subfamily Bactrodinae Stål, 1866

Small and slender insects (Fig. 1). Head transverse. Interocular sulcus weakly developed or obsolete. Antenna filiform, inserted laterally before eyes. First antennal segment longest. Trichobothria of antennal segment II placed 3–4 basally and 1 distally in the adult (Wygodzinsky & Lodhi, 1989). Rostrum long, slender, moderately curved; segment II always longest. Eyes protruded, rounded in lateral view. Ocelli invariably present, inserted on wide separated protuberances. Prothorax projecting beneath head. Posterior lobe of pronotum longer than anterior. Scutellum and postscutellum triangular. Tibial spur conspicuous. Tarsi three-segmented, segment II longest. Hemelytra distinctly divided into chorion and membrane, membrane with one cell. Venation specialized. Hind wing with submarginal subcosta, no secondary veins, and with a narrow postcubital sector with Pcu and 1A veins, these almost straight and parallel (Davis, 1969). Nymphs with 3 abdominal scent glands on anterior margin of terga 4–6. Median process of pygophore bifurcated. Vermiform gland and subrectal gland absent, pseudospermathecae well developed (Davis, 1969)

Distribution: Neotropical region.

***Bactrodes* Stål, 1860.**
(Fig. 1).

Type of genus: *Zelus femoratus* Fabricius 1803, p. 291.

Description.- Postocular region rounded. Eyes not passing inferior or superior edge of head. Each ocellus on a tubercle. Labrum brown to dark brown. Rostrum curved. Neck long, light brown. Pronotum with anterolateral angles developed, depressed posteriorly in

lateral view. Meso- and metapleura with short sparse setae. Scutellum smooth with two spines. Fore legs predatory, coxae very long (more than 3 times longer than wide), with sparse thin long setae, trochanters with a ventral spine, femur with two rows of brown spines ventrally, claws asymmetrical. Hemelytra not passing posterior edge of abdomen, chorion and clavus glabrous.

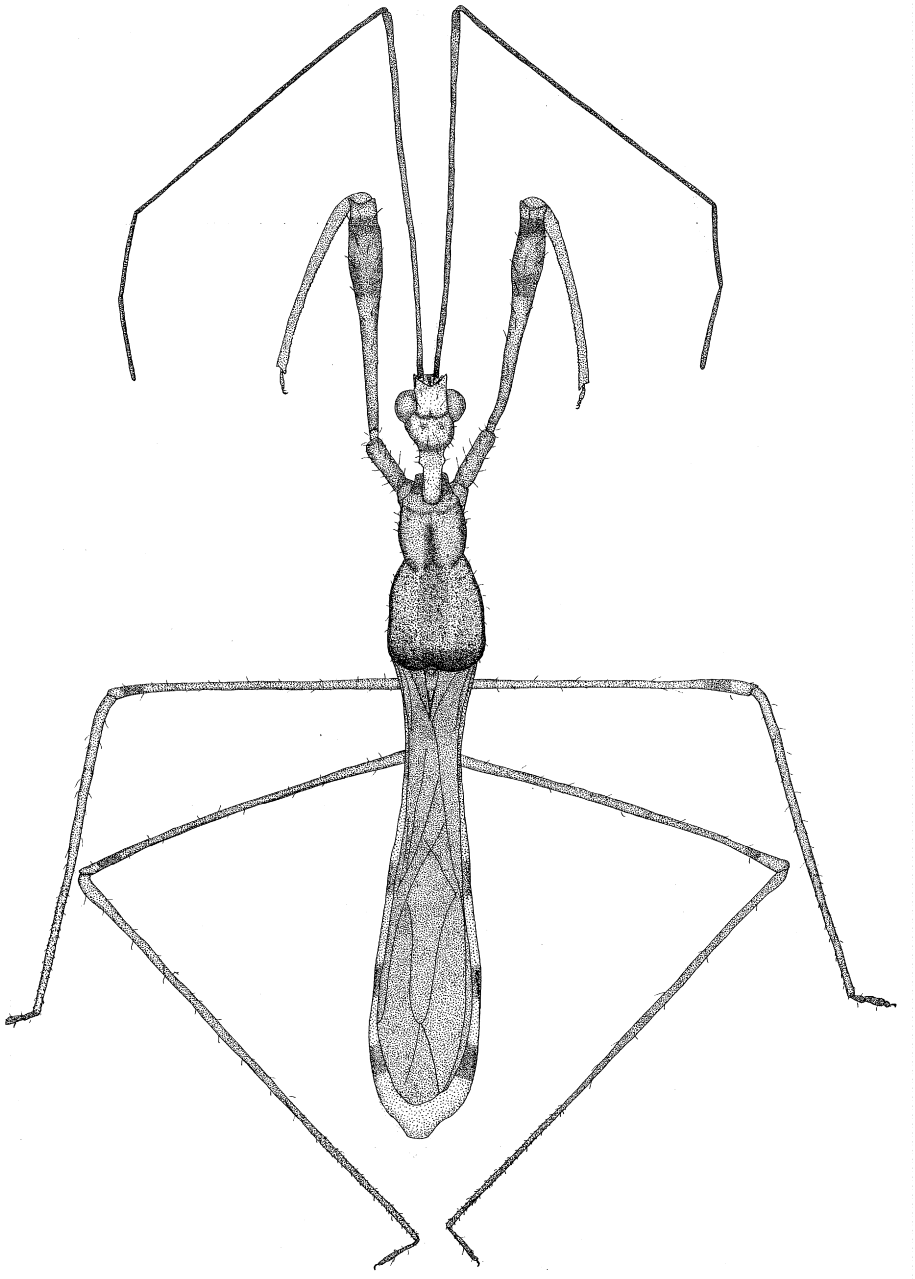

FIGURE 1. *Bactrodes femoratus*. General aspect. Scale line: 1 mm.

Key to the species

1- Body very tuberculated and setose; pronotum with two spines on humeral angles; abdomen with two posterolateral projections and protruded spiracles (Fig. 2-E) .... *B. spinulosus*

1´- Without the above characters 2

2- Antennal tubercle with a forwardly directed spine at base (Fig. 2-M), basal part of process of pygophore absent (Fig. 2-S) ..... *B. femoratus*

2´- Antennal tubercle with a granule, basal part of median process of pygophore present 3

3- Posterior lobe of pronotum not invaginated (Fig. 3-B), base of median process of pygophore thin with setae, apical hook acute (Fig. 3-H) ..... *B. biannulatus*

3´- Posterior lobe of pronotum invaginated, base of median process of pygophore thick and glabrous, apical hook very acute and slightly curved (Fig. 3-S) .... *B. misionensis*, n. sp.

Redescription of species

***Bactrodes spinulosus* Stål, 1862**
Figs. 2: A–L, 4:A.

Bactrodes spinulosus Stål 1862, 23: 442.
Saica spinulosa Walker 1873, 8: 128.

Material examined: COLOMBIA: ♀, Valle, 6mi W Cali (8°36'N 80°8'W), 1630m, 20-III-1955, Schlinger & Ross col. (CAS); GUATEMALA: ♀, Panajachel (14°44'N 91°10'W), 19-VIII-63, Cavagnaro & Irwin col. (CAS); MEXICO: ♀, Baja California, Cedros Is. (28°10'N 115°15'W), Bersteins Springs, V- 1922, det. Wygodzinsky, Inst. Med. Reg., Hanna col. (CAS), nymph without head; PANAMA: ♂, Chiriqui (8°24N 82°19'W), Boquette, R.P., 19-V-1962, H. Ruckes (AMNH); VENEZUELA: ♂, Monagas, Caripito (10°7'N 63°6'W), 9-VII-37, (CAS).

Description.- Body length 7.79–9.87 (mean = 8.56). Head length 1.17–1.53 (mean = 1.35), width 0.73–0.83 (mean = 0.77). Head tuberculated, light brown with sparse light brown setae (Fig. 2-A). Antennal length 5.70 (last segment lost). Antennal tubercle with scattered setiferous tubercle at base. Antenna light brown, segment I with tubercle at base, setose. Width of eyes 0.17–0.20 (mean = 0.19), interocular space 0.37–0.43 (mean = 0.40). Gula dark brown. Genae protruded, light brown tinged with yellow. Rostrum length 1.20-1.42 (mean = 1.30), ratio of segments' lengths ca. 1: 1.44: 1.16. Rostrum light brown, darker distally and at intersegmental regions, with setae longest ventrally on segment I and shortest dorsally on segments II and III. Neck with setose tubercles. Pronotum length 2.03–2.50 (mean = 2.22), width 1.03–1.37 (mean = 1.20). Anterior lobe light brown with

long setose tubercles, brown median sulcus evident. Posterior lobe granulated, light brown. Posterior edge invaginated. Two spines on humeral angles. Sterna setose. Scutellum with two long spines (Fig. 2-B).

Fore legs light brown, femur with setose tubercles, and tarsi brown (Fig. 2-C). Median and hind legs light brown with sparse thin setae. No differences between width of femora and tibia, tibia with more abundant thin setae, tarsi brown. Stridulatory sulcus light brown, with setose tubercles laterally (Fig. 2-D). Hemelytra length 4.56–5.76 (mean = 5.03), color light brown. Abdomen length 2.72–5.70 (mean = 4.57), width 1.20–2.43 (mean = 1.60). Abdomen not visible dorsally, with two posterolateral projections and protruded spiracles (Fig. 2-E). Connexivum light brown. Urotergites light brown, with sparse short setae.

Male: pygophore with granulations and setae, distally with two rounded setose projections (Fig. 2-F). Parameres elongate with long external setae (Fig. 2-G). Base of pygophore median process thick, apical hook rounded (Fig. 2-H). Phallus (Fig. 2-I), articulatory apparatus (Fig. 2-J).

Female: gonocoxite VIII sub rectangular, with abundant setae (Fig. 2-K), laterally expanded, relation between maximal width of gonocoxite and maximal width of gonapophysis 2.5: 1. Gonocoxite IX sub quadrangular with abundant long setae distally (Fig. 2-L).

Geographic distribution (Fig. 4-A): COLOMBIA, GUATEMALA, MEXICO, PANAMA, PUERTO RICO, and VENEZUELA.

Observations: First records for Colombia, Panama, and Venezuela, new locality records for Guatemala and Mexico. This species differs from the others by the conspicuous spinose tegument and the abdomen with two posterolateral projections and protruded spiracles.

Bactrodes femoratus (Fabricius) 1803

Figs. 1, 2: M–W, 4:B.

Zelus femoratus Fabricius 1803, p. 291.
Bactrodes biannulatus Stål 1860, 2: 80.
Bactrodes femoratus Stål 1866, 3: 130.
Saica femorata Walker 1873, 8: 128.

Material examined: ARGENTINA.: ♂, Misiones, Dep. San Javier, Puerto Londero (27°23’S 41°7’W), IX-1947. Vianna col. (MACN); BOLIVIA: ♀, Caranavi (15°46’S 67°37’W), VI-31, nº 4, Wygodzinsky det. Inst. Med. Reg. Denier' s coll. (MLP); BRAZIL: 2♂, Bahia, Itapetinga (15°15’S 40°15’W), 300m, XII-1969. F.M. Oliveira (AMNH); 2♂, Est. do Rio de Janeiro, S. Bento, D. Caixas (21°55’S 41°7’W), VI-1953, C.A.G. Seabra, Coll. Campos Seabra (QBOM); ♂, Minas Gerais, Viçosa (20°45’S 42°53’W), VII-1944, Carcavalho col., Wygodzinsky det.(QBOM); female Carmo do Rio Claro (20°58’S

46°6'W), 12-15. Carcavalho col., Wygodzinsky det. (UK); 3♀, 1♂, Rio de Janeiro D.F. (Paineiras) (22°54'S 43°11'W), 3-4-III-957, Carcavalho det. 1990, Bercker & Carcavalho col. (QBOM); ♂, Para, Jacareacanga (6°16'S 57°39'W), XII-1968, M. Alvarenga. (AMNH); without abdomen , Wygodzisnky det., Inst. Med. Reg. (MLP).

Description.- Body length 8.48–8.99 (mean = 8.68). Head length 1.43–1.50 (mean = 1.48), width 0.70–0.80 (mean = 0.75). Head smooth brown, with sparse light brown setae (Fig. 2-M). Postocular region with abundant long and brown setae. Antennal length 8.37–9.55 (mean = 8. 65), ratio of segments' lengths ca. 1: 0.60: 0.13: 0.35. Antennal tubercle with anteriorly directed spine at base. Antennal segment I light brown, except basally and apically brown, segment II and III brown. Width of eyes 0.13–0.21 (mean = 0.16), interocular space 0.33–0.42 (mean = 0.38). Genae protruded, light brown. Labrum dark brown. Gula light brown. Rostrum length 1.30–1.60 (mean = 1.49), ratio of segments' lengths ca. 1: 1.47: 0.67. Rostrum segments I and II light brown except brown distally with sparse short setae, segment III brown except dark brown apically. Neck dorsally with 1+1 small setose tubercles. Pronotum length 1.90–2.43 (mean = 2.11), width 0.95–1.23 (mean = 1.09). Anterior lobe brown with small short setiferous tubercles. Median sulcus evident only distally. Posterior lobe granulated and setose, light brown. Posterior edge invaginated. Scutellum smooth brown and setose (Fig. 2-N). Sterna glabrous. Fore legs light brown, trochanters with sparse setae, femora light brown except a dark brown ring distally or two small rings, one distally and the other medially, tibia light brown setose, tarsi light brown except segment III brown (Figs. 2-O). Median and hind legs light brown, femora slightly incrassate apically, tibia with abundant thin setae, tarsi brown. Pleura brown glabrous. Stridulatory sulcus dark brown and setose (Fig. 2-P). Hemelytra length 4.74–5.32 (mean = 5.10), brown. Abdomen length 4.75–5.70 (mean = 5.24), width 1.20- 2.28 (mean = 1.41). Abdomen visible from above. Connexivum light brown, urotergites light brown and glabrous.

Male: pygophore smooth and setose, without base of median process (Fig. 2-Q). Parameres elongate, apically curved with short internal and external setae (Fig. 2-R). Apical hook very acute and straight (Fig. 2-S). Phallus (Fig. 2-T), articulatory apparatus (Fig. 2-U)

Female: gonocoxite VIII subquadrangular, abundant setae present (Fig. 2-V), laterally expanded, relation between maximal width of gonocoxite and maximal width of gonapophysis 5.3: 1.3. Gonocoxite IX subtriangular, distal abundant long setae present (Fig. 2-W).

Distribution (Fig. 4-B): ARGENTINA, BOLIVIA, BRAZIL, GUYANA, and PANAMA.

Observations: New record for Bolivia, new locality records for Argentina and Brazil. The closest species are *B. biannulatus* and *B. misionensis* n. sp., but *B. femoratus* differs in the structure of the male and female genitalia.

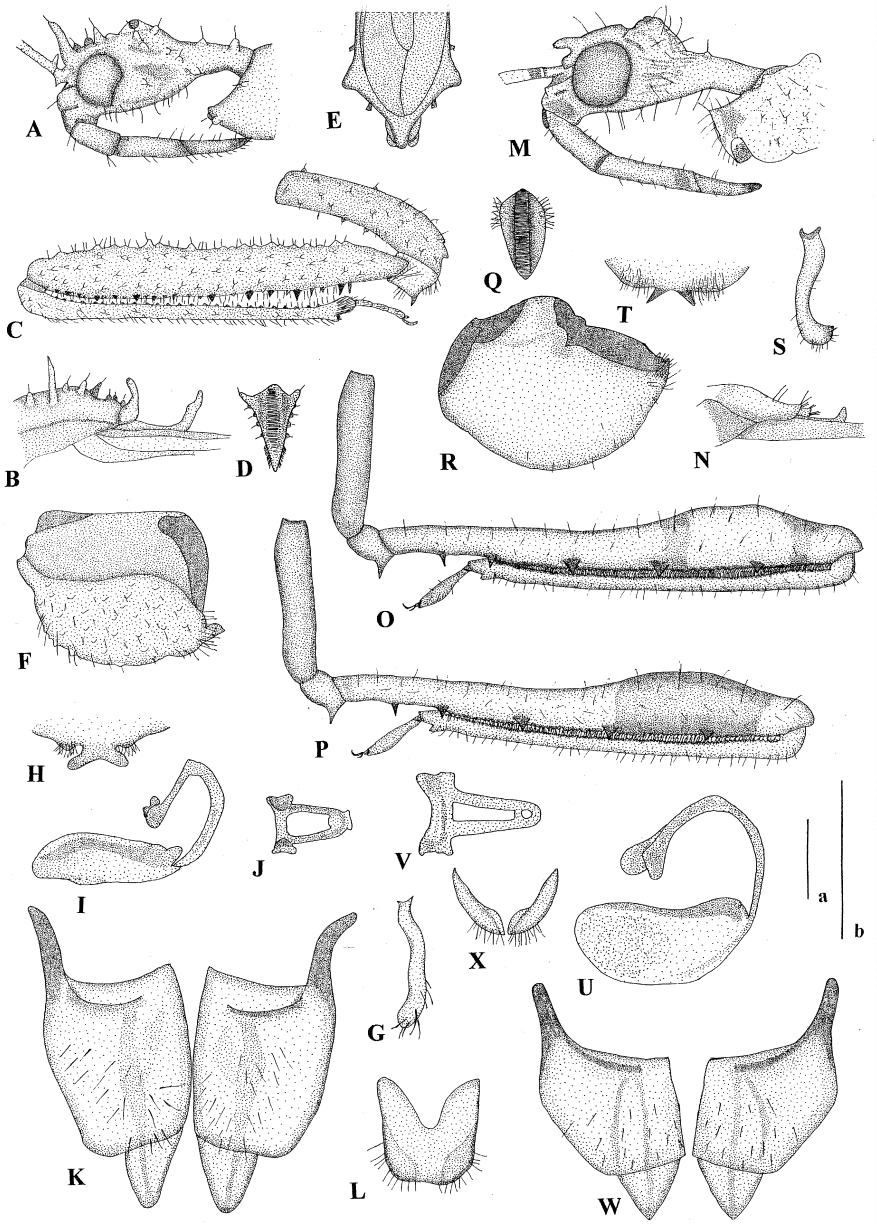

FIGURE 2. A–L. Bactrodes *spinulosus:* A. Head, lateral view; B. Scutellum, lateral view; C. Fore leg; D. Stridulatory sulcus; E. Abdomen, distally; F–J. Male genitalia: F. Pygophore, lateral view; G. Paramere; H. Median process of pygophore; I. Phallus; J. Articulatory apparatus; K–-L. Female genitalia: K. Gonocoxite and gonapophysis VIII; L. Gonocoxite IX; Figs. M- W. *Bactrodes femoratus:* M. Head, lateral view; N. Scutellum, lateral view; O–P. Fore leg; Q. Stridulatory sulcus; R–V. Male genitalia: R. Pygophore, lateral view; S. Paramere; T. Median process of pygophore; U. Phallus; V. Articulatory apparatus; W–X. Female genitalia: W. Gonocoxite and gonapophysis VIII; X. Gonocoxite IX.
a: Fig. E. b: Figs. A–D, F–X. Scale line: 1mm, Figs. A–E, M–Q; scale line: 2mm, Figs. F–L, R–X.

***Bactrodes biannulatus* Stål, 1862**
Figs. 3: A–L, 4: C.

Bactrodes biannulatus Stål 1860, 2: 80.
Bactrodes biannulatus: Mc Atee & Malloch 1923, 16: 247.

Material examined: Typus: BRAZIL (NRS); allotypus: Brazil, Rio de Janeiro (NRS); paratypus: Brazil (NRS). ARGENTINA: 2♀, 1♂, Misiones, Dep. San Javier, Puerto Londero (27°23'S 41°7'W), IX- 1947. M.J. Vianna col. (MACN); 2♀, det. Wygodzinsky, Inst. Med. Reg. (MACN); BRAZIL: ♀, Rio de Janeiro, Morro San Silvestre, 28-VII-28, Wygodzinsky det., Denier's coll. (MLP); ♀, Brasilia D.F. (15°47'S 47°54'W), VI-1960-86/60, Carcavalho det. 1990. Exp. Formosa col. (QBOM); MEXICO: ♂, Oaxaca, just W of Chiapas border 19 km W of Rizo de Oro ridge S. Cerro Baul (17°5'N 96°44'W), alt. 1615m, 28-IV-1972, Breedlove col. (CAS); PANAMA: ♂, Portobello (9°33'N 79°39'W), II-1911, det. Mc Atee & Malloch (USNM); 1♂, A. Busck col. (USNM); 6♂, 1♀, Cocle Prov., El Valle, 700m. 16-V-1973. P.D. Ashlock col. (at light) (UK); ♂, (MLP).

Description.- Body length 7.66–9.37 (mean = 8.20). Head smooth, light brown, with scarse light brown setae (Fig. 3-A). Length 1.07–1.37 (mean = 1.25), width 0.67–0.73 (mean = 0.70). Antennal tubercle with granule at base. Antennal length 7.59–9.45 (mean = 8), ratio of antennal segments' lengths ca. 1: 0.70: 0.24: 0.17. Antennal segment I light brown except basally and distally brown, segment II–IV brown, with setae. Width of eyes 0.15–0.20 (mean = 0.18), interocular space 0.30–0.35 (mean = 0.33). Genae protruded light yellow. Gula brown. Rostrum length 1.33–1.37 (mean = 1.35), ratio of rostrum segments' lengths ca. 1: 1.42: 0.92. Rostrum segments I and II light brown, darker distally, with scarse short setae; segment III brown with abundant setae dorsally. Neck with small setose tubercles. Pronotum length 1.70–2.40 (mean = 1.93), width 1.07–1.17 (mean = 1.09). Anterior lobe light brown with setiferous short tubercles. Median sulcus evident only distally. Posterior lobe brown granulated, posterior edge not invaginated (Fig. 3-B). Sterna glabrous. Scutellum smooth (Fig. 3-C). Fore legs light brown, femora light brown except two brown rings medially and apically, tibia light brown except a basal and dorsal brown spot with sparse thin setae, tarsi light brown, except segment III brown (Fig. 3-D). Median and hind legs light brown, femora slightly incrassate apically, tibia with abundant thin setae, tarsi brown. Propleura setose. Stridulatory sulcus light brown and setose (Fig. 3-E). Hemelytra length 4.24–5.63 (mean = 4.67), brown. Abdominal length 4.36–5.44 (mean = 4.70), width 1.00–1.23 (mean = 1.10). Abdomen visible from above. Connexivum light brown. Urotergites light brown and glabrous.

Male: pygophore glabrous and smooth, two acute projections distally (Fig. 3-F). Parameres elongate, apically curved, long internal setae present (Fig. 3-G). Base of pygophore median process thin, setose, apical hook acute (Fig. 3-H). Phallus (Fig. 3-I), articulatory apparatus (Fig. 3-J).

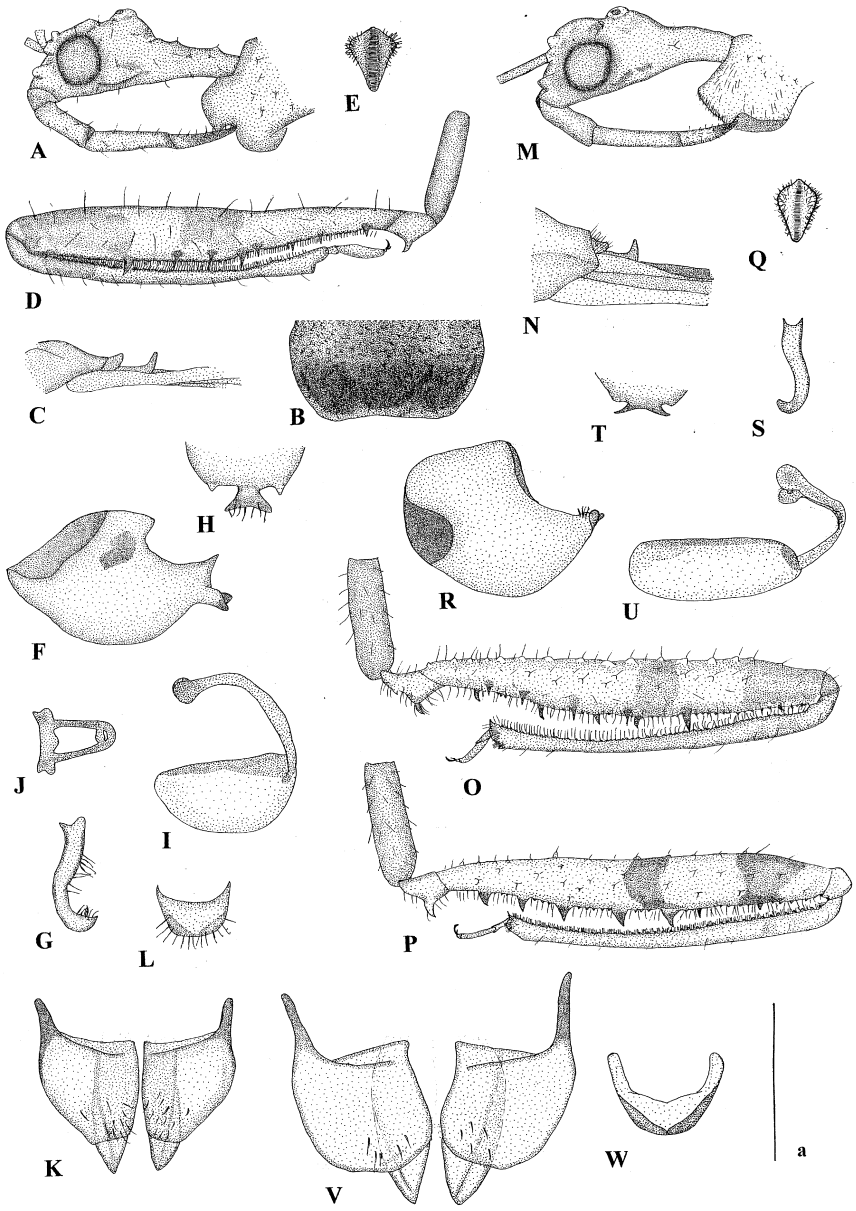

FIGURE 3. A- L. *Bactrodes biannulatus*: A. Head, lateral view; B. Posterior lobe of pronotum; C. Scutellum, lateral view; D. Fore leg; E. Stridulatory sulcus; F- J. Male genitalia: F. Pygophore, lateral view; G. Paramere; H. Median process of pygophore; I. Phallus; J. Articulatory apparatus; K-L. Female genitalia: K. Gonocoxite and gonapophysis VIII; L. Gonocoxite IX; M- V. *Bactrodes misionensis*, n. sp.: M. Head, lateral view; N. Scutellum, lateral view; O-P. Fore leg; Q. Stridulatory sulcus; R-U. Male genitalia: R. Pygophore, lateral view; S. Paramere; T. Median process of pygophore; U. Phallus; V-W. Female genitalia: V. Gonocoxite and gonapophysis VIII; W. Gonocoxite IX.

Scale line: 1mm, Figs. A-E, M-Q; scale line: 2mm, Figs. F-L, R-W.

Female: gonocoxite VIII subtriangular, sparse setae distally (Fig. 3-K), laterally expanded, relation between maximal width of gonocoxite and maximal width of gonapophysis 2.8: 1. Gonocoxite IX subquadrangular, distal long setae present (Fig. 3-L).

Distribution (Fig. 4-C): ARGENTINA, BRAZIL, MEXICO, and PANAMA.

Observations: First record for Argentina, and new locality records for Brazil, Mexico, and Panama. The closest species are *B. femoratus* and *B. misionensis* n. sp., but *B. biannulatus* differs in the shape of the posterior lobe of the pronotum.

Bactrodes misionensis, n.sp.
Figs. 3: M–V, 4: C.

Holotype: m, BRAZIL, Goiás, Goiana 12-VII-1957, Malkin col. (CAS)

Other Material: ARGENTINA: 3♀, Misiones, Dep. Concepción, Sta. María, det. Wygodzinsky, Inst. Med. Reg., Vianna col. (MACN); ♀, 48059, (MACN); BRAZIL: ♂, Goiás, Goiana 12-VII-1957, Malkin col. (CAS); ♂, M. Gerais, Viçosa (20°45'S 42°53'W), 7-1944, Wygodzinsky det., Carcavalho col., Wygodzinsky coll. (AMNH).

Diagnosis: This species can be distinguish by the invaginated posterior lobe of the pronotum, and the characteristic shape of the median process of pygophore in males (Fig. 3-S).

Description.- Body length 7.78- 9.18 (mean = 8.28). Head length 1.20–1.50 (mean = 1.35), width 0.67–0.75 (mean = 0.71). Head smooth brown, without setae (Fig. 3-M). Antennal length 7.74–9.28 (mean = 8.51), ratio of segments' lengths ca. 1: 0.92: 0.16: 0.08. Antennal tubercle with a granule at base. Antennal segment I light brown except basally and apically brown, segments II-IV brown, setose. Labrum dark brown. Width of eyes 0.17–0.20 (mean = 0.19), interocular space 0.33- 0.40 (mean = 0.37). Genae protruded, light brown. Rostrum length 1.18–1.31 (mean = 1.26), ratio of segments' lengths ca. 1: 1.56: 1.03. Rostrum light brown, except segment III dark brown distally with short sparse setae. Neck with 1+1 dorsal setose tubercles. Pronotum length 1.87–2.33 (mean = 2.00), width 1.00–1.26 (mean = 1.10). Anterior lobe light brown with small short setiferous tubercles. Median sulcus evident only distally. Posterior lobe granulated brown. Basal spine of scutellum setose (Fig. 3-N). Sterna glabrous. Fore legs light brown, trochanters with setae, femora light brown except one dark brown ring distally and another medially, tibia light brown with or without a stripe basally, with sparse thin setae, tarsi light brown except segment III brown (Figs. 3-O). Median and hind legs light brown, femora slightly incrassate apically, tibia with abundant thin setae, tarsi brown. Stridulatory sulcus light brown and setose (Fig. 3-P). Hemelytra length 4.49–5.69 (mean = 4.82), color brown. Abdomen length 4.56–5.38 (mean = 4.79), width 1.03–1.13 (mean = 1.09). Abdomen visible from above. Connexivum brown with dark brown spots. Urotergites light brown and glabrous.

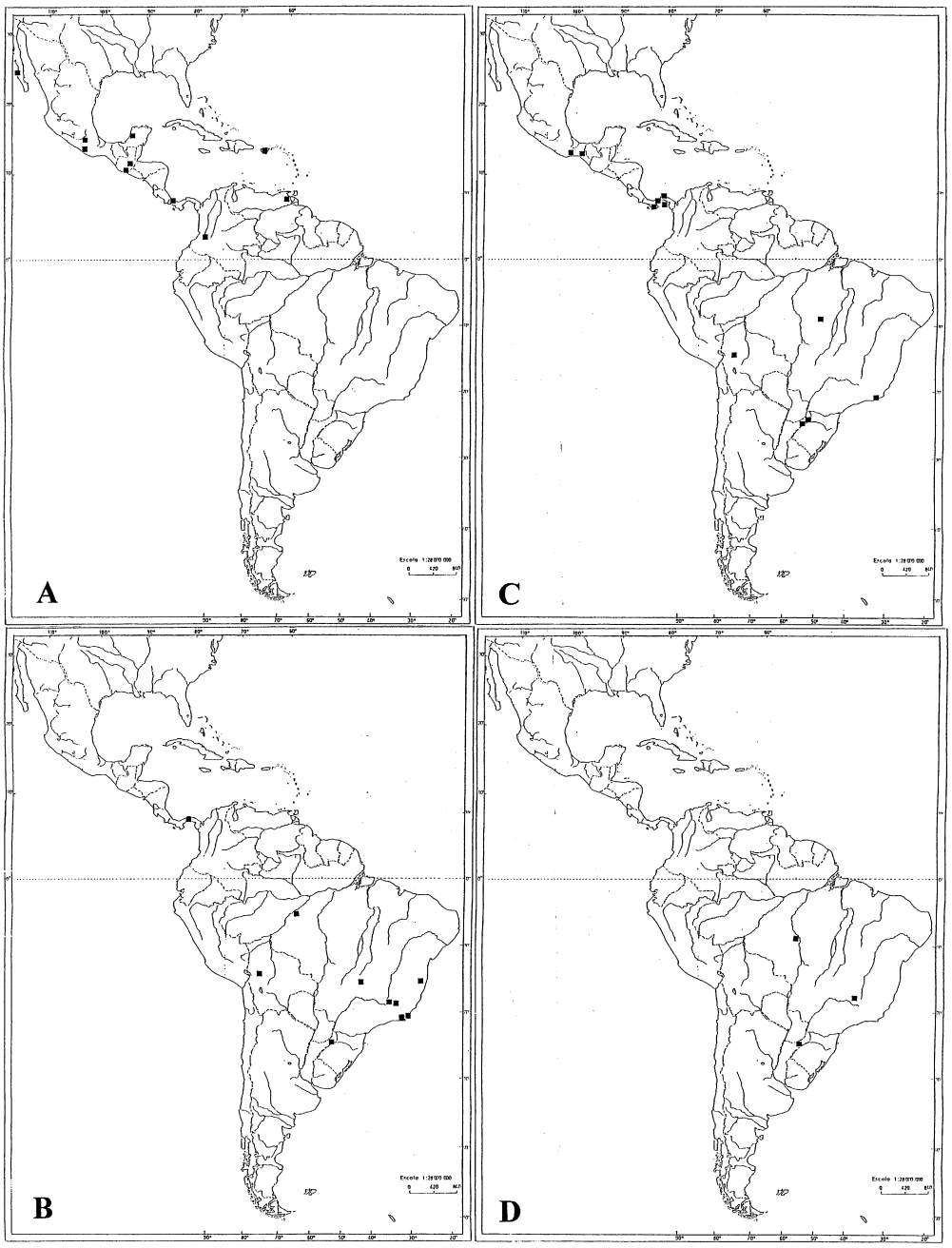

FIGURE 4. Geographic distribution: A- *Bactrodes spinulosus*. B- *Bactrodes femoratus*. C- *Bactrodes biannulatus*. D- *Bactrodes misionensis*.

Male: pygophore glabrous and smooth (Fig. 3-Q). Parameres elongate curved apically, glabrous (Fig. 3-R). Base of median process thick, apical hook acute and slightly curved (Fig. 3-S). Phallus (Fig. 3-T).

Female: gonocoxite VIII subquadrangular, distal scarse setae present (Fig. 3-U), laterally expanded, relation between maximal width of gonocoxite and maximal width of gonapophysis 3.9: 1.1. Gonocoxite IX subtriangular and glabrous (Fig. 3-V).

Distribution (Fig. 4-D): ARGENTINA and BRAZIL.

Observations: The closest species is *B. biannulatus,* but *B. misionensis* differs in the structure of the female genitalia.

***Bactrodes multiannulatus* Berg, 1884, p. 112**

Material studied: Typus. ARGENTINA: Buenos Aires, Ramos Mejía (34°36'S 58°23'W), Aguirre col. (MACN).

Distribution: ARGENTINA.

Observations: This specimen is much destroyed and the abdomen is collapsed. The presence of long hairs all over the body, the absence of ocelli, and the short hemelytra make us think that it could be a nymph, although according to Berg's description it has ocelli. The legs show a different color pattern from the rest of the species; they are light brown with dark brown stripes. The legs of the *B. spinulosus* nymph are light brown, as well as the adult.

Results of the character analysis

Of the 28 characters 0-8 are from the head, 8-19 are from the thorax, and 20-27 are from the abdomen, including male genitalia and female genitalia.

The analysis of the data matrix (table I) produced one cladogram (length 32 steps, CI= 87 and RI= 83). In the cladogram (Fig. 5), the following phylogenetic sequences results: (*Harpactor (Arilus* (*B. spinulosus* (*B. femoratus* (*B. biannulatus* (*B. misionensis* n. sp.))))))).

TABLE 1. Matrix of 28 characters and 6 taxa used for phylogenetic analysis of the genus *Bactrodes* Stål.

Characters	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7
Harpactor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arilus	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
B. biannulatus	1	1	1	1	0	0	0	1	1	0	1	1	1	1	0	1	1	1	1	1	0	1	1	0	0	1	0	0
B. femoratus	1	1	0	1	0	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	1	1	0	0	0	1	1
B. spinulosus	1	1	0	0	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0
B. misionensis	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0	0	0	0	0

The species here assigned to the genus *Bactrodes* constitute a natural group (fig. 5).The most important characters that support monophyly are: predatory fore legs, presence of a ventral spine on fore trochanter, asymmetrical claws, and bifurcated apical hook of median process of pygophore. *B. femoratus*, *B. biannulatus*, and *B. misionensis* share the character: antennal segment I of two colors, and banded fore femora. *B. biannulatus* and *B. misionensis* n. sp. are related by the coloration of fore tibia and by the granulate antennal tubercle.

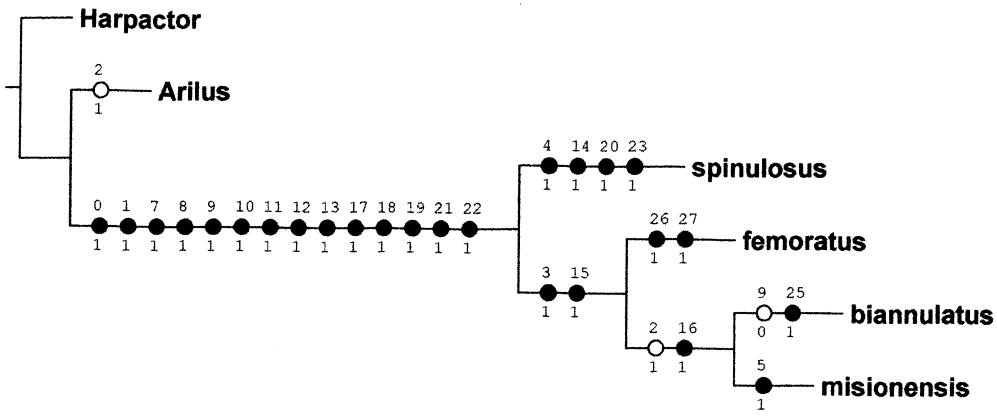

FIGURE 5. Strict consensus cladogram.

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