

New species of *Macrobaris* Champion grass weevils from the New World tropics and subtropics (Coleoptera, Curculionidae, Baridinae)

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Abstract

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Key Words

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Macrobaris Champion is synonymized with *Iops* Casey (**new synonym**), transferred from Baridini: Baridina to Apostasimerini: Madopterina (**new placement**), and revised. Twenty one species are documented from fourteen countries, ranging from the USA in the north to Paraguay in the south. Thirteen new species are described: *M. acutipennis* **new species** (Mexico), *M. aquilonia* **new species** (USA), *M. balicosa* **new species** (Guyana, Suriname, Venezuela), *M. colemycter* **new species** (Mexico), *M. exerens* **new species** (Venezuela), *M. laciniosa* **new species** (Mexico), *M. lateriquetra* **new species** (Costa Rica, Panama), *M. leptochele* **new species** (Peru), *M. runa* **new species** (Panama, Peru), *M. spinigera* **new species** (Brazil, Venezuela), *M. stictica* **new species** (Ecuador, Peru), *M. unguiculus* **new species** (Ecuador), and *M. zacatensis* **new species** (Costa Rica). *Iops bicolor* Hustache is excluded from the genus and transferred to Madopterina *incertae sedis* (**new placement**). Five species were collected from Poaceae, four of them from bamboos. A dichotomous key for the identification of currently known species is provided, with *M. sparsa* Casey treated as a morphologically unresolved complex. *Limnobaris rufula* Champion is transferred to *Valdenus* Casey, as *V. rufulus* **new combination**, and is reported from Costa Rica for the first time.

Introduction

Baridine weevils occur worldwide but are particularly diverse in the Americas. The present study is concerned with a group of slender, grass-associated species (Figs 1–21) distributed from the southern United States to northeastern Argentina, southern Brazil, and Paraguay. Morphologically, they deviate from most known Baridinae in having the rostrum notably deflected underneath the body (Figs 22, 23). This interesting modification has evolved with an alternative feeding strategy in at least one species: the weevil clings to the leaf-blade and, by slowly moving backward, scrapes away the upper parenchyma thereby leaving a characteristic linear feeding mark on the grass. Narrow shape and parallel venation of the leaf obviously support this backward motion. The beetles can be quite abundant and have been known for more than a century albeit the North

American species never were identified let alone formally described. Also noteworthy is their enormous variation of morphological characters which are used (and, perhaps, overemphasized) in the classification of other weevil groups. At least one species has only three rather than the usual five tarsomeres; others have the two tarsal claws medially fused to a single blade or have lost one claw altogether. The basal lobe of the prosternum may have a lateral carina along each side of the median channel which in one case is modified to an almost completely closed cup at its end, for the reception of the rostrum in repose. The distal section of the last visible tergite (eighth in male, seventh in female) may or may not form a vertical pygidium. Some species have the fifth and sixth elytral interstriae basally converging or the interspace in between is deeply notched, a condition used by Buchanan (1932) to distinguish *Anacentrinus* Buchanan (now *Apinocis* Lea) from

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Oligolochus Casey, two other widespread genera of mostly grass- and some sedge-associated baridines in the Americas. Unfortunately, the entire complex, which is in considerable taxonomic disarray and encompasses several poorly justified family-group names, is underrepresented in collections. The primary focus of the present study is on the North and Central American species, which I have studied in collaboration with the Instituto Nacional de Biodiversidad Costa Rica and the United States Department of Agriculture. Because the main diversity is in South America and several important character states of the genus appear in a mosaic-like fashion here and there over the entire range, I am documenting also the sparse material so far known from South America.

Material and methods

Most specimens used herein are from the unsorted material of the North and Central American weevil collections I was able to study during the past five years. The personal collection of Charlie and Lois O'Brien was particularly rich and formed the foundation for this study. Some supplementary material and biological information is from my own fieldwork conducted in the Area Conservación de Guanacaste, Costa Rica and in Arizona with Charlie O'Brien. Bob Anderson located additional unrecognized specimens in the Canadian Museum based on my initial results. The types of eight previously described species were examined. Specimens are deposited in the following collections and the codes are used to refer to them in the text: American Museum of Natural History, New York City (AMNH); The Natural History Museum, London (BMNH); California Academy of Sciences, San Francisco (CASC); Canadian Museum of Nature, Ottawa (CMNC); Charles W. and Lois O'Brien personal collection, Green Valley, Arizona (CWOB); Florida State Collection of Arthropods, Gainesville (FSCA); Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica (INBC); Jens Prena personal collection, Berlin (JPPC); Museum of Comparative Zoology, Boston (MCZ); Muséum national d'Histoire naturelle, Paris (MNHN); Museum für Naturkunde, Berlin (MNHUB); Museu de Zoologia, Universidade de São Paulo, Brazil (MZSP); Naturhistoriska riksmuseet, Stockholm (NHRM); Senckenberg Naturhistorische Sammlungen Dresden (SNSD); Insect Collection at Texas A&M University, College Station (TAMU); and Smithsonian Institution, National Museum of Natural History, Washington (USNM).

The species are arranged in the text in the order they come out in the key. The descriptions give the general color of the integument and the antenna but ignore the variable amount of reddish brown on the legs (particularly tarsus, tibia, and trochanter) and rostrum. Because of the sparse material, I focused on external morphological characters and dissections of genitalia were made only for males of eight and females of three species. Measurements were taken with an ocular micrometer in a dissecting microscope. Size ranges of specimens are given as total length without rostrum. Digital images were taken with a Zeiss AxioCam HRc mounted on a Zeiss SteREO Discovery V20 or on a Leitz Diaplan. Illustrations were drafted with Aldus Freehand and finalized with Adobe Photoshop.

Taxonomic treatment of *Macrobaris*

Macrobaris Champion, 1909: 417. Hustache (1938: 43), O'Brien and Wibmer (1984: 191), Alonso-Zarazaga & Lyal (1999: 90), Davis (2009: 39, 2010: 58).

Iops Casey, 1922: 317 (274 in key). Hustache (1938: 128, 1939: 123), Wibmer & O'Brien (1986: 317), Alonso-Zarazaga & Lyal (1999: 99), Davis (2009: 42, 2010: 60). **New Synonym.**
Jops; Hustache (1950: 60–63), lapsus calami.

Diagnosis. Even though *Macrobaris* is morphologically notably heterogeneous, the included species are relatively easy to recognize based on their slender, elongate shape (Figs 1–21). Generally constant characters with diagnostic value are (1) the small, compressed antennal club, (2) the prosternal channel, (3) the strongly deflected rostrum, and (4) the ventromedially inserted aedeagal apodemes. Less constant but of some diagnostic value are the transverse pygidial fold (absent in *M. baltica*, *M. latitarsis*, and *M. sparsa*) and the often notably humped base of the pronotum. *Iopsidaspis* Casey is closely related (shares characters 1–3; 4 unknown) but the included species are usually subtriangular and have basally separate claws. *Leptinobaris* Champion (shares characters 1 and 2) is intermediate between *Macrobaris* and *Valdenus* Casey, with a moderately curved rostrum and basally separate claws. Some elongate species of *Coelonertinus* Solari & Solari may be confused with *Macrobaris* but those have non-decussate mandibles and almost always basally separate claws.

Description. Body narrow-elongate, subcylindrical. Color black (most) or brown, appendages often partially

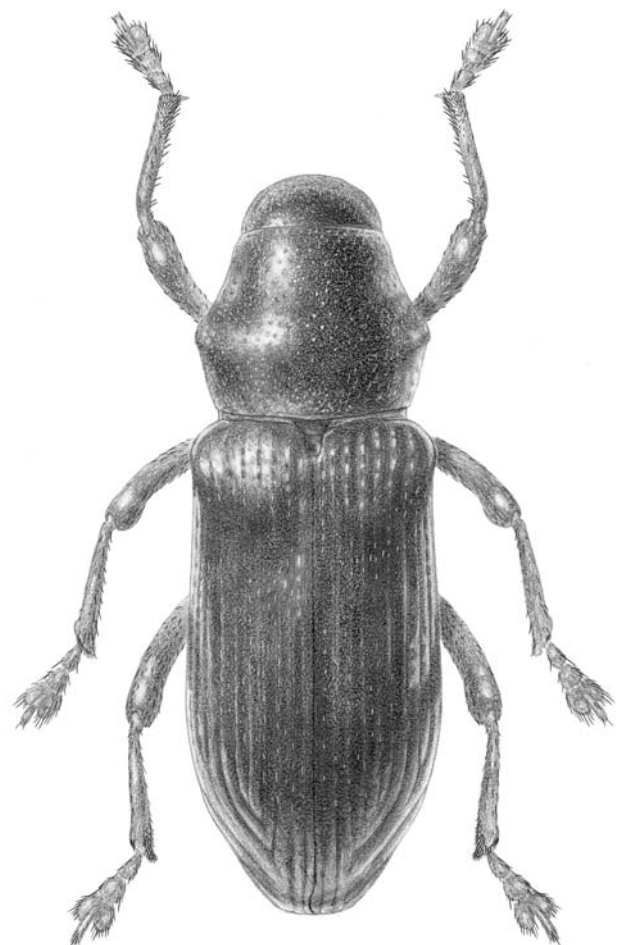
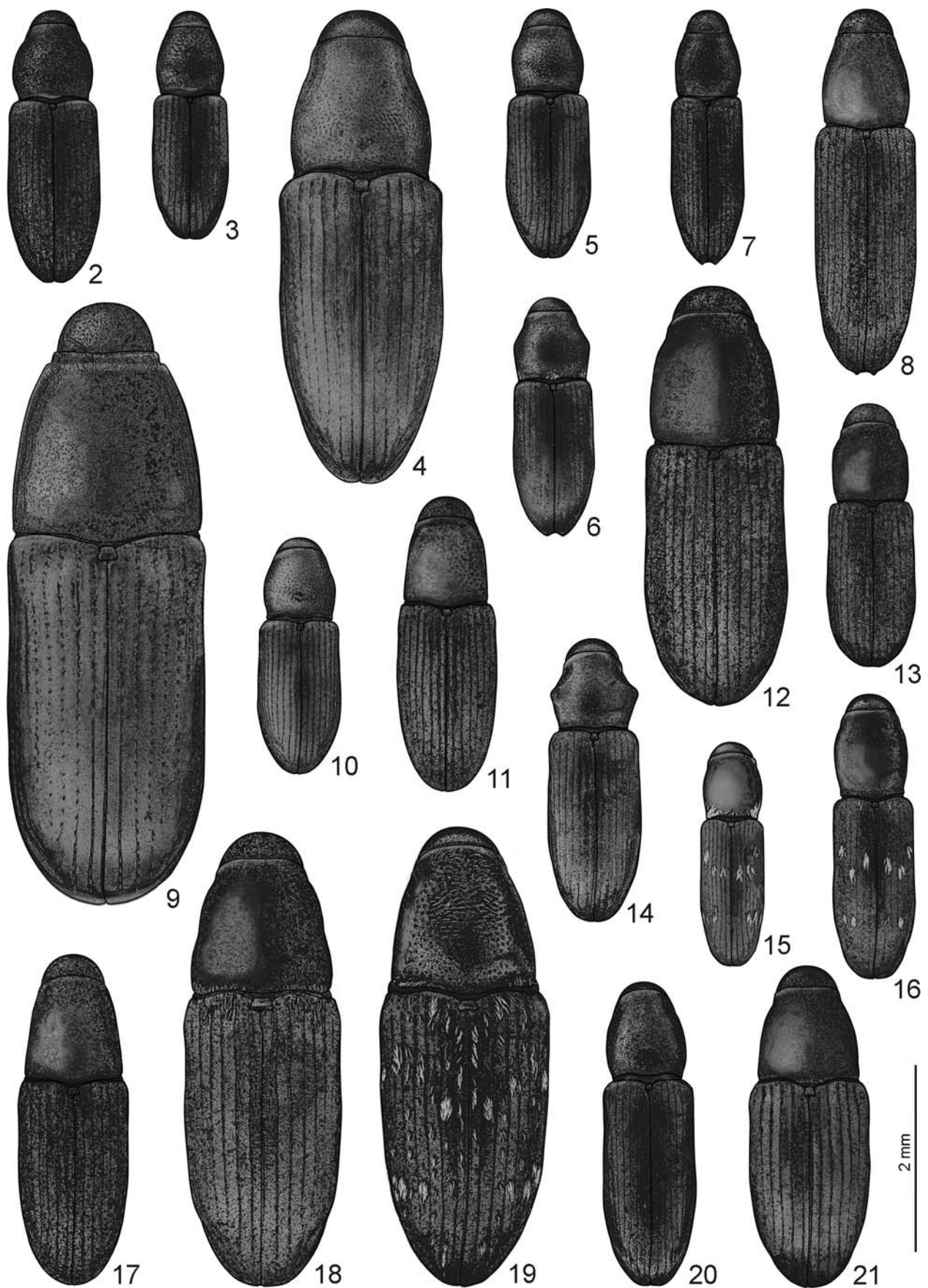


Figure 1. Dorsal habitus of *Macrobaris lateriquetra* ($L = 3.2$ mm). Pencil drawing by Sean Vidal Edgerton.



Figures 2–21. Dorsal habitus of *Macrobaris* species: 2. *M. spinigera*; 3. *M. unguiculus*; 4. *M. leptochele*; 5. *M. runa*; 6. *M. acutipennis*; 7. *M. laciniosa*; 8. *M. producta*; 9. *M. colemycter*; 10. *M. aquilonia*; 11. *M. inaequalis*; 12. *M. rufitarsis*; 13. *M. micronyx*; 14. *M. lateriquetra*; 15. *M. exerens*; 16. *M. stictica*; 17. *M. sparsa*; 18. *M. cribricollis*; 19. *M. balicosa*; 20. *M. zacatensis*; 21. *M. iotomioidea*.

rufescent; derm mostly glabrous, locally with broad white and/or plumose setae. Head spherical, frons sometimes flat; eyes short-ovate, flush with head contour or slightly bulging; frons as wide as or slightly narrower than rostrum at base, frontal fovea obsolete; rostrum moderately thick, subcylindrical (most) or distally attenuate (one species), strongly deflected underneath prosternum, short (extending to base of procoxa) to moderately long (extending to mesocoxa); mandibles slightly curved and moderately stout, inner face with 1 small secondary tooth; antennal scrobe descending and reaching ventral margin of rostrum before eye; antenna inserted between mid-length and basal third of rostrum, funicle 7-articulated, club small and compressed, with individual articles fused but discernible. Prothorax approximately as wide as humeri, shape varied but usually longer than wide; base margined, slightly sinuous; anterior margin nearly straight, without pronounced tubular constriction except in *M. colemycter*; prosternum channeled at least in front of coxae, with lateral margins simple or elevated, intercoxal prosternal process either simple or with carinae extending rostral channel (in one species with distally closed cup); procoxae separated by width of rostrum. Elytron with apex simple or projecting, conjointly rounded to slightly excised, pygidium (formed by apex of tergite 7 of female or tergite 8 of male) vertical, slightly to distinctly protruding underneath elytron, or undeveloped; humeri developed, subapical elytral callosity indistinct or absent; striae 10, deep and continuous, narrowed from base to apex, punctation usually deep and distinct near base but smaller and less conspicuous distally; interstriae almost impunctate, flat in anterior and median sections, slightly to distinctly convex on declivity. Last (distal) external tergite often with abruptly depressed apical section delimited by transverse carina. Sclerolepidia digitate, appressed to distinctly protruding. Stridulation device with 2 rows of plectra on tergite 7 in both sexes (inconspicuous or absent in small species), files underneath elytron not discernible. Legs slender; femora with or without ventral tooth and/or fine denticles; tibiae apico-dorsally with short, more or less regular row of setae, ventrodistal spine small to very large, often wide and bladelikey; number of tarsomeres 5 (most) or 3, third bilobed to subcordate, fifth very variable in size, tarsal claws (if tarsomere 5 present) 1 or 2, if 2 then either subconnate at base or partially to completely fused. Aedeagus slender elongate, with basal section subcylindrical, anterior section subcylindrical to moderately compressed dorsoventrally, basal apodemes at least half as long as body of aedeagus, inserted almost ventromedially, internal sac slightly protruding basally when inverted, conspicuous internal sclerites absent (Fig. 32); tegminal ring complete, with long parameroid lobes (Fig. 33); male sternite 8 bipartite, medially desclerotized, male sternite 9 robust, distal processes symmetrical (Fig. 34). Female genital tract with long, tubular vaginal chamber, bursa short and wide, spermathecal duct slightly longer than spermatheca, not coiled, in-

serted distally or subdistally in bursa, spermatheca compact, collum very short, cornu widely arched, nodulus short and stout. Total body length 2.0–6.6 mm.

Distribution. The 21 recognized species occur from Arizona, USA (ca. 32° N) to southern Paraguay (ca. 27° S). Collecting records exist from Argentina, Bolivia, Brazil, Costa Rica, Ecuador, Guatemala, Guyana, Mexico, Panama, Paraguay, Peru, Suriname, United States of America, and Venezuela. The records from Argentina (Hustache 1950 and subsequent cataloguers) were given erroneously and apply to Caranavi in Bolivia. *Iops bicolor* Hustache, described from Argentina with uncertain generic placement (Hustache 1939), is transferred here to *Madopterina incertae sedis* (**new placement**).

Biology. Five species have been collected from grasses (Poaceae), four of them (*M. colemycter*, *M. lateriquetra*, *M. stictica*, *M. zacatensis*) from bamboos. That the host range is not restricted to the Bambusoideae is demonstrated by the occurrence of *M. aquilonia* in southern Arizona, where Charlie O'Brien and I swept specimens from an unidentified grass in an open area devoid of bamboos. *Macrobaris zacatensis* was common in Santa Rosa National Park, Costa Rica during my fieldwork between 20.–26.vi.2011. Single specimens occurred at first rather scattered throughout the forest understory around the park headquarters on *Olyra latifolia* L. but their numbers picked up rapidly within days. This coincided with the emergence of the inflorescence which, however, received no attention by the weevil. In most cases, the specimens squatted in plain view on the upper leaf surface, parallel to the venation, but were not readily recognizable because of their elongate shape and the way they held their fore legs. Even more remarkable, they grazed in this position on the upper leaf parenchyma, with the rostrum folded underneath the prosternum and the mouthparts facing backward. While feeding, they slowly moved backward and left in their wake (in front) centimeter-long, translucent stripes on the leaf. Some specimens gnawed deep holes in the culm but oviposition did not occur within the next hour. I collected some of these plants and dissected them after approximately three weeks but found neither eggs nor larvae. Also, on the same plant occurred large numbers of *Limnobaris rufula* Champion, a baridine weevil here transferred to *Valdenus* Casey (**new combination**). Unlike *M. zacatensis*, this species was attracted by the young inflorescence as soon as it emerged from the covering leaf. A third baridine, *Lispodemus olyrae* Bondar, has been observed on *O. latifolia* in Bahia, Brazil (Bondar 1942). However, there is no standing record for any New World baridine attacking rice, the agriculturally most important bamboo.

Classification. *Macrobaris* was described originally in Lacordaire's section "Baridides" and then placed in the Baridini: Baridina by Hustache (1938). *Iops* Casey, here considered a subjective junior synonym of *Macrobaris*, was described in the Limnobaridini and is currently

accommodated in the Apostasimerini: Zygobaridina (Alonso-Zarazaga & Lyal 1999; Bouchard et al. 2011). The morphology-based phylogenetic study by Davis (2010) grouped *Macrobaris* [zacatensis] with other slender, grass-associated species, most of which are currently in the Apostasimerini: Madopterina and Nertini (Alonso-Zarazaga & Lyal 1999). *Coelonertus* Solari & Solari, with similar prosternal modifications as *Macrobaris* and possibly another unrecognized component of this complex, is the type genus of still another family-group name, Baridini: Coelonertina. Furthermore, *Torcobius* Casey, questionably distinct from *Coelonertus*, is classified in the Apostasimerini: Torcina (Alonso-Zarazaga & Lyal 1999; Bouchard et al. 2011). Here, I transfer *Macrobaris* to the Apostasimerini: Madopterina, which is the most senior of the above mentioned subtribes, and this placement is supported by the results of Davis (2010).

***Macrobaris spinigera* Prena, sp. n.**

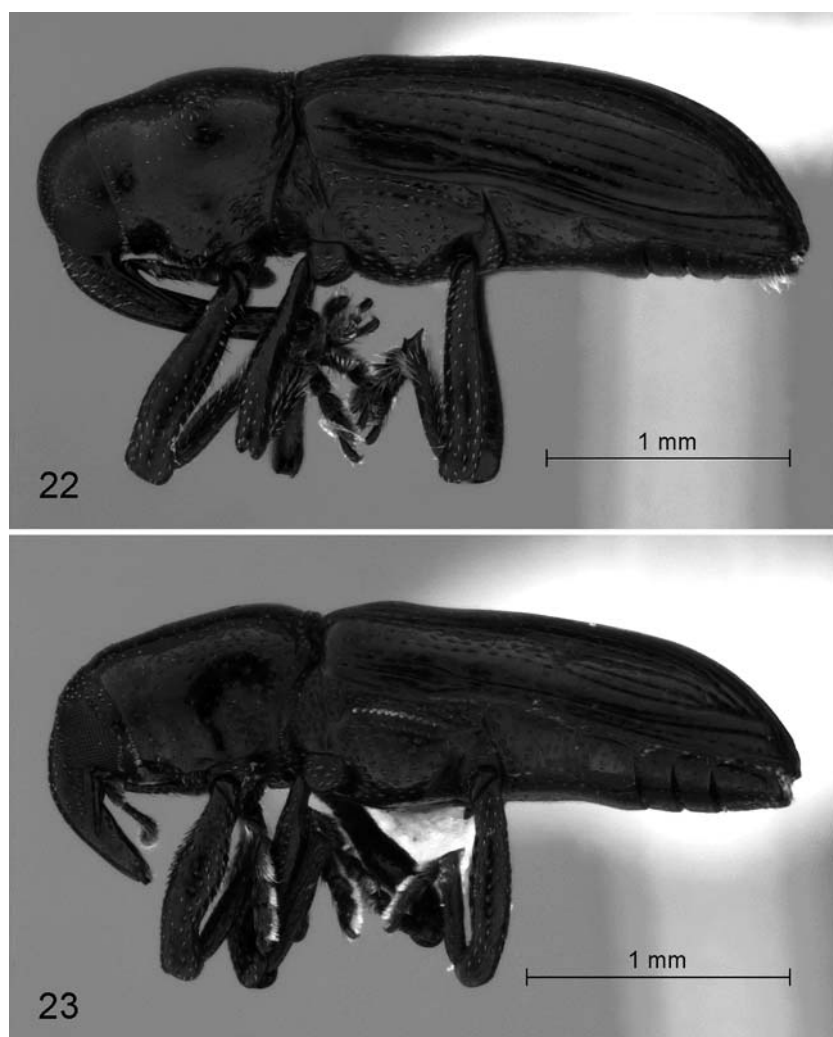
Figures 2, 26, 28

Diagnosis. *Macrobaris spinigera* can be recognized by having a trimerous tarsus and all femora dentate ventrally.

Description. Dorsal habitus as in Figure 2; integument black, antenna reddish brown, vestiture of white, squamiform setae absent, femora ventrally with hairs; rostrum reaching basal margin of prosternum in repose, antenna inserted near basal third of rostrum; pronotum approximately as long as wide, greatest width in basal third, dorsolateral tumidity moderate (nearly absent in smallest specimen) and with coarse asperities, dorsal punctures exceeding width of elytral striae, surface microreticulate; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; elytra $2.00\times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia barely protruding; femora ventrally with long, slender spine (Fig. 26); metatibia dorsodistally with short process, ventrodiscal spine slender lamelliform; tarsus with 3 tarsomeres, third subcordate, anterior margin very slightly notched (Fig. 28), fourth and fifth absent; total length (2.1–) 2.5–2.9 mm.

Distribution. The species is known from southern Brazil and Venezuela.

Plant associations. Unknown.



Figures 22–23. Lateral habitus of Costa Rican *Macrobaris* species with a particular short or long rostrum: **22.** *M. lateriquetra*; **23.** *M. zacatensis*.

Material examined. Holotype male, labeled "BRAZIL: S. Catarina/ Nova Teutonia/ 300–500 m/ 27°11' S 52°23' W", "–.xii.1971/ F. Plaumann", "HOLOTYPE/ *Macrobaris/ spinigera/* Prena" (MZSP). Paratypes 5: Brazil: Santa Catarina, Nova Teutonia, 300–500 m, XII/ 1971, F. Plaumann, 1 male (JPPC); XI/1974, F. Plaumann, 1 small female (JPPC); XI/1976, F. Plaumann, 1 female (CWOB). Venezuela: Bolivar, Guri, 5.–9.vii.1998, H. & A. Howden, 2 females (CMNC).

Etymology. The epithet is a Latin adjective derived from *spina* (= thorn) and *gero* (= to bear).

***Macrobaris unguiculus* Prena, sp. n.**

Figure 3

Diagnosis. *Macrobaris unguiculus* differs from all other species with ventrally dentate femora by the distally attenuate rostrum and the short but thick (and, therefore, conspicuous) fifth tarsomere, which is extremely thin in *M. leptochele* and *M. runa* and entirely reduced in *M. spinigera*.

Description. Dorsal habitus as in Figure 3; integument black, vestiture of white, squamiform setae absent; rostrum attenuated apically, reaching basal margin of prosternum in repose, antenna inserted slightly behind mid-length of rostrum; pronotum as long as wide, greatest width in basal third, dorsolateral tumidity moderate, dorsal punctures similar to those on elytral striae at base, surface faintly microreticulate; prosternum with channel simple, basal process with distinct mold for accommodation of rostrum in repose; pygidium transverse; sclerolepidia barely protruding; elytra $2.00 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pro- and mesofemur ventrally with long slender spine, meta-femur with short denticle; metatibia unmodified, ventrodistal spine moderate-sized and not noticeably flattened; tarsus with 5 tarsomeres, third subcordate, anteriorly excised by one third its length, fifth short but distinct, claws very small and fused; total length 2.5 mm.

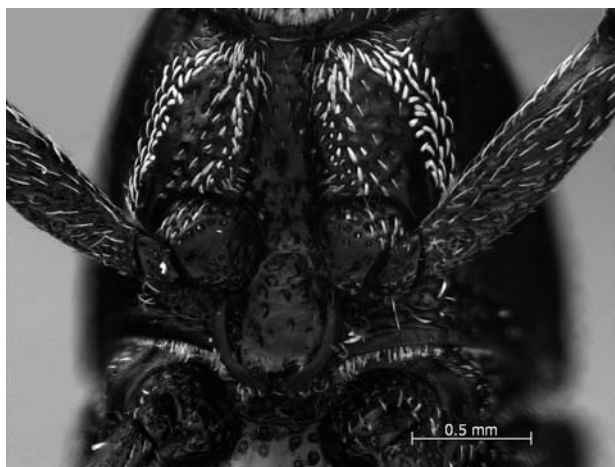


Figure 24. Prosternum of *Macrobaris colemycter* showing modified basal lobe with lateral carinae along channel which converge distally to an almost completely closed cup to receive the rostrum in repose.

Distribution. The species is known only from the holotype collected in Ecuador, Pichincha Province.

Plant associations. Unknown.

Material examined. Holotype male, labeled "ECUADOR, Pich./ Santo Domingo/ (47 km S)/ 29 July 1976/ Jeffrey Cohen", "Rio Palenque/ Rio Station/ 750' [229 m] elevation", "Collected/ in/ malaise trap", "Ecuador – Peace/ Corps – Smithsonian/ Institution Aquatic/ Insect Survey", "HOLOTYPE/ *Macrobaris/ unguiculus/* Prena" (USNM).

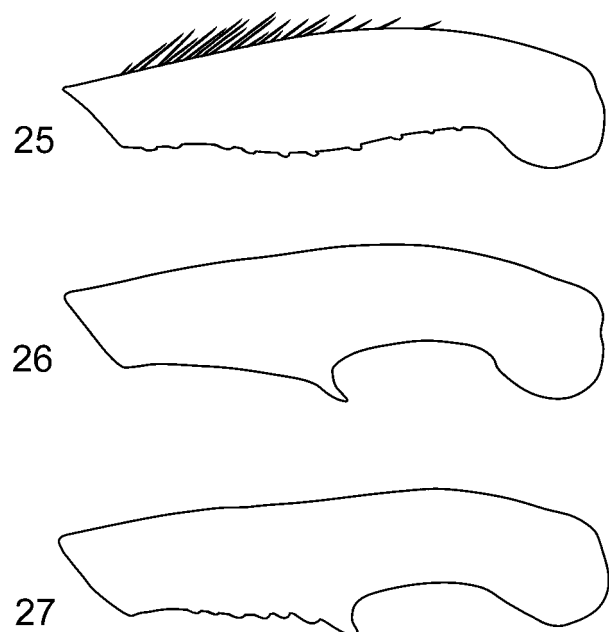
Etymology. The epithet is a Latin noun in apposition, diminutive of *unguis* (= claw).

***Macrobaris leptochele* Prena, sp. n.**

Figures 4, 27, 29

Diagnosis. *Macrobaris leptochele* is characterized by comparatively large size (5.2 mm), miniaturized fifth tarsomere, and ventrally dentate pro- and mesofemora. The other Peruvian species, *M. runa*, is smaller (2.8–3.0 mm) but morphologically very similar.

Description. Dorsal habitus as in Figure 4; integument black, vestiture of white, squamiform setae absent; rostrum reaching mesocoxa in repose, antenna inserted near basal third of rostrum; pronotum as long as wide, greatest width in basal third, dorsolateral tumidity inconspicuous and with coarse punctation, dorsal punctures generally subtle except on tumescent areas in basal third, surface faintly microreticulate; prosternum with channel simple, lateral walls very slightly elevated, basal process without channel or lateral wall; pygidium transverse; sclerolepidia moderately protruding; elytra $1.92 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; femora with ventral tooth and some adjacent denticles (Fig. 27); metatibia unmodified, ventrodistal



Figures 25–27. Profemur of *Macrobaris* species (not to scale): 25. *M. laciniosa*; 26. *M. spinigera*; 27. *M. leptochele*.

spine reduced; tarsus with 5 tarsomeres, third subcordate, anteriorly excised by one third its length, fifth very small but visible at 60 \times , not extended beyond anterior margin of third (Fig. 29); total length 5.2 mm.

Distribution. The species is known only from the holotype collected in the Huánuco Region, Peru.

Plant associations. Unknown.

Material examined. Holotype female, labeled “Varias-Aguytia/ Tingo María Peru/IX-6-7 44/EJ Hambleton”, “HOLOTYPE/*Macrobaris/ leptochele/ Prena*” (USNM).

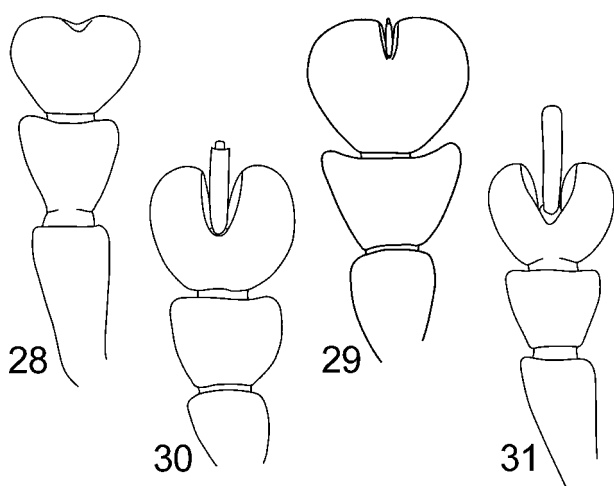
Etymology. The epithet is derived from the Ancient Greek λεπτός (= fine, small) and χηλή (= claw).

***Macrobaris runa* Prena, sp. n.**

Figure 5

Diagnosis. *Macrobaris runa* is one of three small species with ventrally dentate femora. The other two, *M. spinigera* and *M. unguiculus*, have sharply pointed teeth on all femora. Very similar to *M. runa* but much larger (5.2 mm) is *M. leptochele*, which is known only from a single female.

Description. Dorsal habitus as in Figure 5; integument black, antenna brown, vestiture of white, squamiform setae absent, femora ventrally with hairs; rostrum reaching basal margin of prosternum in repose, antenna inserted near basal third of rostrum; pronotum approximately as long as wide, greatest width in mid-third, dorsolateral tumidity moderate and with coarse asperities, dorsal punctures exceeding width of elytral striae, surface microreticulate; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; elytra 2.04 \times longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia barely protruding; pro- and mesofemur ventrally with long, slender spine, metafemur without



Figures 28–31. Protarsus of *Macrobaris* species (not to scale): 28. *M. spinigera*; 29. *M. leptochele*; 30. *M. colemycter*; 31. *M. sparsa*.

spine; metatibia dorsodistally with short process, ventrodiscal spine slender lamelliform; tarsus usually with 5 tarsomeres, third subcordate, anteriorly slightly notched, fourth and fifth extremely small or absent; total length 2.4–3.0 mm.

Distribution. The species is known from the Cusco Region in Peru and from Panama.

Plant associations. Unknown.

Material examined. Holotype male, labeled “PERU: Cuzco/Machu Picchu/ 13 Feb. 1979/W. E. Steiner”, “HOLOTYPE/*Macrobaris/ runa* Prena” (USNM). Paratypes 3: Panama: Coclé, La Mesa above El Valle de Anton, 850 m, 28.vii.1974, H. Hespeneide, 1 female (JPPC). Peru: Cusco, Machu Picchu, 2000–2400 m, 15.xii.1985, W. Wittmer, 1 male (CWOB); Cusco, La Convención, Pacaypata, 7858 ft. [2395 m], 7.–14.v.1998, P. Parrillo, f.i.t., 1 female (CMNC).

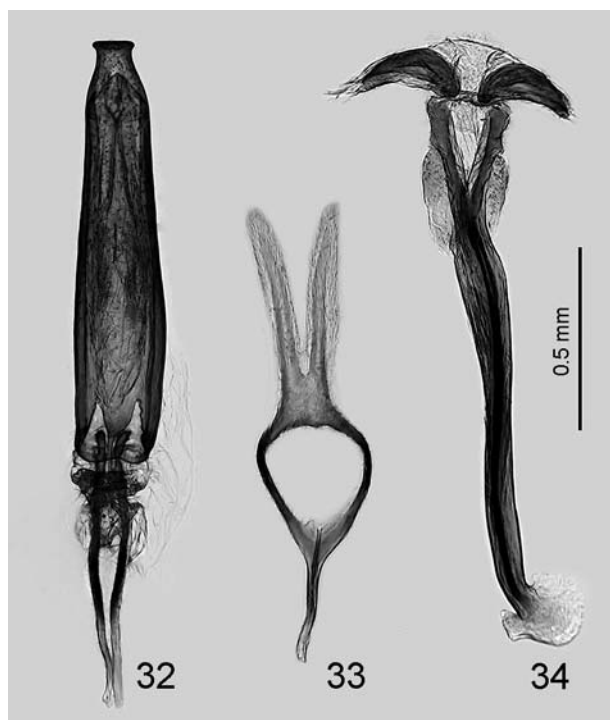
Etymology. The epithet is a noun in apposition adopted from the Quechua and refers to the indigenous Andean people.

***Macrobaris acutipennis* Prena, sp. n.**

Figure 6

Diagnosis. *Macrobaris acutipennis* is the only known Central American species with reduced third tarsomere and is one of three with an apically pointed elytron. The other two, *M. laciniosa* and *M. producta*, are more elongate and have a fully developed fifth tarsomere.

Description. Dorsal habitus as in Figure 6; integument black, antenna brown, vestiture of broad white, partially plumose setae along base of pronotum, on prosternum



Figures 32–34. Male terminalia of *M. sparsa*: 32. Aedeagus, dorsal view; 33. Tegmen; 34. Male sternites 8 and 9, ventral view.

and metepisternum, smaller setae on femur; rostrum reaching slightly beyond basal margin of prosternum in repose, antenna inserted near mid-length of rostrum; pronotum slightly wider than long, basally subparallel with greatest width near middle, dorsolateral tumidity slight and with coarser punctation than disk, dorsal punctures exceeding width of elytral striae, surface glabrous; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; pygidium transverse, sexually not dimorphic; sclerolepidia barely protruding; elytra $2.00 \times$ longer than wide, apex produced, base of interstria 6 neither notched nor narrowed; femora unarmed; metatibia dorsodistally with short process, ventrodistal spine spiniform, not noticeably modified; tarsus with 5 tarsomeres, third subcordate and anteriorly excised to middle, fifth very small but visible at $60 \times$; total length 2.6–2.8 mm.

Distribution. The species is known from Chiapas in southern Mexico.

Plant associations. Unknown.

Material examined. Holotype male, labeled “MEXICO: Chiapas/ 21 km N Ocozacoautla/23 Aug 1982/ Clark & Cave”, “HOLOTYPE/*Macrobaris/acuteipennis*/Prena” (CASC, currently in CWOB as long-term loan). Paratypes 2, same label data, 1 male (JPPC), 1 female (CWOB).

Etymology. The epithet is a Latin adjective composed of the past participle of *acu* (*acutus*, = pointed) and the commonly used adjectival derivation based on *penna* (= wing, feather).

***Macrobaris laciniosa* Prena, sp. n.**

Figure 7

Diagnosis. *Macrobaris laciniosa* can be recognized by the fringe of black setae on the profemur and the apically pointed elytron. *Macrobaris producta* is very similar but has fewer setae on the profemur, a very short rostrum, and a smooth, imperceptibly punctate pronotum.

Description. Dorsal habitus as in Figure 7; integument black, antenna reddish brown, vestiture of white, squamiform setae absent, profemur with dorsal fringe of black, thick setae; rostrum reaching basal margin of prosternum in repose, antenna inserted slightly basad of mid-length of rostrum; pronotum as long as wide, greatest width in basal third, dorsolateral tumidity moderate, dorsal punctures slightly exceeding width of elytral striae, surface faintly microreticulate; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; elytra $2.33 \times$ longer than wide, apex produced, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia barely protruding; femora subtly denticulate ventrally; metatibia with ventrodistal spine flat but not amalgamated with tibial apex; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by ca. half its length, claws medially fused; total length 2.8 mm.

Distribution. The species is known only from the holotype collected in the State of Jalisco, central Mexico.

Plant associations. Unknown.

Material examined. Holotype female, labeled “MEXICO, Jal. Hwy./ 80, 9 mi [14.5 km] SW Autlan/4300' [1310 m] 11 Aug. 1982 CW & L. O'Brien & G. Wibmer”, “HOLOTYPE/*Macrobaris/laciniosa*/Prena” (CASC, currently in CWOB as long-term loan).

Etymology. The epithet is a Latin adjective based on *lacinia* (= fringe).

***Macrobaris producta* Champion, 1909: 417**

Figure 8

Macrobaris producta. Champion (1909: 417), Hustache (1938: 43), O'Brien & Wibmer (1982: 191).

Diagnosis. *Macrobaris producta* has the elytron apically pointed like *M. laciniosa* and *M. acuteipennis*. It can be distinguished from the former by the rather inconspicuous setose fringe on the profemur and from the latter by the fully developed fifth tarsomere. Other good diagnostic characters are the smooth, very faintly punctate pronotum and the short rostrum.

Redescription. Dorsal habitus as in Figure 8; integument black, antenna brown; vestiture of white, squamiform setae absent, some plumose setae present along base of pronotum, profemur dorsally with some thick setae; rostrum not reaching beyond procoxae in repose, antenna inserted near mid-length of rostrum; pronotum longer than wide, sides almost straight to slightly rounded in basal two thirds, dorsolateral tumidity absent, dorsal punctation sparse and minute, surface glabrous; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; elytra $2.48 \times$ longer than wide, apex produced, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia peg-like; femora unarmed; metatibia with proximal apex lamelliform and fused with ventrodistal spine; tarsus with 5 tarsomeres, third bilobed, fifth extended beyond anterior margin of third by ca. half its length, claws medially fused at least in basal half; total length 3.3–3.9 mm.

Distribution. The species is known from Guatemala and central Mexico.

Plant associations. Unknown.

Material examined. Guatemala: Sacatepéquez, Dueñas, G. Champion, 1 male, holotype (BMNH). Mexico: Jalisco, Hwy 54, 11 mi [17.7 km] S Atenquique, 3600 ft. [1097 m], 9.viii.1982, C. W. & L. O'Brien, G. Wibmer, 1 male (CWOB).

***Macrobaris colemycter* Prena, sp. n.**

Figures 9, 24, 30

Diagnosis. *Macrobaris colemycter* is readily identifiable by its large size (> 6.0 mm), apically constricted

prothorax, and distally almost completely closed prosternal channel.

Description. Dorsal habitus as in Figure 9; integument black, antenna reddish brown; vestiture of white, squamiform setae on prosternum and, more inconspicuously, on femora and flanks of distal ventrites; eyes slightly bulging, frons flat, rostrum in repose reaching basal margin of prosternum, antenna inserted near mid-length of rostrum; pronotum as long as wide, greatest width near base, sides rounded, tumidities absent, anterior constriction distinct, dorsal punctures subtle, surface smooth; prosternum with channel simple before coxae, lateral walls not elevated, basal process modified to distally almost completely closed sheath accommodating rostrum in repose (Fig. 24); elytra $1.83 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium slightly transverse, convex-ovate in male, flat and semi-circular in female; sclerolepidia barely protruding; femora unarmed; metatibia with apex blunt and padded with microtrichiae, ventrodiscal spine short; tarsus with 5 tarsomeres, third large and bilobed, fifth extending beyond anterior margin of third by one quarter its length (Fig. 30), claws medially completely or almost completely fused; total length 6.2–6.6 mm.

Distribution. The species is known from Morelos in central Mexico.

Plant associations. Two specimens were collected from an unidentified bamboo.

Material examined. Holotype male, labeled “MEX Mor 1959/ Cuernavaca/ N Krauss vii”, “HOLOTYPE/ *Macrobaris/ colemycter/* Prena” (USNM). Paratypes 3: Mexico, Morelos, Cuernavaca, VII/1959, N. L. H. Krauss, 1 female (USNM); Morelos, Xochitepec, 23.vi.1973, G. Ekis, on bamboo, 1 male (JPPC), 1 female (CWOB).

Etymology. The epithet is derived from the Ancient Greek *κολέόν* (= sheath) and *μυκτήρ* (= nose).

***Macrobaris aquilonia* Prena, sp. n.**

Figure 10

Diagnosis. *Macrobaris aquilonia* is a small, non-descript species known only from southern Arizona, where no other similar species occurs. Except for the medially fused tarsal claws (needs at least $60 \times$ magnification) and brown color, it has no special modifications, such as a femoral tooth, apically pointed elytron, or squamiform setae.

Description. Dorsal habitus as in Figure 10; integument reddish brown to brown; vestiture of white, squamiform setae absent; rostrum reaching basal margin of prosternum in repose, antenna inserted near mid-length of rostrum; pronotum slightly longer than wide, greatest width in basal third, dorsolateral tumidity moderate and with rugose intervals and coarser punctation than on disk, dorsal punctures exceeding width of elytral striae, surface faintly microreticulate; prosternum with channel

simple, lateral walls not elevated, basal process without channel or lateral wall; elytra $2.00 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia barely protruding; femora unarmed; metatibia with distinct additional apical spine dorsad of apicoventral spine; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, claws medially fused at least in basal half; total length 2.0–2.8 mm.

Distribution. The species is known from southern Arizona, USA.

Plant associations. Several collectors swept specimens from unidentified grasses near Peña Blanca Lake, Sta. Cruz County.

Material examined. Holotype male, labeled “USA Arizona Santa Cruz Co./Sycamore Canyon, Hank and Yank Springs 4200/7–8.VIII.82 G. A. P. Gibson”, “HOLOTYPE/*Macrobaris/aquilonia*/Prena” (CMNC). Paratypes 81: USA, Arizona, Pima Co., Cerro Colorado Mts., 3000 ft. [914 m], 31.vii.1955, T. E. Moore, 1 female (USNM); Pima Co., Madera Canyon, Proctor Rd., 11.viii.1988, R. Morris, 3 males (JPPC); Pima Co., Madera Canyon, 7.viii.1961, G. H. Nelson & family, 1 male, 4 females (CWOB); Pima Co., Madera Canyon, 8.viii.2003, E. Riley, 3 males (TAMU); Pima Co., Madera Canyon, Sta. Rosa Mts., 5000 ft. [1524 m], 5.ix.1964, C. D. Johnson, 1 male (CWOB); Pima Co., Sta. Rita Mts., 8.viii.1957, C. W. O'Brien, 1 male (CWOB); Pima Co., Sta. Rita Mts., Madera Canyon, Bog Springs camp, 5000 ft. [1524 m], 5.viii.1982, G. A. P. Gibson, 1 male (CMNC); Sta. Cruz Co., Coronado N. For., Walker Canyon, 11.viii.1989, D. Pollock, 1 female (CWOB); Sta. Cruz, Nogales, 17.viii.1906 (1, not sexed), 4.ix.1906 (2, not sexed) (MCZ); Sta. Cruz Co., 3.3 mi [5.3 km] SW Patagonia, 29.viii.1997, R. Turnbow, 1 female (CWOB); Sta. Cruz Co., 5 km W Peña Blanca Lake, 12.viii.2008, J. Prena, 2 males (JPPC); Sta. Cruz Co., Sycamore Canyon, 24.viii.1968, 2 males, 5 females (FSCA); ditto, 15.viii.1970, K. Stephan, 1 male (FSCA); ditto, 7.–8.viii.1982, G. A. P. Gibson, 2 males, 3 females (CMNC), 1 pair each in BMNH, MNHN, MNHUB, NHRS; ditto, R. S. Anderson, 4 males, 9 females (CMNC); ditto, 12.viii.1983, R. S. Anderson, 2 males, 2 females (CMNC); Sta. Cruz Co., White Rock Camp, Peña Blanca Lake, 20.ix.1965, C. W. & L. O'Brien, 6 females (CWOB); Sta. Cruz Co., 1 mi [1.6 km] S Peña Blanca Lake, 6.viii.1982, G. A. P. Gibson, 3 males, 9 females (CMNC); ditto, 2 specimens (JPPC 2); ditto, R. S. Anderson, 1 female (CMNC).

Etymology. The epithet is a Latin adjective meaning northern.

***Macrobaris inaequalis* (Casey), comb. n.**

Figure 11

Iops inaequalis Casey, 1922: 318. Hustache (1938: 128), Wibmer & O'Brien (1986: 317).

Diagnosis. *Macrobaris inaequalis* is reddish brown and differs from the black *M. micronyx* and *M. rufitarsis*, the only other known species with a single tarsal claw, in the subconical shape of the pronotum and the large protibial spine. *Macrobaris sparsa*, with the same type locality, has an almost identical habitus but is black and has two claws and a different prosternal channel.

Redescription. Dorsal habitus as in Figure 11; integument reddish brown, vestiture of white, squamiform

setae largely absent except for inconspicuous setae on metepisternum; [head missing]; pronotum nearly as long as wide, subconical, greatest width near base, dorsolateral or basal tumidities absent, dorsal punctation sparse and minute, surface glabrous; prosternum with channel simple, lateral walls not elevated, basal process with shallow mold for accommodation of rostrum in repose; elytra $1.91 \times$ longer than wide, apices conjointly rounded, base of interstria 6 narrowed; pygidium transverse; sclerolepidia moderately protruding; femora unarmed; metatibia with inconspicuous dorsodistal projection, ventrodistal tooth lamelliform, elongate rectangular; tarsus with 5 tarsomeres, third bilobed, fifth extended beyond anterior margin of third by half its length, 1 spiniform claw; total length without head 2.9 mm.

Distribution. The species is known only from the holotype collected in the State of Mato Grosso, Brazil.

Plant associations. Unknown.

Material examined. Brazil: Mato Grosso, Chapada, March, H. H. Smith, 1 female [?], holotype (USNM).

Macrobaris rufitarsis (Hustache), comb. n.

Figure 12

Jops [sic] *rufitarsis* Hustache, 1950: 62.

Iops rufitarsis. Wibmer & O'Brien (1986: 317).

Diagnosis. *Macrobaris rufitarsis* is a black species with a single tarsal claw. It is larger than *M. micronyx* but morphologically not clearly different.

Redescription. Dorsal habitus as in Figure 12; integument black, antenna reddish brown, vestiture of white, squamiform setae absent, some dingy white setae at basolateral margin of pronotum; rostrum in repose nearly reaching basal margin of prosternum, antenna inserted near basal third of rostrum; pronotum longer than wide, sides subparallel in basal half, greatest width near base, dorsolateral and basal tumidities absent, dorsal punctation not exceeding width of elytral striae, surface microreticulate; prosternum with channel simple, lateral walls not elevated, basal process with distinct lateral carinae extending channel to base of prosternum; elytra $1.91 \times$ longer than wide, apices conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia moderately protruding; femora unarmed; metatibia with elongate, flat ventrodistal spine; tarsus with 5 tarsomeres, third bilobed, fifth extended beyond anterior margin of third by half its length, 1 spiniform claw; total length 4.4 mm.

Distribution. The species is known from southern Brazil.

Plant associations. Unknown.

Material examined. Brazil: Rio de Janeiro, F. Sahlberg, 1 female, syntype (MNHN); [1 syntype in NHRS, not examined].

Macrobaris micronyx (Hustache), comb. n.

Figure 13

Jops [sic] *micronyx* Hustache, 1950: 61.

Iops micronyx. Wibmer & O'Brien (1986: 317).

Diagnosis. *Macrobaris micronyx* is one of three species with a single tarsal claw. The only known specimen of *M. inaequalis* is reddish brown and incomplete. *Macrobaris rufitarsis* is larger than *M. micronyx* but morphologically not clearly different.

Redescription. Dorsal habitus as in Figure 13; integument black, antenna reddish brown, vestiture of white, squamiform setae absent; rostrum reaching slightly beyond procoxae in repose, antenna inserted near basal third of rostrum; pronotum longer than wide, sides gradually diverging from base to greatest width before middle, dorsolateral and basal tumidities absent, dorsal punctation slightly exceeding width of elytral striae, surface microreticulate; prosternum with channel simple, lateral walls not elevated, basal process with distinct lateral carinae extending channel to base of prosternum; elytra $1.95 \times$ longer than wide, apices conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia slightly protruding; femora unarmed; metatibial structures not examined [legs lost or covered in glue]; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, 1 spiniform claw; total length 2.8–3.2 mm.

Distribution. The species is known from southern Brazil, Paraguay, and the northeastern tip of Argentina that is engulfed by borders of these countries.

Plant associations. Unknown.

Material examined. Argentina: Misiones, Eldorado, 2.xi.1964, A. Kovacs, 1 female (AMNH). Brazil: Santa Catarina, Nova Teutonia, X–XI/1974, F. Plaumann, 2 females (CMNC, JPPC). Paraguay: Itapúa Department [historically part of Alto Paraná, which is given on the label], Hohenau, H. Jacob, 1 male, 1 not sexed, syntypes (MNHN).

Macrobaris lateriquetra Prena, sp. n.

Figures 1, 22

Diagnosis. *Macrobaris lateriquetra* can be recognized by the angular lateral projection on the pronotum.

Description. Dorsal habitus as in Figure 1; integument black (small specimens partially reddish brown), vestiture of white, squamiform setae absent, elongate setae present on prosternum and legs; rostrum reaching mesocoxa in repose (Fig. 22), antenna inserted slightly basad of mid-length of rostrum; pronotum wider than long, sides angularly produced, punctation fine and not exceeding width of elytral interstriae, apex of lateral angles rugose, surface faintly microreticulate; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; elytra $2.13 \times$ longer than wide, apices simple and conjointly rounded,

base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia barely protruding; femora unarmed; metatibia terminating in small (often abraded) denticle, ventrodistal tooth not noticeably lamelliform; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, claws basally subconnate; total length 2.1–3.5 mm.

Distribution. The species has been found in Costa Rica and western Panama at 2300–3400 m elevation.

Plant associations. Numerous specimens were collected from *Chusquea* Kunth in the Cerro de la Muerte area in June 1974 and late August 1998. Paul Hanson (in 1999) and I (in 2004) collected specimens from an unidentified bamboo.

Material examined. Holotype male, labeled “Cerro Cuerici. 8 km al NE Villa/Mills. Prov. San José. COSTA/RICA. 3345 m. 19 SET 1995. A./Picado. Paramo./L_S_392300_503200 #6305”, “HOLOTYPE/ *Macrobaris/latariquetra*/Prena”, INBIO CRI002 568430 (INBC). Paratypes 80: Costa Rica: Cartago Prov., 4 km NE Cañon, Genesis II, 2350 m, 27.viii.1998, C. W. & L. O’Brien, 1 female (CWOB); Limón Prov., P. Int. La Amistad, Valle del Silencio, 2500 m, 27.ix.2003, R. González, INB0003755744, 1 male (INBC); San José Prov., R. F. Los Santos, 1.5 km S La Georgina, 3100 m, 3.iv.2003, C. Godoy, INB0003705971–73, 1 male, 2 females (INBC); San José Prov., 29 mi [46.7 km] N San Isidro del General, 11000 ft. [3353 m], on *Chusquea subtesselata*; 23.vi.1974, C. W. & L. O’Brien, B. Marshall, 2 males, 4 females (CWOB); San José Prov., near summit of Cerro de la Muerte, 3400 m, 22.iv.2003, S. M. Clark & E. G. Riley, 5 males, 5 females (CWOB), 18 males, 6 females (TAMU); San José Prov., Microwave Tower Rd. km 90, Cerro de la Muerte, beating *Chusquea* sp., 29.viii.1998, C. W. & L. O’Brien, N. Franz, 7 males, 4 females (CWOB), 2 pairs each in BMNH, MNHN, USNM; San José Prov., Est. Biol. Cerro de la Muerte, 3000 m, bamboo, 21.ii.1999, P. Hanson, 1 male, 3 females (CWOB); Mirador de Quetzales, Fca. Eddy Serrano, hwy km 70, 2600 m, 13.v.2004, J. Prena, 2 males, 1 female (JPPC). Panama: Chiriquí Prov., Cerro Punta, 6200 ft. [1890 m], 8.vii.1974, C. W. & L. O’Brien, B. Marshall, 5 males (CWOB); Chiriquí Prov., 2–3 km E Cerro Punta, 2000–2200 m, 1.vi.1977, H. & A. Howden, 1 female (CMNC).

Etymology. The epithet is a Latin adjective composed of *latus* (= side) and *quetrus* (= angled; an adjectival derivation of *quattuor*).

***Macrobaris exerens* Prena, sp. n.**

Figure 15

Diagnosis. *Macrobaris exerens* is a small species with medially humped pronotal base and conspicuous vestiture (Fig. 15). The east Andean *M. stictica* is very similar but lacks the hump and has a glabrous pronotum.

Description. Dorsal habitus as in Figure 15; integument black, antenna reddish brown, vestiture of variously broad, white to light yellow setae present along frontal and basal margins of pronotum, on femora, metepisternum, pro- and metasternum, and in up to 6 small clusters on even-numbered elytral interstriae (Fig. 15); rostrum not or barely reaching beyond procoxae in repose, antenna inserted slightly basad of mid-length of rostrum; pronotum longer than wide, greatest width in

mid-third, laterally rounded, conspicuously raised in front of scutellum, punctation fine and generally not exceeding width of elytral interstriae, surface microreticulate; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; elytra $2.28 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia peg-like; femora unarmed; metatibia with inconspicuous dorsodistal projection, ventrodistal tooth short lamelliform; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, claws basally subconnate; total length 2.3–2.4 mm.

Distribution. The species is known from northern Venezuela.

Plant associations. Unknown.

Material examined. Holotype male, labeled “VENEZUELA (Merida) Est./La Montaña (Teleferico)/ at Merida, 2440 m, 30.iv/ 1988, I. S. Askevold”, “HOLOTYPE/ *Macrobaris/exerens* Prena” (CWOB). Paratypes 2: same label as holotype, 1 male (JPPC), 1 female (CWOB).

Etymology. The epithet is a Latin present participle based on *exero* (= to stretch forth).

***Macrobaris stictica* Prena, sp. n.**

Figure 16

Diagnosis. *Macrobaris stictica* is one of very few species with conspicuous vestiture. The only similar species is *M. exerens*, which has a glabrous, evenly convex pronotum.

Description. Dorsal habitus as in Figure 16; integument black, antenna reddish brown, vestiture of white, squamiform setae present on femora, metepisternum, and in 5–6 small clusters on even-numbered elytral interstriae (Fig. 16); rostrum reaching basal margin of prosternum in repose, antenna inserted approximately at mid-length of rostrum; pronotum longer than wide, greatest width near middle, Ecuadorian specimens [males] laterally and dorsally evenly rounded, punctation subtle, surface faintly microreticulate, Peruvian specimen [female] with densely punctate basal hump; prosternum with channel simple, lateral walls not elevated, basal process with shallow mold for accommodation of rostrum in repose; elytra $2.27 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia barely protruding; femora unarmed; metatibia with ventrodistal tooth short lamelliform; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, claws basally subconnate; total length 2.9–3.2 mm.

Distribution. The species is known from the eastern slope of the Andes in Ecuador and Peru.

Plant associations. One specimen was taken from an unidentified bamboo in Ecuador.

Material examined. Holotype male, labeled "ECUADOR, 12 km./NW. Baeza, April/29, 1978 CW & LB/O'Brien & Marshall", "on/bamboo", "HOLOTYPE/ *Macrobaris/ stictica* Prena" (CWOB). Paratypes 2: Ecuador: Napo, 7 km S Baeza, 21.ii.1979, H. & A. Howden, 1 male (CMNC). Peru: Cusco, Pillahuata, Manu road km 128, 26.ix.1982, L. Watrous & G. Mazurek, 1 female (CMNC).

Etymology. The epithet is a Latinized adjective derived from the Greek *στικτός* (= spotted, tattooed).

Macrobaris sparsa complex

Figures 17, 31–34

Iops sparsa Casey, 1922: 318. Hustache (1938: 128).

Iops sparsus. Wibmer & O'Brien (1986: 317), Alonso-Zarazaga & Lyal (1999: 99).

Macrobaris sparsa, **new combination**

Jops [sic] *latitarsis* Hustache, 1950: 62.

Iops latitarsis. Wibmer & O'Brien (1986: 317).

Macrobaris latitarsis, **new combination**

Diagnosis. The Brazilian type specimen of *M. sparsa* has conspicuous lateral carinae flanking the prosternal channel anteriorly and posteriorly of the procoxae. In addition, the inner face of the procoxa is excised so that the channel has a continuous lateral wall composed of three elements. Other specimens from Bolivia (including the type of *M. latitarsis*), Brazil, Costa Rica, Venezuela, and possibly Guatemala [locality uncertain] have the same modifications, but there are slight differences in the sexual dimorphism of the protibial spine, the basal notch of the sixth interstria, the punctuation on the pronotum, and vestiture. Moreover, the aedeagi of *M. sparsa* (Fig. 32), *M. latitarsis*, and the Costa Rican specimens differ significantly. Because of insufficient material, *M. sparsa* and *M. latitarsis* are treated here provisionally as a morphologically unresolved complex even though they are distinct species.

Description. Dorsal habitus as in Figure 17; integument black, antenna reddish brown, vestiture of white, squamiform setae present on meta- and metepisternum and on lateral margins of ventrites 3–5, ventrite 5 with tuft of mostly bifid setae; rostrum reaching basal margin of prosternum in repose, antenna inserted near mid-length of rostrum; pronotum longer than wide, subconical, greatest width at base, punctuation subtle to moderate, not exceeding width of elytral interstriae, surface smooth; prosternum with channel flanked by conspicuously elevated lateral walls, basal process with distinct lateral carinae extending channel to base of prosternum; elytra 1.89 × longer than wide, apices simple and conjointly rounded, base of interstria 6 either notched or narrowed; pygidium undeveloped, ventrite 5 with apical depression and plumose setae; sclerolepidia barely protruding; femora unarmed; metatibia with short, square ventrodistal spine; tarsus (Fig. 31) with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, claws basally subconnate; total length 3.7–5.6 mm.

Distribution. *Macrobaris sparsa* is known from Brazil and Venezuela, and *M. latitarsis* from Bolivia (erro-

neously stated in the description as Argentina). An undescribed species of the same complex occurs in Costa Rica. An unassigned female specimen with imprecise locality data might be from Guatemala.

Plant associations. Unknown.

Material examined. Bolivia: La Paz Department, Caranavi, P. Denier, holotype of *M. latitarsis*, 1 female (MNHN); La Paz Department, Isiamas [= Ixiamas], XII/1921, W. M. Mann, Mulford Biological Expedition, 1 male, 1 female (USNM); without locality, 3.iv.1903, W. Schnuse, 1 male (SNSD). Brazil: Bahia, Nova Valencia [= Valença], #53821, 1 female (MNHUB); Mato Grosso, Chapada, November, H. H. Smith, holotype of *I. sparsus*, 1 male (USNM); Mato Grosso, Sinop, 12°31' S, 55°37' W, X/1975, M. Alvarenga, 2 females (CWOB, JPPC); São Paulo, Cantareira, 13.ii.1962, J. Halik, 1 male (USNM); Petropolis, Itamaraty, Ohaus, 1 male (SNSD). Costa Rica: Guanacaste Prov., 12 km SE La Cruz, Cerro El Hacha, 300 m, Malaise trap, 1988, 3 males (INBC). Guatemala [?]: Finca Panamá [in Suchitepéquez?], 14.vi.1945, E. J. Hambleton, 1 female (USNM). Venezuela: Bolivar, Guri, 14.vi.1996, H. & A. Howden, 1 female (CMNC), ditto, 5.vii.1998, 1 female (CMNC).

Macrobaris cribricollis (Hustache), **comb. n.**

Figure 18

Jops [sic] *cribricollis* Hustache, 1950: 63.

Iops cribricollis. Wibmer & O'Brien (1986: 317).

Diagnosis. *Macrobaris cribricollis* has the anterior portion of the prosternal channel flanked by an elevated carina (as in the *M. sparsa* complex) but the postcoxal portion is unmodified. Other useful characters are the relatively coarse punctuation on the pronotum and the white setal patches on interstriae 3 and 5. *Macrobaris balicosa* has a similar size and habitus but numerous setal patches on almost all interstriae.

Redescription. Dorsal habitus as in Figure 18; integument black, antenna reddish brown, vestiture of white, squamiform setae present on base of rostrum, basolateral and anterior margins of pronotum, pro-, met- and metepisternum, pro- and mesocoxa, and base of elytral interstriae 3 and 5 (Fig. 18); rostrum reaching basal margin of prosternum in repose, antenna inserted approximately at mid-length of rostrum; pronotum longer than wide, subconical, greatest width at base, punctuation slightly exceeding width of elytral interstriae, surface faintly microreticulate; prosternum with antecoxal portion of channel flanked by carina, basal process apparently with shallow mold for accommodation of rostrum in repose [not clearly visible in available specimen]; elytra 1.85 × longer than wide, apices simple and conjointly rounded, base of interstria 6 notched; ventrite 5 with deep pit, pygidium transverse; sclerolepidia barely protruding; femora unarmed; metatibia ventrodistally excised, with spine amalgamated into short, square flange; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, claws basally subconnate; total length 4.8 mm.

Distribution. The species is known only from Bolivia. The Argentinean record (Hustache 1950, Wibmer &

O'Brien 1986, Alonso-Zarazaga & Lyal 1999) applies to Caranavi in Bolivia.

Plant associations. Unknown.

Material examined. Bolivia: La Paz Department, Caranavi, P. Denier, 1 female, holotype (MNHN).

***Macrobaris balicosa* Prena, sp. n.**

Figure 19

Diagnosis. *Macrobaris balicosa* is a large, stout species with an undeveloped pygidium and can be recognized by its conspicuous vestiture (Fig. 19).

Description. Dorsal habitus as in Figure 19; integument black, antenna reddish, sparse vestiture of white, squamiform setae present on rostral base, pronotum (anterior two thirds of disk and along base), pro-, meta- and metepisternum, distal ventrites, and femora, and in numerous small clusters on elytral interstriae (Fig. 19); rostrum reaching basal margin of prosternum in repose, antenna inserted at mid-length of rostrum; pronotum longer than wide, subconical, slightly tumescent basomedially, punctation moderate and not exceeding width of elytral striae, surface faintly microreticulate; prosternum with antecoxal portion of channel flanked by slight carina, basal process with lateral carinae extending channel to base of prosternum; elytra $1.73 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 notched; pygidium undeveloped; sclerolepidia peg-like; femora unarmed; metatibia with ventrodistal spine modified to square, lamelliform process; tarsus with 5 tarsomeres, third bilobed, fifth extended beyond anterior margin of third by half its length, claws basally subconnate; total length 3.3–4.8 mm.

Distribution. The species is known from Guyana, Suriname, and Venezuela.

Plant associations. Unknown.

Material examined. Holotype male, labeled "VENEZUELA: Bolivar/ Puente Cocuizas, 70 km/W Ciudad Bolivar, 19./VI.-3.VIII.1987, S. & J./Peck, f.i.t., for. ravine/in woodland. 87–36", "HOLOTYPE/ *Macrobaris/ balicosa* Prena" (CMNC). Paratypes 3: Guyana: Region 8, Iwokrama Forest, 26 km SW Kurupukari, 100 m, 22.–25.v.2001, R. Brooks & Z. Falin, f.i.t., 1 female (CMNC). Suriname: Brokopondo District, Brownsberg Natuurpark, Mazaroni Plateau, 400–500 m, 20.viii.1982, W. E. Steiner, Earthwatch Suriname Expedition August 1982, 1 female (USNM). Venezuela: Bolivar, 5 km N San Ignacio de Yurani, 7.vii.1987, R. S. Miller, 1 female (CWOB).

Etymology. The epithet is a Latinized adjective derived from the Ancient Greek βαλιός (= spotted, dappled).

***Macrobaris zacatensis* Prena, sp. n.**

Figures 20, 23

Macrobaris sp. (Davis 2009, 2010; identified by D. R. Whitehead).

Diagnosis. *Macrobaris zacatensis* can be recognized by the fringe of dark cupreous setae on the profemur. *Macrobaris laciniosa* and *M. producta* have a similar fringe but the elytron is apically pointed (vs. simply rounded in *M. zacatensis*).

Description. Dorsal habitus as in Figure 20; integument black, antenna dark brown, vestiture of white, squamiform setae absent, profemur particularly dorsomedially with thick, cupreous setae; rostrum not reaching beyond procoxae in repose (Fig. 23), antenna inserted near mid-length of rostrum; pronotum longer than wide, greatest width in basal third, laterally rounded, dorsolateral or basal tumidities absent, punctation smaller than width of elytral interstriae, surface very faintly microreticulate; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; elytra $2.27 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia peg-like; femora unarmed; metatibia with ventrodistal tooth spiniform to slightly lamelliform; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, claws basally subconnate; total length 2.5–3.5 mm.

Distribution. The species is known from the Pacific side of Costa Rica.

Plant associations. I observed large numbers of *M. zacatensis* on *Olyra latifolia* L. in Santa Rosa National Park in middle June 2011. Charlie and Lois O'Brien collected specimens from an unidentified, 1 m tall grass near Monteverde (label data).

Material examined. Holotype male, labeled "COSTA RICA: Guan./ Santa Rosa N.P., near/headquarters, 300 m/10.8364 N 85.6155 W/ 13–19.vi.2011, leg. Prena", "HOLOTYPE/*Macrobaris/zacatensis*/ Prena" (INBC). Paratypes 87: Costa Rica: Guanacaste, ACG, Est. Santa Rosa, 300 m, VIII/1990, CRI000 180133, 1 female (INBC); ditto, 23.vii.–2.viii.1980, D. R. Whitehead, 4 males, 2 females (USNM); ditto, 13.–19.vi.2011, J. Prena, 10 males, 9 females (JPPC), 3 pairs each in AMNH, BMNH, CMNC, INBC, MNHN, MNHUB, MZSP, NHRS; Guanacaste, Cerro El Hacha, 300 m, 12 km SE La Cruz, Malaise trap, 1988, CRI000 048393, CRI000 048693, CRI000 049119, CRI000 049384, 2 males, 2 females (INBC); Puntarenas, Bosque Eterno de los Niños, 12.xi.1998, C. W. & L. B. O'Brien, 4 males, 5 females (CWOB).

Etymology. The epithet is a Latinized adjective based on the Spanish noun "zacate" (= grass or fodder; originally "zacatl" in Aztec).

***Macrobaris iotomioidea* (Hustache), comb. n.**

Figure 21

Jops [sic] *iotomioidea* Hustache, 1950: 60.

Iops iotomioideus. Wibmer & O'Brien (1986: 317).

Diagnosis. *Macrobaris iotomioidea* is an almost glabrous species with basally subconnate claws. It can be distinguished from small specimens of the *M. sparsa* complex by the simple, distally unmodified prosternal channel.

Description. Dorsal habitus as in Figure 21; integument black, antenna brown, vestiture of white, squamiform setae absent, base of pronotum with fine setae; rostrum reaching mesocoxae in repose, antenna inserted basad of mid-length of rostrum; pronotum as long as wide, greatest width at base, sides evenly converging and then roundly narrowed in apical half, dorsolateral or basal tumidities absent, punctation distinct but smaller than width of elytral interstriae, surface very faintly microreticulate; prosternum with channel simple, lateral walls not elevated, basal process without channel or lateral wall; elytra $1.72 \times$ longer than wide, apices simple and conjointly rounded, base of interstria 6 neither notched nor narrowed; pygidium transverse; sclerolepidia barely

protruding; femora unarmed; metatibia with ventrodistal tooth square lamelliform; tarsus with 5 tarsomeres, third bilobed, fifth extending beyond anterior margin of third by half its length, claws basally subconnate; total length 3.4 mm.

Distribution. The species is known only from Bolivia. The Argentinean record (Hustache 1950, Wibmer & O'Brien 1986, Alonso-Zarazaga & Lyal 1999) applies to Caranavi in Bolivia.

Plant associations. Unknown.

Material examined. Bolivia: La Paz Department, Caranavi, P. Denier, male, holotype (MNHN).

Key to known *Macrobaris* species

- 1 Tarsal claws modified, either 1 claw lost or claws medially fused at least in basal half, or tarsomere 5 miniaturized or absent; species often with ventrally dentate femur or distally produced elytron; integument usually without white, squamiform setae 2
- Tarsal claws basally subconnate but not fused; species always with ventrally edentate femur and distally simple elytron; integument often with white, squamiform setae 13
- 2 (1) At least pro- and mesofemora ventrally toothed; tarsus with tarsomere 5 minute or lost; tarsomere 3 subcordate, with anterior margin only slightly excised (Figs 28, 29) 3
- All femora edentate; tarsus with tarsomere 5 well developed; tarsomere 3 bilobed and deeply excised (Figs 30, 31) 6
- 3 (2) All femora ventrally with slender tooth of subequal size; tarsus with 3 tarsomeres; Brazil, Venezuela *M. spinigera* sp. n.
- Metafemoral tooth reduced, smaller than on profemur or absent; tarsomere 5 normally present but very small; Ecuador and Peru 4
- 4 (3) Tarsomere 5 small but distinct, much thicker than tarsal setae; rostrum attenuate in apical third; eyes flush with head contour *M. unguiculus* sp. n.
- Tarsomere 5 minuscule, barely thicker than tarsal setae (as Fig. 29); rostrum not attenuate in apical third; eyes slightly bulging 5
- 5 (4) Large species (5.2 mm); profemur ventrally with tooth and numerous denticles (Fig. 27); metafemur with small but distinct tooth *M. leptochele* sp. n.
- Smaller species (2.8–3.0 mm); profemur ventrally with tooth but without denticles; metafemur edentate *M. runa* sp. n.
- 6 (2) Elytral apices acuminate 7
- Elytral apices evenly curved and conjointly rounded 9
- 7 (6) Fifth tarsomere minuscule or absent; pronotal base, prosternum, and metepisternum with conspicuous white setae; profemur dorsally without thick setae; body stouter (Fig. 6) *M. acutipennis* sp. n.
- Fifth tarsomere protruding beyond anterior margin of third by half its length (as Fig. 31); prothorax and metepisternum without conspicuous, white setae; profemur dorsally with thick, black setae; body more elongate (Figs 7, 8) 8
- 8 (7) Rostrum as long as profemur; profemur with conspicuous dorsal fringe of thick black setae, ventrally subtly denticulate (Fig. 25); pronotum with dorsolateral tumidity in basal third; pronotal punctation distinct; eyes slightly bulging *M. laciniosa* sp. n.
- Rostrum much shorter than profemur; profemur dorsally with few thick setae, ventrally not denticulate; pronotum without dorsolateral tumidity; pronotal punctation sparse and microscopic; eyes flush with head contour *M. producta* Champion
- 9 (6) Tarsal claws at least partially fused, lamelliform; North America 10
- Tarsal claw single, spiniform, occasionally with minute second claw; South America 11
- 10 (9) Prosternum with basal lobe modified to distally almost completely closed cup fitting rostrum in repose (Fig. 24); large species (>6 mm); central Mexico *M. colemycter* sp. n.
- Prosternum with basal lobe not modified to incomplete, distally open cup fitting rostrum in repose; small species (<3 mm); Arizona *M. aquilonia* sp. n.
- 11 (9) Integument reddish brown; protibia with ventrodistal spine as long as tibial width and obliquely angled; pronotum conical, base not distinctly constricted *M. inaequalis* (Casey)
- Integument black; protibia with ventrodistal spine shorter than tibial width and perpendicular to long axis; pronotum basally constricted 12
- 12 (11) Total body length 4.2 mm; Brazil *M. rufitarsis* (Hustache)
- Total body length 2.8–3.2 mm; Argentina, Brazil, Paraguay *M. micronyx* (Hustache)
- 13 (1) Prothorax laterally angular (Fig. 1); Costa Rica and Panama *M. lateriquetra* sp. n.
- Prothorax laterally round, at most with subtle tumidity 14
- 14 (13) Metepisternum with white, squamiform setae; elytral interstria 6 often modified at base, either deeply notched or striae 5 and 6 confluent 15

- Metepisternum glabrous; elytral interstria 6 basally unmodified 19
- 15 (13)** Pronotum subovate, greatest width near middle; elytron with anterior margin unmodified at interstria 6, even-numbered interstriae with clusters of white squamiform setae 16
- Pronotum subconical, greatest width near base; elytron with anterior margin notched at interstria 6 or with striae 5 and 6 converging, white squamiform setae not confined to even-numbered interstriae if present 17
- 16 (15)** Pronotum tumescent at base and with white setae; Venezuela *M. exerens* sp. n.
- Pronotum evenly convex at base and without white setae; Ecuador, Peru *M. stictica* sp. n.
- 17 (15)** Elytral interstriae glabrous, basally without white, squamiform setae; ventrite 5 with tuft of bifid setae; Central and South America *M. sparsa* (Casey) complex
- At least elytral interstria 3 basally with white, squamiform setae; ventrite 5 with few simple setae; South America 18
- 18 (17)** Elytron with white, squamiform setae only at base of intervals 3 and 5 (Fig. 18); pygidium distinct; pronotum coarsely punctate; Bolivia *M. cribricollis* (Hustache)
- Elytron with numerous clusters of white, squamiform setae (Fig. 19); pygidium undeveloped; pronotum moderately punctate; Guyana, Suriname, Venezuela *M. balicosa* sp. n.
- 19 (14)** Rostrum short, reaching procoxa in repose; pronotum subovate; profemur dorsally with erect setae; body very slender (Fig. 20); Costa Rica *M. zacatensis* sp. n.
- Rostrum long, reaching mesocoxa in repose; pronotum subconical; profemur dorsally without erect setae; body wider (Fig. 21); Bolivia *M. iotomioidea* (Hustache)

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