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Redescription and new species of *Alexidia* (Coleoptera: Staphylinidae: Scaphidiinae)

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Redescription and new species of *Alexidia* (Coleoptera: Staphylinidae: Scaphidiinae). - The Neotropical genus *Alexidia* Reitter and its type species *A. rogenhoferi* Reitter are redescribed. Following additional new species are described: *A. carltoni* sp. n. from Ecuador, *A. dybasi* sp. n. from Panama, and *A. plaumanni* sp. n. from Brazil. A key to the species of *Alexidia* is provided.

Key-words: Coleoptera - Staphylinidae - Scaphidiinae - *Alexidia* - Neotropics - taxonomy.

INTRODUCTION

The present classification of Scaphisomatini is unclear with many genera requiring detailed study and redescription. The groupings of genera (Achard, 1924) apparently does not reflect monophyly and have been ignored in recent taxonomic treatments (Löbl, 1971, 1990, 1992). Because of this problem we are in the process of examining the phylogenetic relationships of the genera in an attempt to restructure the classification of the group, especially to place taxa like Neotropical *Alexidia*, which have not been studied since their description and are rare in collections. In this paper we redescribe the genus and its type species *Alexidia rogenhoferi* Reitter, 1880, and add three new species from Brazil, Ecuador, and Panama.

Several characters of *Alexidia rogenhoferi* were not examined because only a single type is available for study, and this specimen is in poor state.

Material is deposited in the following collections: Field Museum of Natural History, Chicago (FMNH), Muséum d'histoire naturelle, Genève (MHNG), Muséum d'Histoire Naturelle, Paris (MHNP), Museo de Zoologia, Pontificia Universidad Catolica del Ecuador, Quito (MZUC), New Zealand Arthropod Collection, Auckland (NZAC) and Snow Entomological Museum, University of Kansas (SEMC).

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TAXONOMY

Alexidia Reitter, 1880

Alexidia Reitter, 1880: 43. Type species *Alexidia rogenhoferi* Reitter, 1880.

Diagnosis. Maxillary palpus aciculate. Antennomeres 3 and 4 elongate; 7, 9 and 10 each with long and narrow apical stalk and subapical rim of short setae in addition to long setae. Galea wider than long; brush apical and radulate. Surface of mentum with spines. Prothoracic corbiculum present. Metendosternum with stem present. Profemoral ctenidium absent. Mesotibia with a single ventral spine. Empodium bisetose.

Description. Dorsal vestiture reduced. Labral setae present and simple (not examined in *A. rogenhoferi*). Mandible bidentate apically, subapical serrations present (at least on left mandible). Maxillary palpus aciculate; one subapical seta present on palpus 2 (broken off in *A. rogenhoferi*). Galea wider than long; brush apical and radulate. Inner and basal setae absent from lacinia, but apical setae extending to subapical area. Hypopharynx with 2 setae on adoral surface; setae spinate. Labial palp 3-segmented; terminal labial palpomere not aciculate, inserted apically and strongly curved; subapical palpomere with one seta. Mentum (not examined in *A. rogenhoferi*) with anterior edge straight; surface with spines. Submaxillary area of head with microtubulate ducts present (not examined in *A. rogenhoferi*). Gular area with transverse clusture of pores (not examined in *A. rogenhoferi*). Frontoclypeal suture present. Eye entire. Antennal insertion below slight ridge and present at midline of eye. Antenna filiform (not seen in *A. rogenhoferi* which has only the scape and pedicel present in the type specimen but according to Reitter's description long and as in *Baeocera* Erichson); antennomeres 3 and 4 elongate; antennomeres 7, 9 and 10 each with long and narrow apical stalk and subapical rim of short setae in addition to long setae. Anterior tentorial tendon absent. Prothoracic corbiculum present. Prosternum poorly developed; anterior margin of procoxal cavity asetose. Hypomeron in lateral view completely visible; apex not projecting beyond pronotum. Prothoracic carina prominent with a bead; not completely visible in dorsal view. Anterior margin of pronotum with a bead. Posterior angle rounded and not extending below ventral edge of elytra; not extending to anapleural suture. Prosternum with spine present. Mesosternum with prepectus (mesosternal space); secondary and median lines absent. Mesosternal lines present; connecting with mesocoxal cavity, impunctate; not parallel with outer margins of procoxal rests. Mesosternal process paxillate. Mesepimeron absent or fused with mesosternum. Mesocoxa wider than intercoxal process; coxa round. Meso- and metasternum separate. Submesocoxal lines arcuate, impunctate or punctate. Metasternum without setose patch; primary setae present and located on the disc; transverse premetaxocal lines absent; descrimen absent; intercoxal plate present as a single plate. Metepisternal suture absent or present. Metepisternum visible in ventral view; posterior line absent. Metendosternum with stem present. Pteronotum with scutellum concealed below elytra; width about 1/2 entire width of pteronotum; transverse basal line or carina complete. Metacoxae separate. Brick-wall membranes present on abdominal ventrites 1 to 4. Ventrite one with intercoxal line; submetacoxal lines absent; submetacoxal bead impunctate; primary setae present. Primary setae present on

ventrites 2-4; 2 on each segment. Abdominal vestiture absent. Paratergites absent. Hind wings present or absent. Elytron with basal stria present or absent; sutural striae shortened or elongate; basal and sutural striae not connected; epipleural stria present; sutural spines and apical serrations absent. Metacoxal process triangular. Profemoral ctenidium absent. Mesofemora in cross-section rounded; subapical seta present and not spine like. Tibiae smooth. Mesotibia distinctly longer than mesotarsus; one ventral mesotibial spine present, about as long as two thirds of first tarsomere. Metatarsi smooth; mesotarsomere 1 slightly shorter than tarsomeres 2 and 3 combined. Empodium bisetose.

Discussion. Alexidia is similar to other members of Scaphisomatini, especially those taxa with aciculate maxillary palpi, elongate antennomeres 3, and basal pronotal angles rounded and not extending to anapleural suture. Whereas other Scaphisomatini, membres of *Scaphoxium* Löbl excepted, have two ventral mesotibial spines, *Alexidia* can be distinguished from them by having a single spine (Fig. 4). *Scaphoxium* has approximate coxal cavities, and is very distinctive from *Alexidia*. The aedeagus of *Alexidia* has an elongate and symmetrical internal sac with tripartite basal sclerites that are similar to those seen in species of New Zealand *Brachynopus* Broun, and a very long, irregularly folded ejaculatory duct inside the median lobe (Fig. 5). Members of *Amalocera* Erichson have also the ejaculatory duct much longer than the median lobe (Löbl, 1974) but it is coiled, sclerotized and forms a flagellum. A very long, membranous ejaculatory duct is present also in the species rich *Baeocera* group *lenta* (Löbl, 1971, 1992). In these species the ejaculatory duct is everted outside the median lobe, the sclerites of the internal sac are distinctive, and the basal angles of pronotum extend below the edge of the elytra. *Alexidia* may be readily distinguished from *Amalocera* by the abruptly narrowed and long apical part of the antennomeres 7, 8 and 9 (Fig. 1), the aciculate apical segment of maxillary palpi (Fig. 3), the lacinia with setae (Fig. 3) situated apically while in *Amalocera* (Fig. 2) the setae are present also on the subapical margin of the lacinia. Despite the similarity to *Amalocera* and *Brachynopus*, the relationship of *Alexidia* to other members of Scaphisomatini is uncertain and must await further analysis.

KEY TO THE SPECIES OF *ALEXIDIA*

1 Elytra with sutural striae shortened, not extended to base 2
- Elytra with sutural stria entire, extended from apex to base 3
2 Elytra lacking basal striae ..... *A. rogenhoferi* Reitter
- Elytra with basal striae ..... *A. carltoni* sp. n.
3 Elytral punctation much more distinct that pronotal punctation. Hind wings reduced. Metepisteral suture present ..... *A. plaumanni* sp. n.
- Elytra and pronotum with similar, very fine punctation. Hind wings developed. Metepisternal suture absent ..... *A. dybasi* sp. n.

Alexidia rogenhoferi Reitter, 1880

Syntype female, labelled: Neugranada Chevrolat (hand written) / Rogenhoferi Rttr / (hand written)/ TYP. REITTER (printed) / TYPE (red, printed) / Muséum Paris Coll. Générale (printed) (MHNP).

Description. Length 1.45 mm. Body strongly convex dorsally, moderately convex ventrally. Body and appendages light reddish-brown, tibiae and tarsi slightly lighter than femora. Head with frons wide, about 2.5 times as broad as eyes long. Eyes flat, shorter than dorso-ventral eye diameter. Pronotum strongly narrowed anteriorly, with lateral edges strongly arcuate and lateral stria concealed (dorsal view). Apical stria entire, not interrupted at middle, at middle finer than laterally. Basal lobe short. Punctation, microsculpture and pubescence completely absent (200 times magnification). Hypomera not impressed, impunctate. Elytra strongly narrowed apically, with lateral edges and striae exposed in dorsal view. Apical margins truncate except at angles, edentate. Inner apical angle not prominent. Sutural striae short and shallow, slightly diverging anteriorly, from apex extending almost to sutural mid-length. Adsutural areas flat. Basal striae absent. Epipleura wide at base, gradually narrowed apically. Supra-epipleura oblique, large, lacking basal bead, equally wide in anterior half and about 1.5 times as wide as epipleura near base, gradually narrowed apically. Elytral punctation reduced, indicated by scattered darkened point, microsculpture absent. Hind wings absent. Ventral side of thorax impunctate and lacking microsculpture. Mesosternal shield flat, lacking striae or impression. Mesepimera and mesepisterna fused. Width of intercoxal process slightly smaller than mesocoxal width, about as width of metacoxal process. Metasternum short between meso and metacoxae, flattened in middle, lacking impressions. Submesocoxal lines arcuate, impunctate. Length of submesocoxal areas as about as half of shortest interval between submesocoxal lines and metacoxal margin. Metepisterna concealed, very narrow, with impunctate suture. Abdominal ventrites 1 and 2 impunctate, lacking microsculpture. Ventrite 1 lacking impressions. Tibiae almost evenly thick. Pro- and mesotibiae straight, metatibiae very weakly curved.

Male characters unknown.

Alexidia carltoni sp. n. Figs 8-10

Holotype female: Ecuador Azuay 50km NW Cuenca 2470m, 2.Jan. 1992 C. Carlton, R. Leschen # 94 ex: berlese (SEMC). Paratypes: same data as holotype, 1 male 3 females (SEMC, MHNG, MZUC).

Description. Length 1.75 mm. Body strongly convex dorsally, moderately convex ventrally, piceous, apex of abdomen light brown to yellowish, appendages slightly lighter than body. Lateral contours of pronotum and elytra continuously arcuate. Head with frons wide, hardly twice as broad as eyes length. Eyes flat, shorter than dorso-ventral eye diameter. Antennae long, with segments 3 to 6 and 8 about equally wide, each bearing scattered, long setae. Apical half of antennal segment 11 with short pubescence, in addition to long, scattered setae. Pronotum strongly narrowed anteriorly, with lateral edges strongly arcuate and lateral stria concealed (dorsal view). Apical stria widely interrupted in middle. Basal lobe short. Punctation very fine, microsculpture absent, pubescence inconspicuous. Hypomera hardly impressed, as finely punctate as pronotum, with flat process posterior procoxae delimited by longitudinal stria. Scutellum concealed. Elytra strongly narrowed apically, with lateral edges and striae exposed in dorsal view. Apical margins truncate

except at angles, edentate. Inner apical angles not prominent. Sutural striae parallel, shallow, impunctate, shortened, extending up to anterior third of sutural length. Adsutural areas flat. Basal striae entire, very shallow, joined to lateral striae. Epipleura almost equally wide in anterior two thirds, narrowed posteriorly. Supra-epipleura oblique, large, delimited anteriorly by bead, widest at middle and at widest point slightly more than twice as wide as epipleura. Elytral punctation sparse and very fine, about as fine as that on pronotum. Hind wings absent. Mesepimera partly fused to metepisterna, with very fine suture, about as long as half of interval to mesocoxa. Mesepisterna and metasternum lacking microsculpture, very finely punctate. Metasternum narrow between meso- and metacoxae. Submesocoxal lines arcuate, very finely punctate. Submesocoxal areas shorter than interval between lines and metacoxae. Metepisterna fused to metasternum, suture indicated by straight line. Abdominal ventrites distinctly microsculptured, impunctate. Ventrite 1 with very shallow lateral impressions. Ventrites 1 and 2 with one pair of primary setae, ventrites 3 and 4 with two pairs of primary setae. Submetacoxal line impunctate. Protibiae straight, narrowed basally, meso-and metatibiae almost evenly thick.

Male. Segments 1 to 3 of protarsi widened and bearing tenant setae, segment 1 almost as wide as apex of tibia. Meso- and metatibiae arcuate. Aedeagus 0.66 mm long, as Figs 8 to 10.

Female. Meso- and metatibiae weakly curved.

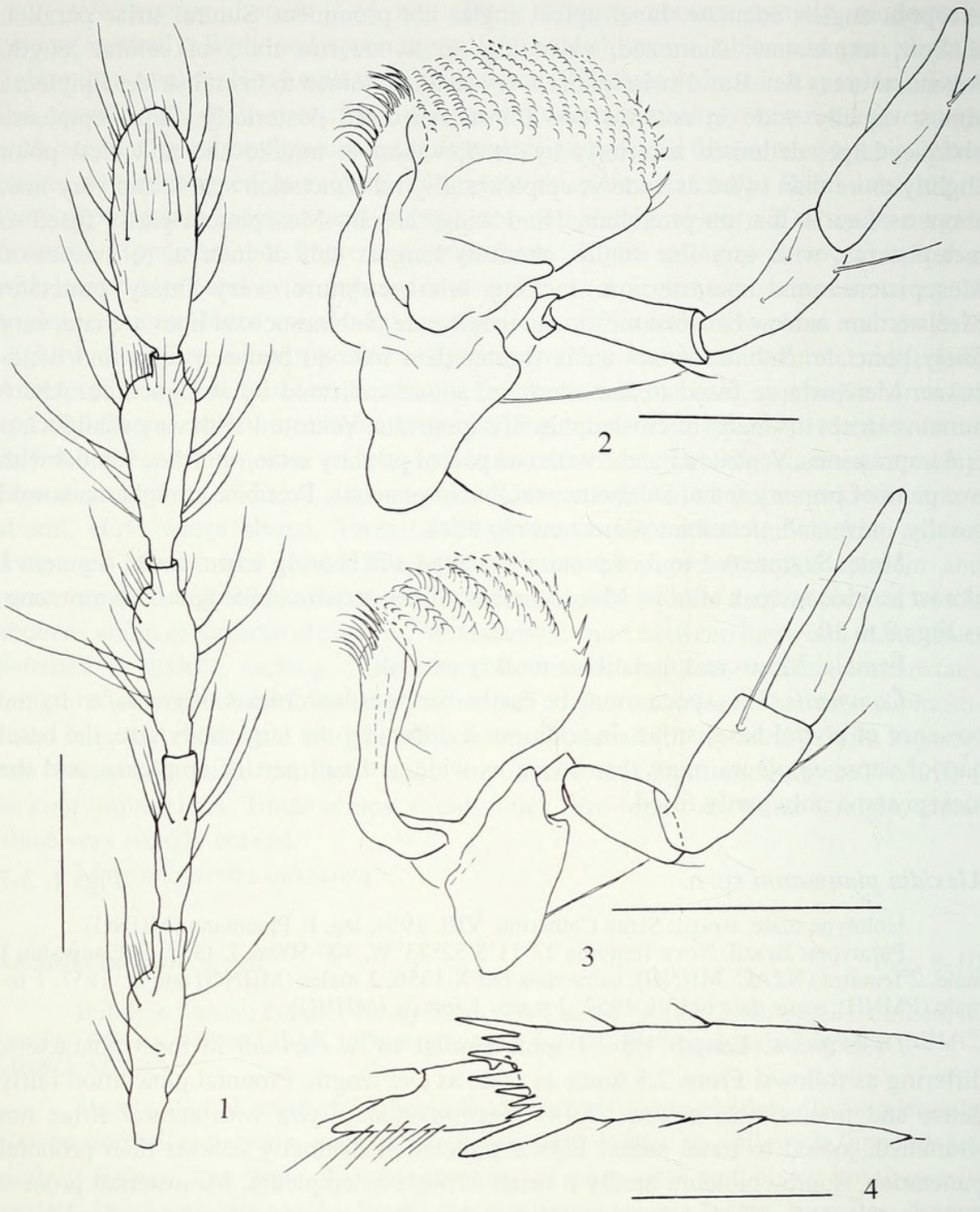
Comments. This species may be easily distinguished from *A. rogenhoferi* by the presence of elytral basal striae. In addition, it differs by the large body size, the basal part of supra-epipleura more than twice as wide as basal part of epipleura, and the mesepisterna only partly fused.

Alexidia plaumanni sp. n. Figs 1, 3-7

Holotype male: Brazil: Santa Catharina; VIII. 1954, leg. F. Plaumann (MHNG).

Paratypes: Brazil, Nova Teutonia 27°11'S 52°23' W, 300-500m, I. 1957, F. Plaumann, 1 male, 2 females (NZAC, MHNG); same data but X.1956, 2 males (MHNG) and X. 1957, 1 female (FMNH); same data but VI. 1952, 2 males 1 female (MHNG).

Description. Length 1.8-2.1 mm. Similar to *A. carltoni* in most characters, differing as follows: Frons 2.5 times as wide as eye length. Pronotal punctation fairly dense and fine, visible at low (20 x) magnification. Elytra with sutural striae not shortened, joined to basal striae. Elytral punctation distinctly coarser than pronotal punctation. Supra-epipleura hardly 3 times as wide as epipleura. Mesosternal process lacking striae. Mesepimera distinct, oblique, very short, not extending beyond mesepisternal suture, hardly as long as third of interval to mesocoxa. Middle part of metasternum coarser punctate than lateral parts of metasternum, and with distinct, very short pubescence. Submesocoxal areas as long as or slightly longer than interval between submesocoxal lines and metacoxae. Mesocoxal process about as wide as 2/3 of mesocoxal width, narrower than metacoxal process. Metepisterna not fused to metasternum, with distinct, slightly curved suture. Abdominal ventrite 1 with lateral impression and distinctly punctate in middle, ventrites 1 and 2 with single pair of primary setae, ventrites 3 and 4 with 2 pairs of primary setae. Protibiae straight, narrowed basally, meso- and metatibiae almost evenly thick.

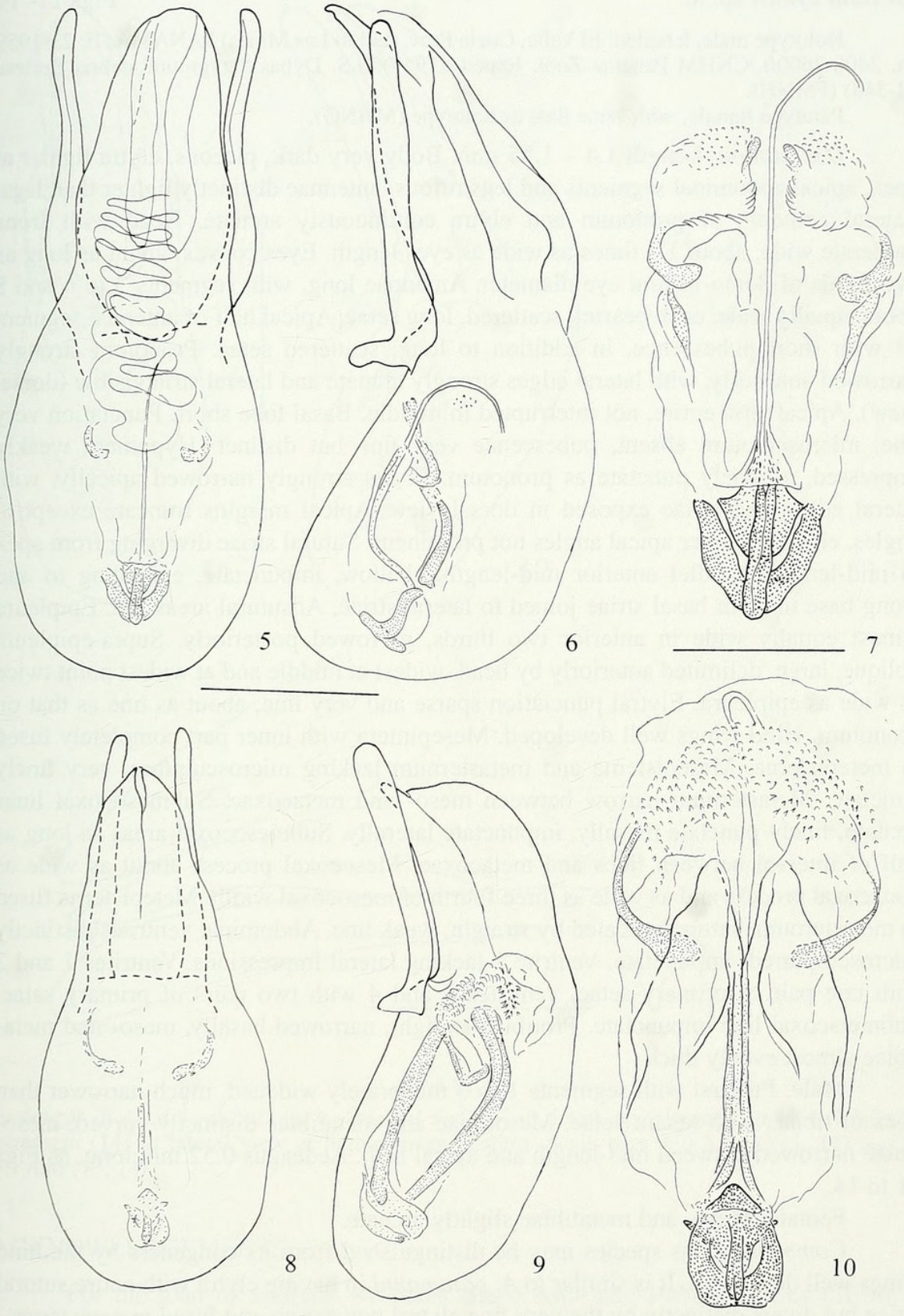


FIGS 1-4

1: *Alexidia plaumanni* sp. n., antennomeres 7 to 11; 2: *Amalocera dentipes* Löbl, maxilla with palpus; 3: *Alexidia plaumanni* sp. n., maxilla with palpus; 4: *Alexidia plaumanni* sp. n., apical part of mesotibia with basal tarsomere. Scale bars = 0.1mm.

Male. Protarsi with segments 1 to 3 widened, segment 1 about as wide as apex of protibiae. Meso- and metatibiae arcuate. Aedeagus 0.64 – 0.81 mm long, as Figs 5 to 7.

Female. Mesotibiae hardly curved, metatibiae slightly arcuate.



FIGS 5-10

Aedeagi in *Alexidia*. 5 to 7: *A. plaumanni* sp. n., internal sac (7) in detail; 8 to 10: *A. carltoni* sp. n., internal sac (10) in detail. Scale bars = 0.2 mm (5, 6, 8, 9) and 0.1 mm (7, 10).

Alexidia dybasi sp. n. Figs 11- 14

Holotype male, labelled: El Valle, Cocle Prov. (tail to Las Minas) PANAMA; II: 23-1959 alt. 2400-2600ft./CNHM Panama Zool. Exped. (1959) H.S. Dybas leg./ground debris Berlese (B-348) (FMNH).

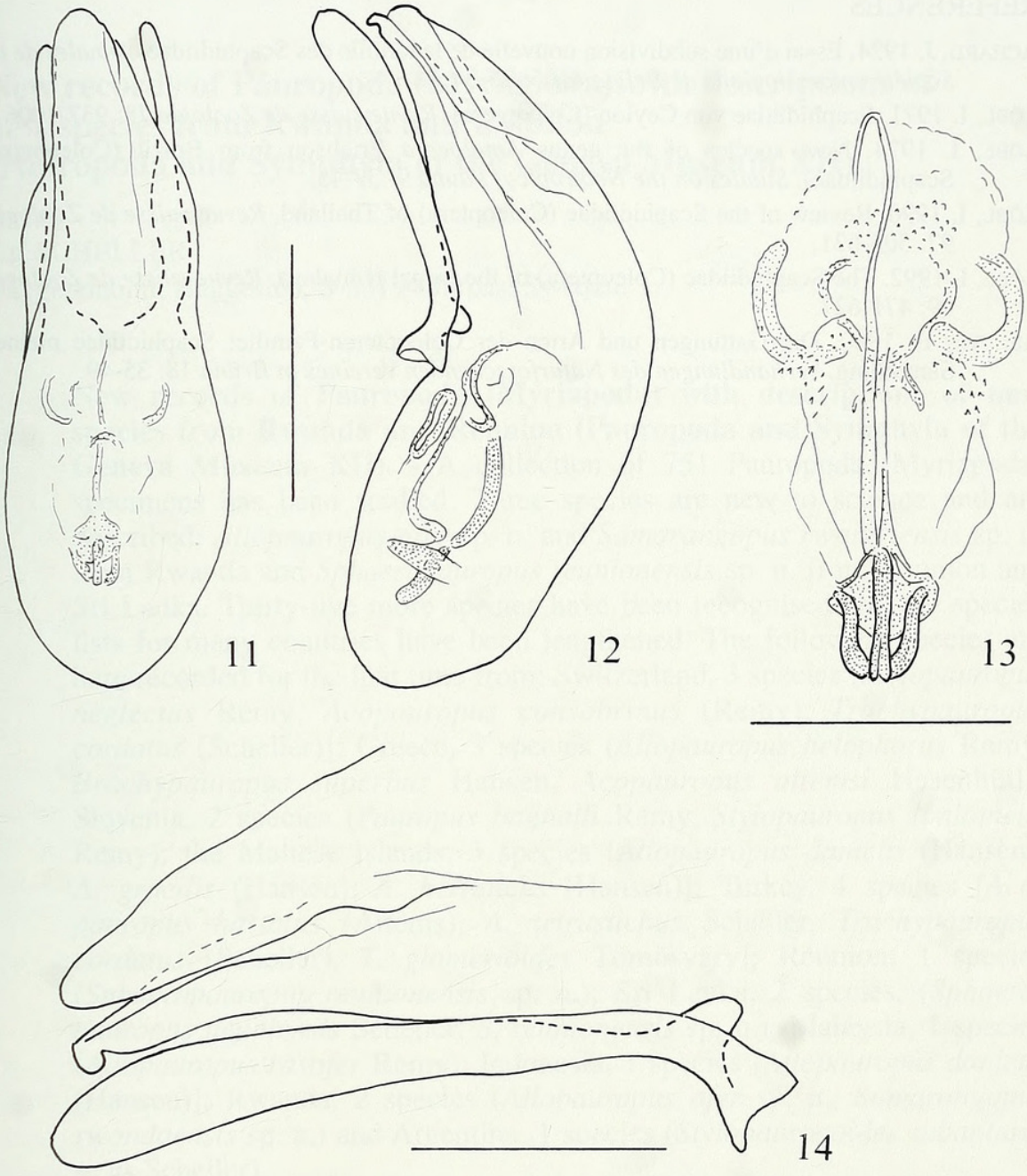
Paratype female, with same data as holotype (MHNG).

Description. Length 1.4 – 1.55 mm. Body very dark, piceous, elytra lighter at apex, apical abdominal segments and legs rufous, antennae distinctly lighter than legs. Lateral contours of pronotum and elytra continuously arcuate. Head with frons moderate wide, about 1.5 times as wide as eyes length. Eyes convex, about as long as two thirds of dorso-ventral eye diameter. Antennae long, with segments 3 to 6 and 8 about equally wide, each bearing scattered, long setae. Apical half of antennal segment 11 with short pubescence, in addition to long, scattered setae. Pronotum strongly narrowed anteriorly, with lateral edges strongly arcuate and lateral stria visible (dorsal view). Apical stria entire, not interrupted in middle. Basal lobe short. Punctation very fine, microsculpture absent, pubescence very fine but distinct. Hypomera weakly impressed, as finely punctate as pronotum. Elytra strongly narrowed apically, with lateral edges and striae exposed in dorsal view. Apical margins truncate except at angles, edentate. Inner apical angles not prominent. Sutural striae diverging from apex to mid-length, parallel anterior mid-length, shallow, impunctate, extending to and along base to form basal striae joined to lateral striae. Adsutural areas flat. Epipleura almost equally wide in anterior two thirds, narrowed posteriorly. Supra-epipleura oblique, large, delimited anteriorly by bead, widest at middle and at widest point twice as wide as epipleura. Elytral punctation sparse and very fine, about as fine as that on pronotum. Hind wings well developed. Mesepimera with inner part completely fused to metepisterna. Mesepisterna and metasternum lacking microsculpture, very finely punctate. Metasternum narrow between meso- and metacoxae. Submesocoxal lines arcuate, finely punctate mesally, impunctate laterally. Submesocoxal areas as long as half of interval between lines and metacoxae. Mesocoxal process about as wide as metacoxal process and as wide as three fourth of mesocoxal width. Metepisterna fused to metasternum, suture indicated by straight, weak line. Abdominal ventrites distinctly microsculptured, impunctate. Ventrite 1 lacking lateral impressions. Ventrites 1 and 2 with one pair of primary setae, ventrites 3 and 4 with two pairs of primary setae. Submetacoxal line impunctate. Protibiae straight, narrowed basally, meso- and metatibiae almost evenly thick.

Male. Protarsi with segments 1 to 3 moderately widened, much narrower than apex of tibiae, with tenant setae. Mesotibiae and metatibiae distinctly curved, mesotibiae narrowed between mid-length and apical fifth. Aedeagus 0.52 mm long, as Figs 11 to 14.

Female. Meso- and metatibiae slightly arcuate.

Comments. This species may be distinguished from its congeners by the hind wings well developed. It is similar to *A. plaumanni* in having elytra with entire sutural striae but divers distinctly by the very fine elytral punctation and fused metepisterna.



FIGS 11-14

Aedeagus in *Alexidia dybasi* sp. n., internal sac (13) in detail, apical part of median lobe and paramere (14) in lateral view at higher magnification. Scale bars = 0.2 mm (11, 12) and = 0.1 mm (13, 14).

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