A journal of world insect systematics

INSECTA MUNDI

0793

Taxonomic revision of the Western Hemisphere checkered beetle genus *Axina* Kirby (Coleoptera: Cleridae: Clerinae)

Weston Opitz

Florida State Collection of Arthropods
Division of Plant Industry, Entomology
Florida Department of Agriculture and Consumer Services
1911 SW 34th Street
Gainesville, Florida 32614-7100

Date of issue: September 25, 2020

Center for Systematic Entomology, Inc., Gainesville, FL

Opitz W. 2020. Taxonomic revision of the Western Hemisphere checkered beetle genus *Axina* Kirby (Coleoptera: Cleridae: Clerinae). Insecta Mundi 0793: 1–70.

Published on September 25, 2020 by
Center for Systematic Entomology, Inc.
P.O. Box 141874
Gainesville, FL 32614-1874 USA
http://centerforsystematicentomology.org/

Insecta Mundi is a journal primarily devoted to insect systematics, but articles can be published on any non-marine arthropod. Topics considered for publication include systematics, taxonomy, nomenclature, checklists, faunal works, and natural history. Insecta Mundi will not consider works in the applied sciences (i.e. medical entomology, pest control research, etc.), and no longer publishes book reviews or editorials. Insecta Mundi publishes original research or discoveries in an inexpensive and timely manner, distributing them free via open access on the internet on the date of publication.

Insecta Mundi is referenced or abstracted by several sources, including the Zoological Record and CAB Abstracts. Insecta Mundi is published irregularly throughout the year, with completed manuscripts assigned an individual number. Manuscripts must be peer reviewed prior to submission, after which they are reviewed by the editorial board to ensure quality. One author of each submitted manuscript must be a current member of the Center for Systematic Entomology.

Guidelines and requirements for the preparation of manuscripts are available on the Insecta Mundi website at http://centerforsystematicentomology.org/insectamundi/

Printed copies (ISSN 0749-6737) annually deposited in libraries:

CSIRO, Canberra, ACT, Australia
Museu de Zoologia, São Paulo, Brazil
Agriculture and Agrifood Canada, Ottawa, ON, Canada
The Natural History Museum, London, UK
Muzeum i Instytut Zoologii PAN, Warsaw, Poland
National Taiwan University, Taipei, Taiwan
California Academy of Sciences, San Francisco, CA, USA
Florida Department of Agriculture and Consumer Services, Gainesville, FL, USA
Field Museum of Natural History, Chicago, IL, USA
National Museum of Natural History, Smithsonian Institution, Washington, DC, USA
Zoological Institute of Russian Academy of Sciences, Saint-Petersburg, Russia

Electronic copies (online ISSN 1942-1354, CDROM ISSN 1942-1362) in PDF format.

Printed CD or DVD mailed to all members at end of year. Archived digitally by Portico.
Florida Virtual Campus: http://purl.fcla.edu/fcla/insectamundi
University of Nebraska-Lincoln, Digital Commons: http://digitalcommons.unl.edu/insectamundi/
Goethe-Universität, Frankfurt am Main: http://nbn-resolving.de/urn/resolver.pl?urn:nbn:de:hebis:30:3-135240

0793: 1–70 **INSECTA MUNDI** 2020

Taxonomic revision of the Western Hemisphere checkered beetle genus *Axina* Kirby (Coleoptera: Cleridae: Clerinae)

Weston Opitz

Florida State Collection of Arthropods
Division of Plant Industry, Entomology
Florida Department of Agriculture and Consumer Services
1911 SW 34th Street
Gainesville, Florida 32614-7100
Weston.Opitz@fdacs.gov

Table of Contents

Abstract. The New World genus *Axina* Kirby (Coleoptera: Cleridae) is revised for the first time. Thirty-two **new species** are described: *Axina acutipennis*, *A. adelosa*, *A. atmis*, *A. bahia*, *A. bella*, *A. brunnea*, *A. chiasta*, *A. furcula*, *A. heveli*, *A. ignota*, *A. klisis*, *A. latilinea*, *A. lobispinula*, *A. luzia*, *A. macilenta*, *A. megaspina*, *A. minas*, *A. ochra*, *A. oligocheia*, *A. ordinis*, *A. orcastomata*, *A. pallidioccabus*, *A. phallospina*, *A. piperata*, *A. pollex*, *A. polycaula*, *A. rio*, *A. schenklingi*, *A. spina*, *A. trinalis*, *A. villa*, and *A. vista*. The 19 previously described species are: *Axina analis* Kirby, *A. apicalis* Pic, *A. basalis* Schenkling, *A. bifasciata* (Chevrolat), *A. centrimaculata* Schenkling, *A. conspicua* Schenkling, *A. diversesignata* Pic, *A. equestris* (Schenkling), *A. fasciata* Kirsch, *A. fortipes* Pic, *A. lateralis* Pic, *A. longevittata* Pic, *A. munda* Schenkling, *A. nigrifrons* Schenkling, *A. parcepunctata* Schenkling, *A. picta* Schenkling, *A. plagiata* Schenkling, *A. proxima* (Chevrolat), and *A. sexmaculata* Spinola. Two species *Priocera equestris* Schenkling and *Priocera proxima* Chevrolat, are transferred into the genus *Axina* becoming **new combinations**: *Axina equestris* (Schenkling) and *Axina proxima* (Chevrolat). Two names, *Priocera podagrica* Schenkling, 1900, and *P. podagrica* variety *pygmaea* Schenkling, 1902, are **new synonymies** of *Priocera proxima* Chevrolat, 1876. **Lectotypes are here designated** for nine species: *Axina basalis* Schenkling, 1900; *Axina centrimaculata* Schenkling, 1900; *Axina conspicua* Schenkling, 1900; *Axina diversesignata* Pic, 1946; *Axina munda* Schenkling, 1900; *Axina nigrifrons* Schenkling, 1906; *Axina parcepunctata* Schenkling, 1900; *Axina picta* Schenkling, 1907; and *Axina plagiata* Schenkling, 1900. It is proposed that *Axina* species are predators of lignicolous insects, particularly bark beetles. The species of *Axina* can be classified into eight species groups and a theory of their phylogenetic relationships is proposed via WINCLADA in conjunction with NONA. Of the 51 species that now comprise *Axina*, only one traversed the Panamanian portal before the Colombian Andes reached their modern altitudes. This work includes a generic-level morphological analysis, brief treatise of natural history, key to species, comments about *Axina* zoogeography, and hypotheses of species-group phylogeny.

Key words. Classification, habitus photographs, key to species, natural history, phylogeny, systematics.

Resumen. El género *Axina* Kirby (Coleoptera: Cleridae), del Nuevo Mundo, es revisado por primera vez. Se describen treinta y dos **especies nuevas**: *Axina acutipennis*, *A. adelosa*, *A. atmis*, *A. bahia*, *A. bella*, *A. brunnea*, *A. chiasta*, *A. furcula*, *A. heveli*, *A. ignota*, *A. klisis*, *A. latilinea*, *A. lobispinula*, *A. luzia*, *A. macilenta*, *A. megaspina*, *A. minas*, *A. ochra*, *A. oligocheia*, *A. ordinis*, *A. orcastomata*, *A. pallidioccabus*, *A. phallospina*, *A. piperata*, *A. pollex*, *A. polycaula*, *A. rio*, *A. schenklingi*, *A. spina*, *A. trinalis*, *A. villa*, y *A. vista*. Las 19 especies descritas anteriormente son: *Axina analis* Kirby, *A. apicalis* Pic, *A. basalis* Schenkling, *A. bifasciata* (Chevrolat), *A. centrimaculata* Schenkling, *A. conspicua* Schenkling, *A. diversesignata* Pic, *A. equestris* (Schenkling), *A. fasciata* Kirsch, *A. fortipes* Pic, *A. lateralis* Pic, *A. longevittata* Pic, *A. munda* Schenkling, *A. nigrifrons* Schenkling, *A. parcepunctata* Schenkling, *A. picta* Schenkling, *A. plagiata* Schenkling, *A. proxima* (Chevrolat), y *A. sexmaculata* Spinola. Dos especies *Priocera equestris* Schenkling y *Priocera proxima* Chevrolat, son transferidas al genero *Axina* siendo **nuevas combinaciones**: *Axina equestris* (Schenkling) y *Axina proxima* (Chevrolat). Dos nombres, *Priocera podagrica* Schenkling, 1900, y *P. podagrica* variedad *pygmaea* Schenkling, 1902, son **nuevas sinonimias** de *Priocera proxima* Chevrolat, 1876. **Se designan lectotipos** para nueve especies: *Axina basalis* Schenkling, 1900; *Axina centrimaculata* Schenkling, 1900; *Axina conspicua* Schenkling, 1900; *Axina diversesignata* Pic, 1946; *Axina munda* Schenkling, 1900; *Axina nigrifrons* Schenkling, 1906; *Axina parcepunctata* Schenkling, 1900; *Axina picta* Schenkling, 1907; y *Axina plagiata* Schenkling, 1900. Las especies de *Axina* son depredadoras de especies de insectos lignícolas, particularmente Scolytidae. Se ordena las especies de *Axina* en ocho grupos y su relación filogenética se construye con WINCLADA y NONA. De las 51 especies actualmente incluidas en *Axina*, solo una cruzo el Portal de Panamá y esto antes de que los Andes colombianos alcanzaran sus altitudes actuales. Este trabajo incluye un análisis morfológico a nivel de género, elementos de historia natural, una clave de las especies, comentarios sobre la zoogeografía de Axina y una hipótesis de la filogenia de los grupos de especies.

Palabras clave. Clasificación, fotografía de habitus, clave para identificación especies, historia natural, filogenia, sistemática.

ZooBank registration. urn:lsid:zoobank.org:pub:0B89F97A-AAA5-4CE2-9DA2-CC47EA03346D

Introduction

In his world catalogue of checkered beetles Corporaal (1950) lists 19 species names of the South American genus *Axina* Kirby (Coleoptera: Cleridae), a genus name made available by Kirby in 1818. Since Kirby, Sigmund Schenkling and Maurice Pic contributed most of the new species names. As most of their contemporaries, these authors did not include characteristics of the male and female genitalia in their contributions. In the case of *Axina* species, use of such characteristics is imperative for a realistic result about species diversity in the genus. This point is well exampled in *Axina* where three new species were discovered in an assemblage of specimens routinely identified as *Axina nigrifrons* Schenkling. In this work, I describe 32 new species, which brings the current total number of known *Axina* species to 51. The purpose of this work is to make better known the species composition of *Axina* so the species diversity may be included in the forthcoming "Catalogue the checkered beetles of the Western Hemisphere".

Materials and Methods

Morphological criteria were used to distinguish species, but I adhere to the biological species concepts as discussed by Standfuss (1896), Dobzhansky (1937), and Mayr (1963). I follow the precepts of Hennig (1966) to investigate supraspecific relationships. Some phylogenetic terminology varies from that of Hennig in that I agree with Tuomikoski (1967) who advocates the use of "apotypic" and "plesiotypic" instead of "apomorphic" and "plesiomorphic" because phylogenetic work may not be restricted to morphological criteria. The operational criteria for the delimitation of species usually involves morphological structure and any other available criteria that suggest reproductive isolation among members of metapopulation lineages (de Queiroz 2007). Experience with morphological structure provides comprehensive knowledge with which to hypothesize reproductive isolation. In this study, consideration for species status involves: width of the frons, organization of the elytral asetiferous punctures, width of the elytral interstitial spaces, configurations of fasciae on the elytral disc, and characteristics of the aedeagus with particular reference to the size of the phallobasic lobes, and presence or absence, and shape of, phallic plate serrations.

Methods involving measurements and morphological terminology follow those described in Opitz (2010). Brown (1956) and Borror (1960) were used to coin scientific names. Abbreviations used in this treatise are defined as follows: EW/FW= eye width (frontal view)/frons width (frontal view); PW/PL= pronotum width (across the middle)/pronotum length (midline from pronotum anterior margin to posterior margin); EL/EW= elytral length (from humeral angle to apex)/elytral width (greatest dorsal width of one elytron). Measurements were made at 500×. Microscopic observations were made with a M5 Wild stereoscopic microscope with camera lucida attachment (Leica, Wetzlar, Germany). Habitus photographs were taken with a Leica Z 16 APO microscope equipped with JVC KY-F75U-CCD camera and controlled by Syncroscopy Auto Montage software (Cambridge, United Kingdom). The SEM micrographs were produced with a Scanning Electron Microscope-S-3500N (Hitachi Science Systems, Ltd., Tokyo, Japan). Image stacks, involving the aedeagus, were taken with a Leica® DM2500 compound scope with a 10× objective lens and a Leica® DFC425 camera (Meyer Instruments, Houston, Texas, United States of America), and combined using Zerene Stacker®. To facilitate the identity of type specimens, I transcribed their locality information in the exact manner as found on labels. Historical *Axina* literature, published prior to 1950, are not included in this work. They are cited in Corporaal's (1950) Catalogue of World Cleridae.

Dos Santos and Filho (1987: 65) described *Axina cuneata* based only on the holotype, which was deposited in the Rio de Janeiro National Museum. Unfortunately, that holotype was destroyed in a museum fire during 2018. I have not seen a specimen that matches the description of this species or compares favorably with a line drawing provided by Dos Santos and Filho. *Axina cuneata* Santos and Filho will not receive further consideration in this work. In addition, Ekis (1975: 19) transferred *Cymatodera undata* Spinola to *Axina*, but the holotype of Spinola's species is not available at this time; so that species will also not receive any further consideration in this work.

Natural history. Although I studied the mesodermal internal organs of five *Axina* species (Fig. 15–20), no conclusion could be reached as to the feeding habits of these beetles based on contents of the alimentary canal. I did

notice a highly muscular proventriculus, which in other checkered beetles served to indicate predaceous habits. Moreover, the mouthpart construction and leg morphology suggest a cursory predatory lifestyle. A considerable number of Brazilian specimens were obtained from the late Fritz Plaumann, who gathered *Axina* specimens while they were emerging from tree branches infested with bark beetles. From the available and admittedly circumstantial evidence, I posit that *Axina* species, like most other checkered beetles studied by me, are predaceous insects that feed on lignicolous prey; with the larval stages feeding on immatures of bark beetles. It has also been observed, in Bolivia (James E. Wappes, personal communication), that light trap and Malaise traps were most successful in capturing *Axina* specimens when such traps were set in forests laden with bark beetle infestations.

Checkered beetles have a general affinity for tree volatiles (Harwood and Rudinsky 1966: 9; Dixon and Payne 1979: 180; Billings 1985: 488). Therefore, it is no surprise that Carlos Flechtmann collected *Axina* beetles in a flight intercept trap, laced with sulcatol-ethanol, set in a stand of *Eucalyptus grandis* W. Hill ex Maiden (Myrtaceae), in southern Brazil. Tree volatiles, such as terpines, are released when bark beetles bore into tree trunks (Opitz 2011: 72). Altitudinally, these insects were collected from 200 to 1,700 m.

Evolutionary states of characters. Twelve character states were organized into a matrix, which was then analyzed with NONA (Goloboff 2003) in combination with WINCLADA version 1.00.80 (Nixon 2002) to find the most parsimonious phylogenetic tree. The WINCLADA program produced one tree (Fig. 68) via heuristic analysis [Maximum trees (hold) = 100, number of replications 1 (mult) = 100, and multiple TBR = TBR (mult max) were used] (with indices as follows: L-12, Ci-100, Ri-100). The genus *Natalis* Schenkling (outgroup) and my general knowledge of other Clerinae genera were used to assist in predictions of the evolutionary states of characteristics. I relied on the methods of character-state analysis employed by Ekis (1977), Watrous and Wheeler (1981), and Nixon and Carpenter (1993).

Character 0 - Frons width: (1) not twice wider than eyes; (2) twice wider than eyes
Character 1 - Spermatophore gland: (0) not present; (1) present
Character 2 - Last maxillary palpomere: (0) digitiform; (1) securiform
Character 3 - Phallobasic apodeme: (0) present; (1) absent
Character 4 - Elytral color: (0) not mostly brown; (1) mostly brown
Character 5 - Elytral surface: (0) without glossy luster; (1) with glossy luster
Character 6 - Margin of phallic plate: (0) not serrate; (1) serrate
Character 7 - Posterior margin of female pygidium: (0) entire; (1) trilobed
Character 8 - Middle of female pygidial distal margin: (0) not produced; (1) produced
Character 9 - Phallus: (0) not produced; (1) produced
Character 10 - Base of phallobasic lobe: (0) not with spine; (1) with spine
Character 11 - Number of elytral asetiferous punctures: (0) more than 25; (1) not more than 25

Table 1. Character matrix of 12 adult morphological characters of *Natalis* (outgroup) and species groups of *Axina*.

Taxa	Characters											
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Natalis	1	0	0	0	0	0	0	0	0	0	0	0
bahia group	0	1	1	1	1	0	0	0	0	0	0	0
plagiata group	0	1	1	1	0	1	0	0	0	0	0	0
analis group	0	1	1	1	0	0	1	1	0	0	0	0
basalis group	0	1	1	1	0	0	1	0	1	0	0	0
ochra group	0	1	1	1	0	0	1	0	0	1	0	0
fortipes group	0	1	1	1	0	0	1	0	0	0	1	0
bella group	0	1	1	1	0	0	1	0	0	0	0	1
fasciata group	0	1	1	1	0	0	1	0	0	0	0	0

Repositories of specimens. I used codens as noted in Arnett et al. (1993) to indicate repositories of specimens, with some modifications to accommodate institutional name changes.

ACMT American Coleoptera Museum, 8734 Paisano Pass, San Antonio, Texas 78255, United States of America (James E. Wappes).

AMNH American Museum of Natural History, Department of Entomology, Central Park West at 79th Street, New York, New York 10024-5192, United States of America (Lee Herman).

BMNH British Museum of Natural History, Department of Entomology, SW 5BD, London, United Kingdom (Beulah Garner; Maxwell V. L. Barclay).

CASC California Academy of Sciences, Department of Entomology, Golden Gate Park, San Francisco, California 94118, United States of America (Chris Grinter).

CMNC Canadian Museum of Nature, Insect Collection, Post Office Box 3443, Station D, Ottawa, Ontario, Canada K1P 6P4, Canada (Robert S. Anderson; Francois Genier).

CMNH Carnegie Museum of Natural History, Invertebrate Zoology, 4400 Forbes Avenue, Pittsburgh, Pennsylvania 15213, United States of America (Robert L. Davidson; Robert Androw).

CNCI Agriculture-Food Canada, K.W. Neatby Building, 960 Carling Avenue, Ottawa, K1A OC6, Canada (Serge Laplante)

CSCA California State Collection of Arthropods, Plant Pest Diagnostics Branch California Department of Food & Agriculture, 3294 Meadowview Road, Sacramento, California 95832-1448, United States of America (Jacqueline Kishmirian-Airoso).

CSUC Colorado State University, Department of Bioagricultural Sciences and Pest Management, 1177 Campus Delivery, Fort Collins, Colorado 80523-1177, United States of America (Boris C. Kondratieff).

CUIC Cornell University Insect Collection, Cornell University, Comstock Hall, Department of Entomology, Ithaca, New York 14853-2601 United States of America (Jason J. Dombroskie).

EMEC Essig Museum of Entomology, University of California, College of Agriculture, Division of Entomology and Parasitology, California Insect Survey, Berkeley, California 94720, United States of America (Pete Oboyski).

FMNH Field Museum of Natural History, Insects, Arachnids, and Myriapods, Roosevelt Road at Lake Shore Drive, Chicago, Illinois 60605, United States of America (Rebekah Baquiran).

FSCA Florida State Collection of Arthropods, Division of Plant Industry/Entomology, Doyle Connor Building, 1911 SW 34th Street, Florida Department of Agriculture, Gainesville, Florida 32614-7100. United States of America (Paul E. Skelley).

FWSC Fredrick W. Skillman Collection, Longhorn Ranch, 751 N Cochise Stronghold Road, Pearce, Arizona 85606, United States of America.

JNRC Jacques Rifkind Collection, 5105 Morella Avenue, Valley Village, California 91607-3219, United States of America.

KSUC Kansas State University Museum of Entomological and Prairie Arthropod Research, Kansas State University, Department of Entomology, 232 Waters Hall, Manhattan, Kansas, 66506 (Gregory Zolnerowich).

MCNZ Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Rua Dr. Salvador França, 1427, 90690-000 Porto Alegre, Rio Grande do Sul, Brasil (Luciano de Azevedo Moura).

MNHN Museum d'Histoire Naturelle, Entomologie, 45 bis, Rue de Buffon, Paris (Ve), France (Antoine Mantilleri).

OXUM Oxford University Museum of Natural History, Hope Entomological Collections, Parks Road, Oxford, OX1 3 P W, Unite Kingdom (Amoret Spooner;).

QCAZ Pontificia Universidad Catolica del Ecuador, Departamento de Biologia, Avenida 12 de Octubre, entre Patria y Beintilla, Apartado 17-01-2184, Quito, Ecuador (Cliffort Keil).

RFMC Roy F. Morris II Collection, 2635 Ewell Road, Lakeland, Florida 33811, United States of America.

SDEI Deutsches Entomologisches Institut, Leibniz-Zentrum für Agrarlandschafts- und Landnutzungsforschung e. V. Eberswalde Str. 84, D-15374 Müncheberg, Germany (Lutz Behne).

SEMC Division of Entomology, KU Biodiversity Institute, Snow Entomological Collections, 1501 Crestline Drive, Suite 140, University of Kansas, Lawrence, Kansas 66045-4401, United States of America (Zachary Falin).

SMTD Senckenberg Naturhistorische Sammlungen Dresden, Coleoptera, Königsbrücker Landstrasse 159, D-01109 Dresden, Germany (Olaf Jäger)

TAMU Texas A & M University, College of Agriculture and Life Sciences, Department of Entomology, Minnie Belle Heep Building, College Station, Texas 77843-7029, United States of America (Andrew J. Graf).

UEPB Universidade Estadual Paulista, Department Plant protection-FEIS/UNESP Avenida Brasil 56, 15385-000- Ilha Solteira/SP, Brasil (Carlos Flechtmann).

USNM United States National Museum, National Museum of Natural History MRC 168, Washington, D.C. 20560-0165, United States of America (Floyd Shockley).

WFBM William F. Barr Museum, University of Idaho, Department of Plant, Soil, and Entomological Sciences, 606 Rayburn Street, Moscow, Idaho 83844-2339, United States of America (Luc Leblanc).

WOPC Weston Opitz Collection, Florida State Collection of Arthropods, Division of Plant Industry/Entomology, Florida Department of Agriculture and Consumer services, 1911 SW 34th Street, Gainesville, Florida 32614-7100, United States of America.

External morphology. *Color*. The color of the integument reflects the type of niches in which *Axina* are found, among tree bark. The integumental color is mostly castaneous. On the elytron color characteristics involve mostly combinations of castaneous, brown, black, testaceous, white, and yellow, in the form of fasciae, spots and angular markings.

Vestiture. The integument is profusely vested with yellow setae and beginning with antennomere 4 the antennae show a copious number of microsensillae at the antennomere anterodistal angle.

Cranium. The adult head is hypognathous, and the cranium is subquadrate and well sclerotized. Anteriorly, the cranium is defined by the frons, which is bordered dorsally by the epicranium and ventrally by the clypeus. The epistomal suture traverses the frontoclypeal region, dividing the frontal region of the cranium into the clypeus and frons. The frons is flanked by the compound eyes and lead into the more dorsal epicranium. The clypeus is a narrow transverse plate that is bordered laterally by the antennal carinae. The compound eyes are boldly convex and comprised of large ommatidia, which are interrupted by the ocular notch. The region behind the eye defines the gena, which is ventrally bordered by the post occipital suture. Ventrally, the cranium (Fig. 1) has a trapezoidal gula that shows a well-developed post-gular plate and a pair of setose post-gular processes (Fig. 2).

Antenna. The antenna (Fig. 6) is comprised of 11 antennomeres and beginning with antennomere 4 is serrate. The organization of these antennomeres involve the scape, pedicel and flagellum. The scape is oblong, connected to a suboval to subquadrate pedicel. The funicular antennomeres are triangular, except the last antennomere, which is oblong.

Mouthparts. The labrum is emarginate at its anterior margin. From the hind angles the labrum projects tormal processes, which are divided into a medial and lateral process. Each medial process is curvate to the posterior and remains disconnected at its extremity. Anteroventrally, the labrum exhibits a small broad V-shaped plate, the epipharynx. The mandible (Fig. 3) is trigonal, well sclerotized, and prominently visible in repose with well-developed anterior dens. The medial and posterior dens are moderately developed and a well-developed penicillus is present. The maxillary components involve a triangular base, the cardo, the stipes, the galea, and the lacinia. The lacinia is divided into the mediolacinia and laterolacinia. The terminal maxillary palpomere is securiform (Fig. 4). The labium connects to the submental region of the cranium. Its mentum is slightly sclerotized. The ligula has a fringe of minute setae. The last labial palpomere is securiform (Fig. 5).

Prothorax. The prothorax is a moderately oblong cylinder connected to the cranium by the cervical membrane. The pronotum (Fig. 9) is traversed by anterior subapical and posterior prebasal depressions that delimit the pronotum arch, the pronotum proper, and the pronotum collar. Dorsally, the pronotal is convex and exhibits two shallow swellings and a midline concavity. The pronotal disc is minutely punctate. The anteromedial portion of the prosternum (Fig. 8) is a narrow transverse plate that extends posteriorly, between the procoxae as the prointercoxal process, and posterolaterally as the pronotum projections. The latter are short; they extend about half way to the prointercoxal process. The later expands laterally distally. The floor of the procoxal cavities, the cryptosternum, is incomplete.

Pterothorax. The mesothorax is approximately one-half the length of the metathorax. Its notal plate is divided into an anterior scutum and quadrate scutellum. The mesopleuron is divided into a transverse mesepisternum

and smaller triangular mesepimeron. The mesosternum is subtrapezoidal in outline and prolonged posteromedially into a mesothoracic intercoxal process. The elytron is oblong and varies in surface sculpturing, with regard to the distribution of the asetiferous punctures; it is outlined by three margins, the anterior, sutural, and epipleural margins. The epipleuron narrows to the elytral apex. The elytral disc always shows setiferous and asetiferous punctures (Fig. 10), although the number of asetiferous punctures is highly reduced in some species. The punctures may or may not be organized into striae. Primary (1°) setae are absent but secondary (2°) setae (Opitz 2011: 113) are present. The 2° setae emerge from minute punctures found in areas between the asetiferous punctures, areas defined as interstitial spaces.

The metathorax is minimally sclerotized dorsally, well sclerotized and convex ventrally. The metapleuron consists of a slender metepisternum and mostly membranous metepimeron. The metasternum is trapezoidal and is divided into two halves by the discriminal line. A hylecoetoid metendosternite is well-developed (Crowson 1944: 274). The metendosternite (Fig. 7) consists of furcal arms, a furcal anterior plate, the furcal laminae, and the furcal stalk. The membranous metathoracic wing is supported by well-defined veins. I follow the vein nomenclature as proposed by Gerstmeier and Eberle (2010: 10).

Legs. The leg morphology of *Axina* species is similar to other beetles whose lifestyle involves cursorial predatory activities (Fig. 11–13). The leg is comprised of the coxa, trochanter, femur, tibia, and tarsus. The femora of the prothorax are divided into a femoral stalk and a femoral capitulum. The profemora are clavate in all species. The tibia is somewhat curvate and is sculptured with a lateral carina that ends near the tibial apex; the carina is reduced on the metatibiae. Set in the membranes between the tibia and tarsus are tibial spurs. The tibial spur formula is 0-1-1. The tarsus is comprised of 5 tarsomeres. The venter of the first 4 tarsomeres is set with well-developed tarsal soles that progressively become more transverse towards tarsomere 5; the soles of are not incised distally (Fig. 14). The unguis does not have a denticle.

Abdomen. The abdomen is flexible and feebly sclerotized dorsally. Ventrally, it consists of 6 sclerotized visible sternites. The distal margin of the sternite VI is usually emarginated in males and evenly arcuate in females. Visible tergite VI, the pygidium, is usually scutiform and in females it may be multilobed along its distal margin. The checkered beetle aedeagus is comprised of two main structures, the tegmen and the phallus. The tegmen surrounds the phallus when the latter is in repose. For practical reasons the tegmen is divided into phallobasic components, which involve the phallobase, phallobasic lobes, a pair of phallobasic struts, and the phallobasic apodeme; the latter is abbreviated in most species of *Axina*. The phallus comprises the phallic apex and the phallic plates. The most extensive variation in aedeagal structure among *Axina* species involves the length of the aedeagus, size and shape of the phallobasic lobes, presence or absence of serrations on the edges of the phallic plates, and presence or partial development of the phallobasic apodeme. The spicular fork is long and slender, with the spicular plate narrow, and the spicular apodemes fused at their basal ⅘. The intraspicular plate is poorly sclerotized, narrow, and transverse; it is located at the distal extreme of the spicular fork. The ovipositor is mostly a membranous tube supported by three pairs of slender sclerites, the oblique bacculi, the ventral bacculi, and a pair of proctigeral bacculi. The coxites are lobes that are slightly sclerotized and setose. Between the dorsal and ventral bases of the coxites are the laminae. The dorsal and ventral laminae are trilobed, with each lobe pleated. The coxital stylus, which is setose at its extremity, is attached to the posterior limits of the coxite.

Internal morphology. This analysis of internal morphology is based on dissections of four species of *Axina* (Opitz 2014: 8).

Alimentary canal. The adult alimentary canal consists of the stomodaeum, ventriculus, cryptonephridial Malpighian tubules, and the proctodaeum. The stomodaeum is comprised of the pharynx, esophagus, and a muscular proventriculus. Internally, the proventriculus shows infoldings that lead to lobes of the stomodeal valve. Based on the species studied, the *Axina* stomodeal valve is comprised of 4 primary and 2 secondary lobes. The ventriculus is highly papillose. Between the ventriculus and the proctodaeum emerge 6 cryptonephridial Malpighian tubules. These are followed by the components of the proctodaeum, which are a muscular pylorus, the ileum, the colon, and the proximally bulbous rectum; the latter is considerably longer in females than in males.

Mesodermal reproductive organs. The mesodermal male reproductive organs (Fig. 15–18) involve the testes, vas deferens, accessory glands, and ejaculatory duct. The testes are multifollicular. There are 3 pairs of accessory glands, with the medial pair showing a medial dark streak. This medial gland presumably serves as a

spermatophore gland, which is akin to the accessory gland development in several other genera of the subfamily Clerinae (Opitz 2003). The major female organs (Fig. 19–20) involve the ovaries, lateral and medial oviducts, bursa copulatrix, spermathecal capsule, spermathecal gland, and the vagina. The ovaries consist of multifollicular acrotrophic follicles that stem from the calyx. This structure connects to short, lateral oviducts that communicate with a longer median oviduct. The bursa copulatrix is a saccular structure connected to the proximal region of the vagina. The spermathecal capsule is tubular and slightly sclerotized. The capsule communicates with the vagina via the spermathecal duct. The spermathecal gland attaches to the middle of the spermathecal capsule. The vagina is a tubular, highly muscular tapered organ.

Notes. Opitz (2014: 16) indicated there were 2 pairs of divided male accessory glands. I now realize that there are actually 3 pairs with the dorsal pair very short and filled with a transparent secretion.

Systematic Account

Order Coleoptera Linnaeus, 1758
Suborder Polyphaga Emery, 1886
Infraorder Cucujiformia Lameere, 1938
Family Cleridae Latreille, 1802
Subfamily Clerinae Latreille

Genus *Axina* Kirby, 1818

Axina Kirby, 1818: 389. Papp 1960: 80. Winkler 1961: 44. Ekis 1975: 19. Opitz 2010: 66; 2014: 3. See Corporaal (1950: 98) for more historical citations.

Type species. *Axina analis* Kirby, 1918: 392. By original designation.

Diagnosis. Among the Western Hemisphere genera of Clerinae, *Axina* specimens are characterized by their serrate antennae (Fig. 6) and clavate prothoracic femur, two characteristics they share with members of the genus *Priocera*. However, *Axina* specimens show a securiform terminal maxillary palpomere (Fig. 4), whereas in *Priocera* specimens the terminal maxillary palpomere is digitiform.

Synapotypic characteristics. Phallic plate serrate and presence of spermatophoral gland.

Redescription. Size. Length 5.0–21.0 mm; width 1.2–5.0 mm. Form. Oblong rectangular, body shallow, about 4 times longer than broad. Vestiture. Dorsum profusely vested with short pubescence, antenna (Fig. 10) sparsely setose, anterodistal angle of antennomeres 4–11 profusely vested with microsensillae, elytra abundantly vested with short 2° setae, all setae emerge from minute punctures. Head. (Fig. 1) Cranium subquadrate, frons much narrower than width of eye, usually about as wide as length of antennal scape, cranium profusely indented with small setiferous punctures; gula (Fig. 2) large, trapezoidal, sutures converge, gula with two well-developed setose post-gular processes (Fig. 2); labrum very shallow, broadly incised distally, tormal processes directed posteriorly, confluent distally, epipharyngeal area very small; mandible, body stout, anterior dens subacute, medial and posterior dens moderately developed, penicillus well developed; maxilla (Fig. 4), laterolacinia present, terminal palpomere securiform; labium (Fig. 5), ligula deeply incised, ligular lobes spatulate, terminal palpomere securiform; eyes very large, coarsely facetted, ocular notch deep; antenna (Fig. 6) comprised of 11 antennomeres, serrate.

Thorax. Pronotum (Fig. 9) oblong, disc convex and finely punctate, with 2 tumescenses, latter variable in development, disc slightly concave behind tumescences, anterior transverse depression well developed, collar well developed, prointercoxal process expanded distally; pronotal projections (Fig. 8) short; elytral asetiferous punctures usually small and concentrated in elytral basal half, usually striate near elytral base and near sutural margin, epipleural fold prominent, gradually narrowed to elytral apex, elytral anterior margin not carinate; metathoracic wing, wedge cell closed; metendosternite (Fig. 7) with furcal lamina, furcal anterior plate large; legs, tibiae with well-developed carina, which is less prominent in metatibiae, prothoracic femora capitate, mesothoracic and metathoracic femora gradually increasing in diameter to femoral apex, tibial spur formula 0-1-1, tarsal sole formula 4-4-4, tarsal formula 5-5-5, unguis without basal denticle. Abdomen. Pygidium transverse/

scutiform; posterior margin of female pygidium sometimes trilobed; male sternite VI elongated, slightly concave at distal margin, distal margin of sternite V often widely emarginate in males; aedeagus well sclerotized, phallobase bilobed, lobe length varies, phallobasic struts usually conjoin at base of phallobasic apodeme, latter rarely present, when present connected to phallobasic struts, phallobasic rod absent; phallic plates narrow, most often serrate to various degree; spicular plates very narrow, spicular apodemes fused in posterior ⅘, intraspicular plate narrow/transverse; ovipositor shorter than abdomen, dorsal lamina trilobed, ventral lamina bilobed, laminal rod present. Alimentary canal. Stomodaeum short, proventriculus with 4 primary and 4 secondary lobes, ventral primary and ventrolateral secondary folds reduced; ventricular papillae well defined; 6 cryptonephridial Malpighian tubules; proctodaeum long in females, short in males. Mesodermal male internal reproductive organs. (Fig. 15–18) Three pairs of accessory glands, medial and lateral glands often broad and recurved, posterior gland very short; testis multifollicular. Mesodermal female internal reproductive organs. (Fig. 19–20) Spermathecal capsule slightly sclerotized; spermathecal gland attached to middle of spermathecal capsule; bursa copulatrix saccular.

Distribution. From Panama to Argentina.

Key to Species of *Axina* Kirby

The preparation of this key to species was very difficult because of the paucity of variation in external morphology of *Axina* species. Many of these nocturnal insects are associated with tree bark and thus have evolved similar bark-like patterns on the elytral disc. In the key that follows, I have used convenient characteristics often involving color characteristics. Whenever possible, the reader should follow up key couplet results with dissections of male genitalia, for reliable species identifications. It is also important that the reader consult the "Variation" section of the species descriptions to recognize exceptions to key couplet descriptions.

The types of two species, *Axina cuneata* Santos and Filho and *A. undata* (Spinola), were not available for study. Thus, they are not included in the following key.

1. Elytral disc with fewer than 50 asetiferous punctures, punctures concentrated in elytral basal half proximal to sutural margin **2**
— Elytral disc with more than 50 asetiferous punctures, punctures usually extended posteriorly beyond elytral basal half **8**

2(1). Prothorax dark castaneous **3**
— Prothorax testaceous **4**

3(2). Each elytral middle with a broad obliquely positioned white fascia (Peru, Brazil) . . . . . ***Axina schenklingi* Opitz, new species (Fig. 88)**
— Elytral color pattern not as above; elytra with circular testaceous marking in basal ½ (Brazil) . . . . . ***Axina bifasciata* (Chevrolat) (Fig. 84)**

4(2). Elytral apical region dark brown or black **5**
— Elytral apical region testaceous **6**

5(4). Elytral basal ¼ black (Bolivia) . . . . . ***Axina oligocheia* Opitz, new species (Fig. 86)**
— Elytral basal ¼ mostly yellow (French Guiana) . . . . . ***Axina bella* Opitz, new species (Fig. 83)**

6(4). Each elytron with two narrow light brown fasciae, one at middle and one in preapical region; elytral base testaceous (Brazil, Paraguay) . . . . . ***Axina adelosa* Opitz, new species (Fig. 82)**
— Each elytron with three dark brown markings **7**

7(6). Elytral prepapical fascia rectangular (Brazil) . . . . . ***Axina parcepunctata* Schenkling (Fig. 87)**
— Elytral prepapical fascia quadrate (Brazil) . . . . . ***Axina macilenta* Opitz, new species (Fig. 85)**

8(1). Integument mostly dark brown; elytral color without sharply contrasting colors **9**
— Integument not mostly dark brown; elytral color with sharply contrasting colors **12**

9(8). Cranium black **10**
— Cranium not black **11**

10(9). Elytral apex black; large species up to 21 mm (Venezuela) . . ***Axina brunnea* Opitz, new species (Fig. 76)**
— Elytral apex testaceous; smaller species up to 11 mm (Brazil) . . . . . ***Axina longevittata* Pic (Fig. 77)**

11(9). Elytral disc with two faintly expressed yellow oblong lines, one short basal near sutural margin and one spanning elytral length at lateral angular deflection (Brazil) . . . . . ***Axina atmis* Opitz, new species (Fig. 74)**

— Elytral disc with faintly expressed brown fasciae (Brazil) . . . ***Axina bahia* Opitz, new species (Fig. 75)**

12(8). Elytral apex black **13**

— Elytral apex testaceous **18**

13(12). Elytra broadly testaceous near middle **14**

— Elytra black near middle **17**

14(13). Elytral basal region flavotestaceous (Bolivia) . . . . . ***Axina apicalis* Pic (Fig. 92)**

— Elytral basal region black **15**

15(14). Metafemoral distal limit black (Panama) . . . . . ***Axina heveli* Opitz, new species (Fig. 96)**

— Metafemoral distal ½ black **16**

16(15). Elytral apex subacuminate (Bolivia) . . . . . ***Axina acutipennis* Opitz, new species (Fig. 119)**

— Elytral apex obtuse (Bolivia, Brazil) . . . . . ***Axina nigrifrons* Schenkling (Fig. 111)**

17(13). Pronotal collar and elytral basal ⅓ testaceous (Brazil) . . . . . ***Axina pallidioccabus* Opitz, new species (Fig. 102)**

— Pronotal collar and elytral basal ⅓ black (Bolivia) . . . . . ***Axina equestris* (Schenkling) (Fig. 115)**

18(12). Body predominantly or entirely flavotestaceous; if bicolorous humerus with black punctiform marking **19**

— Body not predominantly flavotestaceous, elytra with variously positioned fascia **21**

19(18). Elytra unicolorous, testaceous (Bolivia) . . . . . ***Axina ochra* Opitz, new species (Fig. 112)**

— Elytra bicolorous **20**

20(19). Preapical elytral black marking punctiform (Bolivia, Brazil) . . . . ***Axina munda* Schenkling (Fig. 100)**

— Preapical elytral black marking oblong (Bolivia) . . . . . ***Axina vista* Opitz, new species (Fig. 110)**

21(18). Abdomen bicolorous, visible sternites I–III dark, IV–VI yellow **22**

— Abdomen unicolorous **26**

22 (21). Base/middle of pronotum with short black streak that extends from pronotum collar to middle depression **23**

— Pronotum without black streak **25**

23(22). Metatibiae testaceous in distal limits (Brazil) . . . . . ***Axina lateralis* Pic (Fig. 98)**

— Metatibiae dark in distal limits **24**

24(23). Elytral preapical brown fascia narrow/angular (Brazil) . . . . . ***Axina villa* Opitz, new species (Fig. 109)**

— Elytral preapical brown fascia broad/subquadrate (Brazil) . . ***Axina luzia* Opitz, new species (Fig. 99)**

25(22). Metatibiae testaceous in distal limits (Brazil) . . . . . ***Axina analis* Kirby (Fig. 113)**

— Metatibiae dark in distal limits (Argentina) . . . . . ***Axina pollex* Opitz, new species (Fig. 105)**

26(21). Middle of pronotum with dark streak **27**

— Middle of pronotum without black streak **28**

27(26). Black pronotum streak extends to pronotum anterior margin (Brazil) . . . . . ***Axina polycaula* Opitz, new species (Fig. 106)**

— Black pronotum streak extends from pronotum base to pronotum medial depression (Brazil) . . . . . ***Axina ordinis* Opitz, new species (Fig. 117)**

28(26). Elytra with clearly defined dark fasciae **29**

— Elytral dark markings angular, more defused **39**

29(28). Pronotum unicolorous, black or castaneous **30**

— Pronotum bicolorous, black and castaneous **37**

30(29). Pronotum black **31**
— Pronotum castaneous **34**

31(30). Elytron with testaceous spot between broad black fasciae (Brazil) . . . . . ***Axina proxima* (Chevrolat) (Fig. 107)**
— Elytral color pattern not as above **32**

32(31). Elytron mostly black, with two centrally located and conjoined testaceous maculae (Bolivia and Peru) . . . . . ***Axina diversesignata* Pic (Fig. 78)**
— Elytral color pattern not as above **33**

33(32). Elytron middle dark fascia traverses sutural margin (Brazil) . . . . . ***Axina latilinea* Opitz, new species (Fig. 90)**
— Elytron middle dark fascia does not traverse sutural margin (Brazil) . . . . . ***Axina furcula* Opitz, new species (Fig. 121)**

34(30). Cranium black (Brazil, Argentina) . . . . . ***Axina sexmaculata* Spinola (Fig. 123)**
— Cranium red-castaneous **35**

35(34). Midelytral black fascia traverses sutural margin (Bolivia) . . . . . ***Axina fortipes* Pic (Fig. 120)**
— Midelytral black fascia does not traverse sutural margin **36**

36(35). Midelytral fascia triangular, with posterior margin with indentations (Brazil) . . . . . ***Axina basalis* Schenkling (Fig. 89)**
— Midelytral fascia more linear, posterior margin not indented (Brazil, Argentina) . . . . . ***Axina spina* Opitz, new species (Fig. 124)**

37(29). Cranium castaneous; elytral basal 3/4 with two spheroid yellow maculae (Bolivia) . . . . . ***Axina phallospina* Opitz, new species (Fig. 91)**
— Cranium black **38**

38(37). Prothoracic femur unicolorous, testaceous (Bolivia, Peru, Brazil) . . . . . ***Axina fasciata* Kirsch (Fig. 95)**
— Prothoracic femur bicolorous, black and testaceous (Bolivia) . . . . . ***Axina megaspina* Opitz, new species (Fig. 122)**

39(28). Pronotum unicolorous, red-castaneous **40**
— Pronotum bicolorous, black and castaneous **41**

40(39). Basal ½ of mostly yellow elytron disc with brown X-marking (Brazil) . . . . . ***Axina chiasta* Opitz, new species (Fig. 94)**
— Elytron disc without X-marking, with angular brown fascia at middle (Brazil) . . . . . ***Axina rio* Opitz, new species (Fig. 108)**

41(39). Elytral disc without transverse middle fascia **42**
— Elytral disc with transverse, sometimes angular, middle fascia **44**

42(41). Basal ¾ of elytron disc with large yellow X-marking (Brazil) . . . . . ***Axina picta* Schenkling (Fig. 103)**
— Elytral disc without X-marking **43**

43(42). Elytral disc with longitudinal brown and testaceous streaks (Bolivia, Brazil) . . . . . ***Axina plagiata* Schenkling (Fig. 81)**
— Elytron mostly yellow, with brown asetiferous punctures randomly distributed throughout disc (Brazil) . . . . . ***Axina piperata* Opitz, new species (Fig. 104)**

44(41). Basal ½ of mostly brown elytra disc with large yellow circular marking (Brazil) . . . . . ***Axina centrimaculata* Schenkling (Fig. 93)**
— Elytral disc without circular marking **45**

45(44). Elytral interstitial spaces minutely cribrate **46**
— Elytral interstitial spaces smooth and very glossy **47**

46(45). Elytral asetiferous punctures substriate, large specimens (up to 20 mm) (Bolivia, Argentina) . . . . . ***Axina trinalis* Opitz, new species (Fig. 118)**

— Elytral asetiferous punctures scattered throughout disc (Brazil) . . . . . ***Axina klisis* Opitz, new species (Fig. 97)**

47(45). Pterothorax light castaneous to testaceous (Brazil) . . . . . ***Axina minas* Opitz, new species (Fig. 101)**

— Pterothorax dark castaneous to black **48**

48(47). Width of frons wider than length of antennal pedicel **49**

— Width of frons about as long as length of antennal pedicel **50**

49(48). Elytral basal castaneous marking traverses entire basal margin (Brazil) . . . . . ***Axina lobispinula* Opitz, new species (Fig. 79)**

— Elytral basal castaneous marking restricted to humeral angle (Brazil) . . . . . ***Axina orcastomata* Opitz, new species (Fig. 80)**

50(48). Edge of phallic plate serrate (Fig. 26); female pygidial distal margin with stalked plate (Fig. 60) (Brazil) . . . . . ***Axina ignota* Opitz, new species (Fig. 116)**

— Edge of phallic plate not serrate (Fig. 45); female pygidial posterior margin trilobed (Fig. 58) (Brazil) . . . . . ***Axina conspicua* Schenkling (Fig. 114)**

Descriptions of *Axina* Species

bahia species group

There are four species in this group whose members show a brown elytral disc. Geographically, the group is known from Colombia, Venezuela, and Brazil.

Axina atmis Opitz, new species

Figures 15, 21, 69, 74.

Type material. Holotype: Male. Type locality: Brazil: Bahia, Encruzilhada, ?-XI-1974, M. Alvarenga (FSCA).

Diagnosis. This is a slender species. The holotype is four times longer than broad. This characteristic will distinguish the species from other *Axina* species with a partial black pronotal midline.

Description. *Size*. Length 11.0 mm; width 2.3 mm. *Form*. As in Fig. 74. *Color*. Cranium castaneous; antenna testaceous; prothorax bicolorous, mostly castaneous, pronotum paler at middle and on pronotal arch; mesothorax bicolorous, mesosternum yellow, mesepisternum brown; metathorax and abdomen flavotestaceous; elytra bicolorous, mostly brown with lighter streaks of yellow; legs mostly brown, base of femora and tarsi testaceous. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 45/15. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, disc narrowly concave near middle; PW/PL 100/130; elytra, asetiferous punctures striate, punctures extend posteriorly to elytral ½, width of interstitial spaces variable; EL/EW 450/70. *Abdomen*. Aedeagus (Fig. 21), phallobasic lobes short, nearly contiguous; phallic plate not serrate; phallobasic apodeme well developed.

Distribution (for map see Fig. 69). This species is known from Brazil.

Etymology. The specific epithet, *atmis*, is a Greek name with a meaning of "vapor". I refer to the cloudy appearance of the elytral disc.

Axina bahia Opitz, new species

Figures 22, 69, 75.

Type material. Holotype. Male. Type locality: Brazil: Bahia, Encruzilhada, ?-XI-1972, M. Alvarenga (FSCA). **Paratypes.** 8 specimens. **Brazil: Estado do Bahia**, Encruzilhada, ?-XI-1974, M. Alvarenga (WOPC, 1); Cachimbo, ?-?-1890, Ch. Pujol (WOPC, 2; MNHN, 2); Villa Victoria, Cachimbo, ?-?-1890, Ch. Pujol (MCNZ, 1; MNHN, 1); **Estado do Pernambuco**, Serra de Communaty, 3-XII-1893 (MNHN, 2).

Diagnosis. The body is mostly castaneous with the elytral disc showing 2 broad testaceous regions, one at basal ⅓ and one behind middle. These characteristics will distinguish the members of this species from congeners.

Description. *Size*. Length 8.0 mm; width 1.8 mm. *Form*. As in Fig. 75. *Color*. Testaceous, except each elytron with two faintly visible testaceous markings, one at basal ⅓, one in postmedial position. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 38/13. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 85/123; elytra, asetiferous punctures striate, striae extend posteriorly slightly beyond elytron middle; EL/EW 345/60. *Abdomen*. Aedeagus (Fig. 22), phallobasic lobes short, slightly diverging; phallic plates serrate near apex; phallobasic apodeme present.

Variation. *Size*. Length 8.5–11.0 mm; width 2.0–2.9 mm. Some specimens from Cachimbo show a darker castaneous color, particularly near the basal region of the elytra.

Natural history. Specimens were collected from Brazil during November and December.

Distribution (for map see Fig. 69). This species occurs in Brazil.

Etymology. The specific epithet, *bahia*, is a noun in apposition and refers to the type locality.

Axina brunnea Opitz, new species

Figures 23, 69, 76.

Type material. Holotype. Male. Type locality: Venezuela (Mocquerys) (MNHN). **Paratypes.** 2 specimens. **Colombia:** San Juan de Cordova Cienaga, ?-?-1909, Mayeul Grisol (MNHN, 1). **Venezuela:** Maracaibo, ?-?-1902, E. Poirier (WOPC, 1).

Diagnosis. The body is entirely brown. This characteristic will distinguish the members of this species from congeners.

Description. *Size*. Length 13.0 mm; width 3.0 mm. *Form*. As in Fig. 76. *Color*. Brown. *Head*. Cranium coarsely punctate**,** frons narrower than length of antennal pedicel; EW/FW 75/7. *Thorax*. Pronotum coarsely punctate, with 2 tumescences, deeply concave at middle; PW/PL 140/170; elytra, asetiferous punctures striate, striae extend posteriorly nearly to elytral apex; EL/EW 520/105. *Abdomen*. Aedeagus (Fig. 23) spatulate, phallobasic lobes short, slightly diverging; phallic plates not serrate; phallobasic apodeme present.

Variation. *Size*. Length 13.0–21.0 mm; width 3.0–5.0 mm. Other than body size, the available specimens are quite homogeneous.

Distribution (for map see Fig. 69). This species is known from Colombia and Venezuela.

Etymology. The specific epithet, *brunnea*, is a Latin adjective with a meaning of "brown". I refer to the color of these beetles.

Axina longevittata Pic, 1948

Figures 69, 77.

Axina longevittata Pic, 1948: 132. **Holotype.** Gender not known. Type locality: Brésil, Goyas (MNHN). Corporaal 1950: 98.

Diagnosis. The predominantly dark castaneous coloration, with faintly visible lighter streaks on the elytral disc, of the members of this species will distinguish them from congeners.

Redescription. *Size*. Length 9.0 mm; width 2.2 mm. *Form*. As in Fig. 77. *Color*. Dark castaneous, except elytron disc with faintly visible paler vitta and elytral apex testaceous. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 50/8. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 95/30; elytra, asetiferous punctures substriate, punctures extend to elytral apical ½, width of interstitial spaces variable; EL/EW 420/80.

Variation. *Size*. Length 9.0–11.0 mm; width 2.2–2.8 mm. Except for body size, the available specimens are quite homogeneous.

Distribution (for map see Fig. 69). In addition to the holotype, I examined 5 specimens from: **Brazil: Estado do Goías**, Rio Verde, ?-?-1908, G. A. Baer; Mineiro, ?-?-1912, H. Donkier; Jatai, collection date and collector not noted. **Paraguay:** No other information available. Specimens are deposited in: MNHN and WOPC.

Notes. I examined the holotype, but the description is based on a homotype specimen.

plagiata species group

The members of this species group show a glossy luster on the elytral disc. There are four species in this group whose geographical distribution involves Bolivia, Peru, Brazil, and Argentina.

Axina diversesignata Pic, 1946

Figures 40, 69, 78.

Axina diversesignata Pic, 1946: 15. **Lectotype**. Gender not known. **Here designated**. Type locality: Brésil (MNHN). Corporaal 1950: 98. There is no indication regarding how many specimens were available to Pic when he made his description, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. There are two somewhat spheroid, broadly connected, testaceous maculae in the center of the elytra. This characteristic will distinguish the members of this species from congeners.

Redescription. *Size:* Length 15.0 mm; width 4.0 mm. *Form*. As in Fig. 78. *Color*. Forebody, antennae, pterothorax black; elytra bicolorous, mostly black, with 2 somewhat spheroid, broadly connected, testaceous maculae in center of disc, apical 1/5 testaceous; legs bicolorous, femora and tibiae black, tarsi brown; abdomen bicolorous, visible basal 3 sternites black, visible distal apical 3 sternites yellow. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 65/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 150/205; elytra, asetiferous punctures striate, punctures extend slightly beyond elytron middle, width of interstitial spaces variable; EL/EW 600/130. *Abdomen*. Aedeagus (Fig. 40), phallobasic lobes slightly curvate apically; phallic plates not serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 10.5–15.0 mm; width 2.2–4.0 mm. The centrally located elytral maculae vary slightly in shape.

Natural history. Specimens were collected in Bolivia during November, December, and March, in Peru during May, and in Brazil during March and November.

Distribution (for map see Fig. 69)**.** In addition to the lectotype, I examined 9 specimens from: **Bolivia: Departamento de Santa Cruz**, Potrerillos del Guenda, Snake Farm, 30-XI-3-XII-2012, Wappes & Skillman; 3.7 km SSE Buena Vista, Hotel Flora & Fauna, 5-15-XI-2001, tropical transition forest, M. C. Thomas & B. K. Dozier; Provincia Sara, ?-III-1913, Steinbach. **Peru: Provincia San Martin**, Tarapoto, ?-V-1886, M. de Mathan. **Brazil: Estado do Pará**, Jacareacanga, ?-X-1969, F. R. Barbosa; **Estado do Amazonas**, Tarapoto, ?-?-1885, M. de Mathan; Reserva Ducke, 26 km NE Manaus, ?-III-1995, Malaise trap, Barbosa; Specimens are deposited in: ACMT, BMNH, CMNH, CUICIC, FMNH, FSCA, MNHN, and WOPC.

Axina lobispinula Opitz, new species

Figures 24, 69, 79.

Type material. Holotype. Male. Type locality: Brazil: Bahia, Encruzilhada, ?-XI-1974, 960 m, M. Alvarenga (FSCA). **Paratypes.** 4 specimens. **Brazil: Estado do Minas Gerais**, Pedra Azul, ?-XI-1971, F. M. Oliveira (MCNZ, 1; WOPC, 1); *idem*, ?-XII-1970, F. M. Oliveira (CASC, 1: WFBM, 1).

Diagnosis. In the members of this species, the elytral basal castaneous marking traverses the entire basal margin. This characteristic will distinguish the members of this species from superficially similar specimens of *A. orcastomata*, in which the castaneous marking in question is restricted to the humeral angle.

Description. *Size*. Length 9.0 mm; width 2.0 mm. *Form*. As in Fig. 79. *Color*. Cranium castaneous; antenna testaceous; prothorax bicolorous, venter and pronotal sides dark castaneous, pronotum middle light castaneous; mesothorax and metathorax dark castaneous; elytra bicolorous, mostly testaceous, epipleural margin brown, brown region extends medially along basal margin, at middle, and posteriorly in area before apex, posterior brown making narrowly extends anteriorly and posteriorly along sutural margin; legs mostly castaneous, basal area of femora and tarsi testaceous; abdomen testaceous. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 40/20. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 105/130; elytra, asetiferous punctures subseriate, punctures extend slightly beyond elytral ½,

width of interstitial spaces variable; EL/EW 380/80. *Abdomen*. Aedeagus (Fig. 24), phallobasic lobes with preapical spine; edges of phallic plates serrate near phallic apex; phallobasic apodeme abbreviated.

Natural history. Specimens were collected during November and December, one at 960 m.

Distribution (for map see Fig. 69)**.** This species is known from Brazil.

Etymology. The specific epithet, *lobispinula*, is a Latin compound name that stems from *lobi* (= lobed) and *spinula* (= spine). I refer to the spine near the apex of the phallobasic lobes.

Axina orcastomata Opitz, new species

Figures 41, 69, 80.

Type material. Holotype. Male. Type locality: BOLIVIA: Santa Cruz, Potrerillos del Guenda, 400 m, 6-8/XII/2011, Morris & Wappes (FSCA). **Paratypes.** 17 specimens. **Bolivia: Departamento de Santa Cruz**, Potrerillos del Guenda, 6-8/XII/2011, 400 m, Morris & Wappes (RFMC, 2); 3.7 km SSE Buena Vista, Hotel Flora & Fauna, 405 m, 5-15-XI-2011, M. C. Thomas & B. K. Dozier, tropical transitional forest (FSCA, 1). **Brazil: Estado do Mato Grosso**, ?-?-1886, P. Germain (AMNH, 1: BMNH,1; CMNH, 1; MNHN, 5; WOPC, 2); *idem*, ?-?-1885, P. Germain (USNM, 1); **Estado do Bahia**, Villa Victoria, ?-?-1890, Ch. Pujol (MNHN, 1); **Estado do Minas Gerais**, Pedra Azul, ?-XI-1971, F. M. Oliveira (CUIC, 1); *idem*, ?-XII-1970, F. M. Oliveira (SDEI, 1).

Diagnosis. In members of this species, the elytral basal castaneous marking is restricted to the humeral angle. This characteristic will distinguish the members of this species from superficially similar specimens of *A. lobispinula*, in which the castaneous making in question traverses the entire length of the elytral basal margin.

Description. *Size*. Length 9.2 mm; width 2.2 mm. *Form*. As in Fig. 80. *Color*. Cranium bicolorous, frons and epicranium light castaneous, remainder dark castaneous; antenna testaceous; thorax black, except center of pronotum disc and pronotum arch light castaneous; elytra bicolorous, mostly flavotestaceous, humerus and epipleural margin widely dark brown, dark brown region extended medially near apex and near elytron middle, preapical brown marking extends towards base near sutural margin; legs bicolorous, distal ½ of femora and proximal ½ of tibiae black, remainder of legs testaceous; abdomen brown. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 45/18. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, one narrow linear short tumescence behind middle, disc concave near middle; PW/PL 100/150; elytra, asetiferous punctures scattered, punctures extend posteriorly to elytral 3/4, interstitial spaces very wide; EL/EW 410/60. *Abdomen*. Female visible abdominal sternite V emarginate; female pygidium with recurved flap; aedeagus (Fig. 41), phallobase abruptly narrowed near base of phallobasic lobes; phallobasic lobes long, narrow; phallic plates not serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 8.0–12.0 mm; width 2.0–2.5 mm. Except for body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected in Bolivia during November and December, at altitudes that range from 400–405 m. During the same months these beetles were captured in Brazil at 800 m.

Distribution (for map see Fig. 69)**.** This species is known from Bolivia and Brazil.

Etymology. The specific epithet, *orcastomata*, is a compound name that stems from the Latin *orca* (= whale) and the Greek *stoma* (= mouth). I refer to the peculiar construction of the distal 1/3 of the phallobase/phallobasic lobes.

Axina plagiata Schenkling, 1900

Figures 42, 69, 81.

Axina plagiata Schenkling, 1900: 390. **Lectotype**. Male. **Here designated**. Type locality: Goyas, Brasil, Donckier (SDEI). Paralectotypes: 4 specimens. **Brazil: Estado do Goiás**, Collection date not noted, Donckier (FMNH, 1; SDEI, 2*); idem*, Jatahy (SDEI, 1). Corporaal 1950: 98. There is indication that Schenkling examined more than one specimen in his description of this species, but he did not select a holotype, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. The brown streaks on the elytral disc will distinguish the members of this species from congeners.

Redescription. *Size*. Length 13.0 mm; width 3.2 mm. *Form***.** As in Fig. 81. *Color*. Cranium and pterothorax castaneous; antenna testaceous; prothorax bicolorous, venter and pronotal sides black, pronotal middle disc castaneous; pterothorax black; elytra bicolorous, admixture of brown and testaceous streaks; legs bicolorous, proximal ⅓ of femora and tarsi castaneous, rest black; abdomen flavotestaceous. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 75/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, narrowly concave at middle; PW/PL 130/175; elytra, asetiferous punctures substriate, punctures extend to slightly beyond elytral middle, interstitial spaces very wide in some places, narrow in others; EL/EW 580/100. *Abdomen*. Female pygidium entire along distal margin; aedeagus (Fig. 42), phallobasic lobes very short, curvate; phallic plates not serrate; phallobasic apodeme well developed.

Variation. *Size*. Length 8.5–14.0 mm; width 2.0–4.0 mm. The brown streaks on the elytron disc vary in their prominence.

Natural history. Specimens were collected in Bolivia during November through March, some at 350 to 534 m. Other specimens were collected in Brazil, during May, October through December, some at 400 m., and others from Argentina during March.

Distribution (for map see Fig. 69)**.** In addition to the lectotype and paralectotypes, I examined 87 specimens from: **Bolivia: Departamento de Santa Cruz**, 8 km NW Terebinto, 1-XII-2012, Javier Chaco; 4-6 km SE Terebinto, 21-XI-2013, Skillman & Wappes; *idem*, 2-9-I-2004, Robin Clarke; 3.7 km SSE Buena Vista, Hotel Flora & Fauna, 15-22-XI-2001, 430 m, blacklight in tropical transition forest, B. K. Dozier; *idem*, 5-15-XI-2001, 405 m, M. C. Thomas & B. K. Dozier; 4k SSE Buena Vista, Hotel Flora & Fauna, 22-25-XI-2013, 350-400 m, Wappes & Skillman; 3 km N Brazilio, 27-II-8-III-1999, 1750 feet, M. Erwin & F. Parker. **Brazil: Estado do Bahia**, Santo Antônio da Barra, ?-?-1890, Ch. Pujol; Barro Preto, collection date not noted, Ch. Pujol; Chapada, ?-X-?, collector not noted; *idem*, ?-V-?, collector not noted; **Estado do São Paulo**, Pereira Barreto, metropolitan area, ?-XII-1999, S. R. S. Silva; Regente Feijo, ?-X-?, B. Pohl. **Estado do Mato Grosso**, Fazenda Santa Luzia, Três Lagoas, ?-X-XI-1977, E. P. Teixeiratol; **Estado do Minas Gerais**, Sertão de Diamantina, Fazenda das Melacias, 10-XI-1902, E. Gounelle; Pedra Azul, ?-XI-1970, F. M. Oliveira; **Estado do Espírito Santo**, Linhares, ?-IX-1973, M. Alvarenga; **Estado do Santa Catarina**, Nova Teutonia, ?-I-1954, 400 m, Fritz Plaumann; *idem*, ?-XI-1953, 400 m, Fritz Plaumann; *idem*, ?-XII-1953, 400 m, Fritz Plaumann; *idem*, 1-X-1954, 400 m, Fritz Plaumann; *idem*, **Estado do Goías**, Jatai, ?-XI-1972, F. M. Oliveira; *idem*, ?-XI-1972, F. M. Oliveira; Minaçú, Serra de Mesa, 9-20-XII-1996, A. Franceschini; Trindade, collection date not noted, Ch. Pujol; Mineiro, ?-?-1912, H. Donckier. **Argentina:** Yulio, 14-III-1957, F. Moonros. Specimens are deposited in: ACMT, AMNH, BMNH, CASC, CMNC, CMNH, CUIC, FMNH, FSCA, FWSC, MCNZ, MNHN, SDEI, USNM, WFBM, and WOPC.

bella species group

There are seven species in this group, whose members are characterized by showing fewer than 50 asetiferous punctures on the elytral disc. Most of the punctures occur in the basal half of the elytra near the sutural margin. The combined geographical distribution of this species group involves French Guiana, Bolivia, Peru, Brazil, and Paraguay.

Axina adelosa Opitz, new species

Figures 43, 69, 82.

Type material. Holotype. Male. Type locality: São Paulo (Cantareira), Brazil, Feb, B. Pohl (WFBM). **Paratypes.** 5 specimens. **Brazil: Estado do Bahia**, Villa Victoria, ?-?-1890, Ch. Pujol (MNHN, 1; WOPC, 1); Itapetinga, ?-XI-1967, F. M. Oliveira (WOPC, 1); **Estado do Rio de Janeiro**, Petropolis, collection date not noted, F. Sahlberg (SDEI, 1). **Paraguay:** ?-?-188?, Drake (SDEI, 1).

Diagnosis. There are two faintly visible brown fasciae on the elytral disc. This characteristic will distinguish the members of this species from congeners.

Description. *Size***.** Length 9.0 mm; width 2.2 mm. *Form*. As in Fig. 82. *Color*. Testaceous, except each elytron with 3 faintly visible light brown markings, one at humeral angle, one at elytron middle, and one preapical. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 45/15. *Thorax***.** Pronotum

finely punctate, with 2 tumescences, concave at middle; PW/PL 100/140; elytra with few asetiferous punctures concentrated in basal half near sutural margin, one stria adjacent to sutural margin extended from elytron middle to elytral base; EL/EW 385/70. *Abdomen*. Aedeagus (Fig. 43), phallobasic lobes long, widely separated; phallic plates with one spine at apical 1/3; phallobasic apodeme abbreviated.

Variation. *Size*. Length 9.0–10.0 mm; width 2.2–2.3 mm. Except for body size, the available specimens are quite homogeneous.

Natural history. The holotype was collected in Brazil during February and November.

Distribution (for map see Fig. 69)**.** This species occurs in Brazil and Paraguay.

Etymology. The specific epithet, *adelosa*, is a Greek adjective that stems from *adelos* (= obscure). I refer to the dimly visible light brown markings on the elytral disc.

Axina bella Opitz, new species

Figures 25, 69, 83.

Type material. Holotype. Male. Type locality: FRENCH GUIANA, Kourou, Savane Matiti, 5°4′59″N 52°37′0.12″W, 2013, Piège Vitre, J. L. Giuglaris (FSCA).

Diagnosis. The very attractive color pattern of the elytra as depicted in Fig. 83 will distinguish the members of this species from congeners.

Description. *Size*. Length 12.0 mm; width 3.0 mm. *Form*. As in Fig. 83. *Color*. Cranium castaneous; antenna testaceous; prothorax bicolorous, venter and pronotal sides black; pronotal middle widely castaneous; pterothorax and legs black; elytra tricolorous, mostly yellow, humerus and epipleural margin widely black, black region extends broadly mesally towards sutural margin at elytral middle and at preapical region, black preapical region extends to sutural margin in form of fascia, apical region castaneous, castaneous region blends into more basal black fascia; abdomen testaceous. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 60/13. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 110/155; elytra, few asetiferous punctures concentrated in elytral basal ½ proximal to sutural margin, width of interstitial spaces variable; EL/EW 475/90. *Abdomen*. Aedeagus (Fig. 25), phallobasic lobes very short, narrowly extended, contiguous; edge of phallic plates serrate; phallobasic apodeme slightly lengthened.

Distribution (for map see Fig. 69)**.** This species is known from French Guiana.

Etymology. The specific epithet, *bella*, is a Latin adjective that stems from *bellus* (= beauty). I refer to the beautiful coloration of the dorsum of this beetle.

Axina bifasciata (Chevrolat), 1876

Figures 69, 84.

Priocera bifasciata Chevrolat, 1876: 9. **Holotype.** Female. Type locality: Brasilia, Santa Rita, Augusto, J. Sahlberg (MNHN). Corporaal 1950: 98. Dos Santos and Filho 1982: 44.

Diagnosis. The round testaceous marking on the basal ½ of the elytral disc will distinguish the members of this species from congeners.

Redescription. *Size*. Length 11.0 mm; width 2.8 mm. *Form*. As in Fig. 84. *Color*. Forebody, pterothorax, and legs dark castaneous; antenna testaceous; elytra bicolorous, disc mostly castaneous, large round testaceous marking in elytral basal ½, apical ⅓ testaceous; abdomen flavotestaceous. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 55/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, narrowly concave at middle; PW/PL 120/165; elytra with asetiferous punctures concentrated in basal half near sutural margin, interstitial spaces very wide; EL/EW 480/85. *Abdomen*. Aedeagus, phallobasic lobes very short, contiguous; edge of phallic plates serrate; phallobasic apodeme slightly lengthened.

Variation. *Size*. Length 10.0–13.0 mm; width 2.2–3.5 mm. Other than body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected in Brazil during June, November, and December, one at 960 m.

Distribution (for map see Fig. 69)**.** In addition to the holotype, I examined 19 specimens from: **Brazil: Estado do Rio de Janeiro**, Rio de Janeiro, ?-XI- ?. collector not noted; **Estado do Bahia**, ?-VI-1972, 960 m, Moacir Alvarenga; Villa Victoria, ?-?-1890, Ch. Pujol; **Estado do Minas Gerais**, Pedra Azul, ?-XII-1970, F. M. Oliveira. Specimens are deposited in: AMNH, BMNH, CASC, CMNH, CUIC, FSCA, MCNZ, MNHN, WFBM, and WOPC.

Notes. The holotype was examined, but the description is based on a homotype specimen.

Axina macilenta Opitz, new species

Figures 70, 85.

Type material. Holotype. Female. Type locality: Mineiro Goyaz, BRÉSIL. A second label reads: 202. A third label reads: MUSEUM PARIS, BRÉSIL, GOYAS: MINEIRO, H. DONCKIER, 1912 (MNHN).

Diagnosis. The atypical narrow body form, as depicted in Fig. 85, will distinguish the members of this species from congeners.

Description. *Size*. Length 12.0 mm; width 2.2 mm. *Form*. As in Fig. 85. *Color*. Cranium castaneous; antenna testaceous; thorax, legs, and abdomen flavotestaceous; elytra bicolorous, mostly flavotestaceous, each elytron with basal and subapical broad dark brown fascia. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 50/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 110/140; elytra, few asetiferous punctures concentrated in middle of disc proximal to sutural margin EL/EW 500/80. *Abdomen*. Pygidium scutiform.

Distribution (for map see Fig. 70). This species is known from Brazil.

Etymology. The specific epithet, *macilenta*, is a Latin adjective derived from *macer* (= thin). I refer to the narrow body form of this beetle.

Axina oligocheia Opitz, new species

Figures 70, 86.

Type material. Holotype. Male. Type locality: BOLIVIA: Santa Cruz, Buena Vista, F & F Hotel, 21-25/XI/03, Morris, Nearns, Wappes (FSCA). **Paratypes.** 18 specimens. **Bolivia: Departamento de Santa Cruz**, Potrerillos del Guenda, 6-8-XII-2011, 400 m, Morris & Wappes (RFMC, 4; CUIC, 1); *idem*, 16-22-X-2006, Wappes, Nearns & Eya (ACMT, 1; WOPC, 1); *idem*, 6-8-XII-2011, Wappes, Lingafelter, Morris & Woodley (ACMT, 1); Buena Vista, Flora & Fauna Hotel, 27-31-X-2002, Morris & Wappes (WOPC, 1); *idem*, 5-15-XI-2001, 405 m, M. C. Thomas (FSCA, 1); 3.7 km SSE Buena Vista, Hotel Flora & Fauna, 14-28-X-2000, 430 m, B. K. Dozier (FSCA, 1); *idem*, 21-24-XI-2003, J. Wappes, Morris & Nearns (ACMT, 1); *idem*, 5-15-XI-2001, M. C. Thomas & B. K. Dozier (FSCA, 1); El Refugio, Los Volcanes, 18-24-X-2014, 3,363 feet, Morris & Wappes (RFMC, 1). **Peru: Provincia San Martin**, Tarapoto, ?-V-1886, M. de Mathan (MNHN, 1). **Brazil: Estado do Mato Grosso**, Sinop, ?-X-1974, M. Alvarenga (MCNZ, 1); Mato Grosso, ?-?-1886, P. Germain (MNHN, 1); **Estado do Minas Gerais**, ?-?-1886, P. Germain (AMNH, 1).

Diagnosis. From superficially similar specimens of *Axina nigrifrons*, *A. oligocheia* beetles differ by showing a completely black epicranium.

Description. *Size*. Length 9.0 mm; width 2.3 mm. *Form*. As in Fig. 86. *Color*. Cranium bicolorous, frons and epicranium black, remainder flavotestaceous; antenna testaceous; thorax and abdomen flavotestaceous; elytra bicolorous, basal ¼ and apical ¼ black, remainder flavotestaceous; legs bicolorous, prothoracic legs flavotestaceous, mesothoracic and metathoracic femora and tibiae mostly black; tarsi testaceous. *Head*. Cranium finely punctate, frons slightly narrower than length of antennal pedicel; EW/FW 50/5. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 100/123; elytra, few asetiferous punctures, not striate, punctures mostly present in elytral basal ½, width of interstitial spaces variable; EL/EW 410/85. *Abdomen*. Aedeagus, phallobasic lobes spatulate, widely separated; edge of phallic plates serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 8.5–12.0 mm; width 2.0–3.0 mm. Other than body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected in Bolivia during October through December, some at altitudes that range from 400–1,025 m. In Peru, they were collected during May, and in Brazil during October.

Distribution (for map see Fig. 70). This species is known from Bolivia, Peru, and Brazil.

Etymology. The specific epithet, *oligocheia*, is a Greek compound name that stems from *oligo* (= few) and *cheia* (= hole in ground), with reference to the comparatively few asetiferous punctures on the elytral disc.

Axina parcepunctata Schenkling, 1900

Figures 19, 70, 87.

Axina parcepunctata Schenkling, 1900: 388. **Lectotype**. Male. **Here designated**. Type locality: Goyaz, Bras., Donckier (Brasil) (SDEI). Paralectotypes: 4 specimens. **Brazil; Estado do Goias**, Collection date not noted, Donckier (FMNH, 1; SDEI, 3). Corporaal 1950: 98. There is indication that Schenkling examined more than one specimen in his description of this species, but he did not select a holotype, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. There are only a few asetiferous punctures at the middle of the elytral disc near the sutural margin. This characteristic will distinguish the members of this species from congeners.

Redescription. *Size*. Length 10.8 mm; width 2.8 mm. *Form*. As in Fig. 87. *Color*. Cranium dark castaneous; antenna testaceous; prothorax and pterothorax testaceous; elytra bicolorous, disc mostly flavotestaceous, each elytron with 2 brown fasciae, one faintly visible at elytron middle and one at elytral subapex; legs testaceous, distal half of femora and tibiae slightly darker; abdomen testaceous. *Head*. Cranium finely punctate, frons slightly narrower than length of antennal pedicel; EW/FW 55/7. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 120/135; elytra with few asetiferous punctures concentrated in basal half near sutural margin; EL/EW 500/100. *Abdomen*. Aedeagus, phallobasic lobes diverge slightly near apex; phallic plates very serrate near phallic apex; phallobasic apodeme abbreviated.

Variation. *Size*. Length 8.0–14.0 mm; width 2.0–3.8 mm. The brown transverse fasciae on the elytral disc may only be faintly visible or absent. The elytral base may be completely testaceous.

Natural history. Specimens were collected in Brazil during May and October, one at 960 m. **Distribution** (for map see Fig. 70)**.** In addition to the lectotype and paralectotypes, I examined 32 specimens from: Brazil: **Estado do Rio de Janeiro**, Rio de Janeiro, ?-X-?. collector not noted; Corcovado, 14-V-1912, G. E. Briant; **Estado do São Paulo**, Regente Feijo, ?-X-1945; Villa Victoria, ?-?-1890, Ch. Pujol; **Estado do Goiás**, Mineiro Goyas, collection date and collector not noted; Rio Verde, ?-?-1908, G. A. Baer; Jatai, ?-XI-1972, F. M. Oliveira. Specimens are deposited in: AMNH, BMNH, CASC, CMNH, CUIC, FMNH, FSCA, MCNZ, MNHN, SDEI, WFBM, and WOPC.

Axina schenklingi Opitz, new species

Figures 37, 70, 88.

Type material. Holotype. Male. Type locality: Amazon, Bates (Brazil) (BMNH). **Paratype.** One specimen. **Peru: Provincia de Tambopata**, Madre de Dios, Rio Tambopata Res., 30 km SW Puerto Maldonado, 12-XI-1983, 290 m, T. L. Erwin (USNM).

Diagnosis. The color pattern on the elytra as depicted in Fig. 88 will distinguish the members of this species from congeners.

Description. *Size*. Length 8.0 mm; width 1.6 mm. *Form*. As in Fig. 88. *Color*. Cranium, thorax, and legs castaneous; antenna testaceous; prothorax bicolorous, venter and pronotum sides black; pronotum middle widely castaneous; pterothorax and legs black; elytra tricolorous, basal ½ mostly dark brown, each elytron with subquadrate white macula, apical ½ mostly yellow, with broad obliquely positions white fascia, latter reaches sutural margin; abdomen brown. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 40/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 90/120; elytra, few asetiferous punctures concentrated in elytral basal ½ proximal to sutural margin, width of interstitial spaces variable; EL/EW 346/65. *Abdomen*. Aedeagus (Fig. 37), phallobasic lobes very short, contiguous; edge of phallic plates serrate; phallobasic apodeme slightly lengthened.

Variation. *Size*. Length 8.0–12.0 mm; width 1.6–3.0 mm. The elytra of the paratype show a narrow black line behind the white obliquely positioned fascia.

Natural history. The specimen from Peru was collected during November, by fogging tree canopy, at 290 m.

Distribution (for map see Fig. 70)**.** This species is known from Peru and Brazil.

Etymology. The specific epithet, *schenklingi*, is a patronymic that honors Sigmund Schenkling, an icon in historical cleridology.

basalis species group

There are three species in this group whose female members show the distal margin of the pygidium shallowly projected at the middle. The distribution of the species of this group involves Bolivia and Brazil.

Axina basalis Schenkling, 1900

Figures 50, 57, 70, 89.

Axina basalis Schenkling, 1900: 389. **Lectotype**. Female. **Here designated**. Type locality: Goyas, Bras, Donckier (Brasil) (SDEI). Paralectotypes. 2 specimens. **Brazil: Estado do Goiás**, collection date not noted, Donckier (BMNH, 1; SDEI, 1). Corporaal 1950: 98. There is indication that Schenkling examined more than one specimen in his description of this species, but he did not select a holotype, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. In the members of this species the midelytral fascia is triangular with the posterior margin of the fascia showing indentations. These characteristics will distinguish the members of this species from superficially similar specimens of *A. spina*, in which the posterior margin of the midelytral fascia in entire.

Redescription. *Size*. Length 13.0 mm; width 2.9 mm. *Form*. As in Fig. 89. *Color*. Cranium, thorax, and legs castaneous; antenna testaceous; elytra bicolorous, mostly flavotestaceous, with 3 transverse castaneous fasciae, one at base, one at middle, and one preapical. *Head***.** Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 60/12. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 130/175; elytra, asetiferous punctures substriate, punctures extend to elytral ½, width of interstitial spaces variable; EL/EW 550/110. *Abdomen*. Female pygidium slightly tapered to a blunt point; female visible abdominal sternite VI abruptly narrowed near posterior margin (Fig. 57); aedeagus (Fig. 50), phallobasic lobes uncinate, long, widely separated; phallic plates serrate on both margins; phallobasic apodeme abbreviated.

Variation. *Size*. Length 9.5–14.0 mm; width 2.3–3.9 mm. The castaneous transverse fasciae on the elytron disc vary in prominence.

Natural history. Specimens were collected in Bolivia during November and from Brazil during November through February, one specimen was captured with an ethanol baited flight intercept trap set in a stand of rose gum [*Eucalyptus grandis* W. Hillex Maiden (Myrtaceae)]. One specimen was collected from Brazil at 800 m.

Distribution (for map see Fig. 70)**.** In addition to the lectotype and paralectotypes, I examined 44 specimens from: **Bolivia: Departamento de Santa Cruz**, 4-6 km SSE Buena Vista, Hotel Flora & Fauna, 1-8-XI-2002, J. E. Wappes. **Brazil: Estado do Goías**, Jatai, collection date and collector not noted; Trindade, collection date not noted, Ch. Pujol; Rio Verde, ?-?-1908, G. A. Baer; Minacu, Serra da Mesa, 9-20-XII-1996, A. Franceschini; **Estado do São Paulo**, Lencóis Paulista Duratex S. A., 8-XII-2006, sulcatol-ethanol baited multiple funnel FIT, *Eucalyptus grandis* stand, C. A. H. Flechtmann; Rio Claro, ?-II-1967, collector not noted; **Estado do Mato Grosso do Sul**, Três Lagoas International Paper, Horto Rio Verde, 28-XII-1993, ethanol baited FIT, cerrado fragment, C. A. H. Flechtmann; Barrado Tapira-XI-?, collector not noted; **Estado do Tocantins**, Palmas, Sa do Lageado, Fazenda Céu, ?-XI-1992, MCN-MZSP; **Estado do Pará**, Carajás, collection day and collector not noted; **Estado do Mato Grosso**, Rio Caraguatá, 17-I-1954, Fritz Plaumann; **Estado do Minas Gerais**, Mar de Espanha, 17-XI-1910, J. F. Zikán; Sertão de Diamantina, Fazenda das Melancias, 10-XI-1902, E. Gounelle; Santa Victoria, ?-II-1970, F. M. Oliveira; Pedra Azul, ?-XI-1972, 800 m, M. Alvarenga; Pirapora, ?-XI-1975, M. Alvarenga; **Estado do Goiás**, no other information available, **Estado do Rio de Janeiro**, collection day and collector not noted: Specimens are deposited in: ACMT, AMNH, BMNH, CASC, CMNH, CUIC, FMNH, MCNZ, SDEI, SMTD, USNM, WFBM, and WOPC.

Axina latilinea Opitz, new species

Figures 61, 70, 90.

Type material. Holotype. Female. Type locality: PROV. DE SANTIAGO DEL ESTERO, BORDS DU RIO SALADO, ENV.D'ICAÑO. MISTOL PASO, E. R. WAGNER 1909 (Argentina). A second label reads: OCTOBER (MNHN).

Diagnosis. The wide castaneous and flavotestaceous fasciae on the elytral disc, as depicted in Fig. 90, will distinguish the members of this species from congeners.

Description. *Size*. Length 10.5 mm; width 2.7 mm. *Form*. As in Fig. 90. *Color*. Cranium, thorax, and legs black; antenna testaceous; elytra bicolorous, each elytron with 3 castaneous and 2 flavotestaceous fasciae, elytral apex flavotestaceous. *Head*. Cranium coarsely punctate, frons wider than length of antennal pedicel; EW/FW 50/30. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 130/160; elytra, asetiferous punctures concentrated in middle of disc, one striae proximal to sutural margin; EL/EW 420/90. *Abdomen*. Pygidium scutiform, posterior margin with acumination at middle (Fig. 61).

Natural history. The holotype was collected in October.

Distribution (For a map see Fig. 70)**.** This species is known from Argentina.

Etymology. The specific epithet, *latilinea*, is a Latin compound name derived from the prefix *lati-* (= wide) and *linea* (= line). I refer to the broad fascia on the elytral disc.

Axina phallospina Opitz, new species

Figures 53, 65, 70, 91.

Type material. Holotype. Male. Type locality: BOLIVIA, Santa Cruz Dpt., 4 km N Bermejo, October 17-24, 2014, Wappes & Morris (FSCA). A second label reads: Refugio los Volcanes, El 1045-1350m, 18°06′S 63°36′W. A Third label reads: ACMT. **Paratypes.** 9 specimens. **Bolivia: Departamento de Santa Cruz**, 20 km N Camiri, road to Eyti, 6 km E Hwy 9, 5-6-10-XII-2012, 1,250 m, Wappes, Bonaso, Skillman (WOPC,1); El Refugio Los Volcanes, 1-10-X-2008, 3,363 feet, Morris & Wappes (RFMC, 1; WOPC, 1); *idem*, 18-24-X-2014, 3,363 feet, Morris & Wappes (WOPC, 1); 4 km N Bermejo, Refugio Los Volcanes, 4-9-XII-2013, 1,045-1,350 m, Wappes & Skillman (ACMT, 1); *idem*, 4-9-XII-2013, 1,045-1,350 m, Wappes & Skillman (ACMT, 1); *idem*, 8-11-XII-2011, 1,350 m, Wappes, Lingafelter, Morris & Woodley (ACMT, 1); *idem*, 10-12-XII-2015, 1,045-1,350 m, Wappes, Kuckartz & Skillman (ACMT, 1).

Diagnosis. The round premedial and postmedial flavotestaceous elytral maculae are characteristics that will distinguish the members of this species from superficially similar beetles of *A. fortipes*. Males of these two species have a vastly different aedeagal construction (compare Fig. 48, 53)

Description. *Size*. Length 11.0 mm; width 2.8 mm. *Form*. As in Fig. 91. *Color*. Cranium castaneous: antenna testaceous; prothorax bicolorous, venter and lower pronotum sides black, remainder of pronotum castaneous; pterothorax, legs, and abdomen black, except tarsi testaceous; elytra bicolorous, mostly black, each elytron with three flavotestaceous maculae, round one in front of middle, round one behind middle, and one at apex, only apical macula reaches sutural margin. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 60/10. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 120/170; elytra, few asetiferous punctures near middle adjacent to sutural margin, width of interstitial spaces variable; EL/EW 480/100. *Abdomen*. Female pygidium narrows slightly to a blunt point; female visible abdominal sternite VI abruptly narrows in posterior ½ (Fig. 65); aedeagus (Fig. 53), phallobasic lobes long, widely separated, with large spine on ventral margin; phallic plates widen, with large spine on dorsal margin; phallobasic apodeme abbreviated.

Variation. *Size*. Length 11.0–12.2 mm; width 2.8–3.4 mm. Except for body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected in Bolivia during October, at altitudes that range from 1,013–1,350 m. 430 m.

Distribution (for map see Fig. 70)**.** This species is known from Bolivia.

Etymology. The specific epithet, *phallospina*, is a compound name that stems from the Greek *phallus* (= penis) and the Latin *spina* (= spine). I refer to the highly spinous condition of the apical region of the phallus.

fasciata species group

This is a convenience group that does not show a unifying characteristic. There are 20 species in this group with a geographical distribution that involves Panama, French Guiana, Bolivia, Peru, Brazil, and Argentina

Axina apicalis Pic, 1950

Figures 70, 92.

Axina apicalis Pic, 1950: 10. **Holotype**. Gender not known. Type locality: Brésil (MNHN). Corporaal 1950: 98.

Diagnosis. The basal 4/5 of the elytron disc is testaceous and the apical 1/5 is black. These characteristics will distinguish the members of this species from congeners.

Redescription. *Size*. Length 9.5 mm; width 2.3 mm. *Form*. As in Fig. 92. *Color*. Cranium dark castaneous; antenna testaceous; prothorax bicolorous, venter, lower sides of pronotum, pterothorax, and legs black; pronotum disc castaneous; elytra bicolorous, mostly testaceous, epipleural margin and region in front of apex brown. *Head*. Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 50/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 115/125; elytra, asetiferous punctures scattered, punctures extend a short distance beyond elytron middle; EL/EW 420/80. *Abdomen*. Aedeagus, phallobasic lobes very short, contiguous; phallic plates serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 9.5–13.0 mm; width 2.2–3.0 mm. Except for body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected from Bolivia during October and November, some at 404 m. From Brazil specimens were captured during November and December.

Distribution (for map see Fig. 70)**.** In addition to the holotype, I examined 10 specimens from: **Bolivia: Departamento de Santa Cruz**, Potrerillos del Guenda, 21-24-X-2011, Wappes & Skillman; 3.7 km SSE Buena Vista, Hotel Flora & Fauna, 5-15-XI-2001, 405 m, M. C. Thomas & B. K. Dozier. **Brazil: Estado do Bahia**, Santo Antonio de Barra, 12-XI-1888, Gounelle; **Estado do São Paulo**, Cipo, 26-XII-1975, V. N. Alin; Val. du Rio Pardo, ?-XII-1898, E. Gounelle. Specimens are deposited in: ACMT, FSCA, MNHN, and WOPC.

Notes. The holotype was examined, but the description is based on a homotype specimen.

Axina centrimaculata Schenkling, 1900, revalidated status

Figures 47, 70, 93.

Axina centrimaculata Schenkling, 1900: 288. **Lectotype**. Female. **Here designated.** Type locality: Goyaz, Brasilia, Donckier (SDEI). Corporaal 1950: 98. There is indication that Schenkling examined more than one specimen in his description of this species, but he did not select a holotype, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. Its comparatively small size (length about 6 mm), the round testaceous marking on the basal ½ of the elytral disc along with the broad obliquely positioned macula behind the middle of the elytral disc are characteristics that will distinguish the members of this species from superficially similar and larger (about 11 mm) specimens of *Axina bifasciata* (Chevrolat).

Redescription. *Size*. Length 6.0 mm; width 1.5 mm. *Form*. As in Fig. 93. *Color*. Cranium castaneous; antenna testaceous; prothorax bicolorous, venter testaceous, pronotal sides dark castaneous, pronotal middle light castaneous; elytra bicolorous, disc mostly castaneous, large round testaceous marking in elytral basal ½, each elytron with wide obliquely position macula behind middle, and apical ⅕th testaceous; legs bicolorous, distal ½ of femora and proximal ½ of tibiae dark brown, remainder of legs testaceous; abdomen flavotestaceous. *Head*. Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 33/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, narrowly concave at middle; PW/PL 67/90; elytra with asetiferous punctures substriate, punctures extend slightly beyond elytron middle, width of interstitial spaces varies; EL/EW 150/50. *Abdomen*.

Aedeagus (Fig. 47), phallobasic lobes very short, contiguous; edge of phallic plates minutely serrate; phallobasic apodeme abbreviated.

Note. Previously *A. centrimaculata* was considered a synony of Axina bifasciata (Chevrolat). I consider it a valid species and here revalidate the species status.

Distribution (for map see Fig. 70)**.** In addition to the lectotype, I examined one specimen from: **Brazil: Estado do Mato Grosso**, Corumba, collection day and collector not noted. Specimens are deposited in: FMNH and MNHN.

Axina chiasta Opitz, new species

Figures 44, 73, 94.

Type material. Holotype. Male. Type locality: Brazil: Minas Gerais, Pedra Azul, ?-XII-1970, F. M. Oliveira (FSCA). **Paratypes**. 34 specimens. **Brazil: Estado do Minas Gerais**, Pedra Azul, ?-XII-1970 (AMNH, 1; BMNH, 1; CASC, 1; CUIC, 1); *idem*, ?-XI-1970, F. M. Oliveira (WOPC, 1); *idem*, ?-XI-1971, 800 m, F. M. Oliveira (CMNC, 1; CNCI, 1; CSCA, 1; WOPC, 1); *idem*, ?-XI-1971, Seabra & Oliveira (CMNH, 1; EMEC, 1; FMNH, 1; MCNZ, 1: MNHN, 1; OXUM, 1; WOPC, 2; SDEI, 1; SMTD, 1; USNM, 1; WFBM, 1; WOPC, 2); *idem*, ?-XI-1972, F. M. Oliveira (PMNH, 1); *idem*, ?-XI-1972, Moacir Alvarenga (FSCA, 1; WOPC, 3); **Estado do Bahia**, Encruzilhada, ?-XI-1974, Moacir Alvarenga (WOPC, 4); **Estado do Rio de Janeiro**, Rio de Janeiro, collection date not noted, Fry (USNM, 1); **Estado do Espírito Santo**, Linhares, ?-XI-1973, Moacir Alvarenga (TAMU, 1).

Diagnosis. The brown X-like marking on the basal ½ of the elytron disc will distinguish the members of this species from congeners.

Description. *Size*. Length 7.5 mm; width 1.7 mm. *Form*. As in Fig. 94. *Color*. Cranium, thorax, and abdomen castaneous; antenna testaceous; elytra bicolorous, mostly flavotestaceous, basal half with brown X-like marking, each elytron with slender brown streak on side, distal ½ of elytron disc with brown angular marking that narrowly extends towards elytral base along sutural margin; legs flavotestaceous. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 37/10. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 70/105; elytra, asetiferous punctures concentrated in middle of disc, one stria proximal to sutural margin; EL/EW 350/50. *Abdomen*. Aedeagus (Fig. 44), phallobasic lobes short; edge of phallic plates minutely serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 6.5–11.0 mm; width 1.8–2.0 mm. The brown markings on the elytron disc vary in prominence.

Natural history. Specimens were collected in Brazil during November and December, some at 800 m.

Distribution (For a map Fig. 73)**.** This species is known from Brazil.

Etymology. The specific epithet, *chiasta*, is a Greek name derived from *chiasmos* (= crosswise). I refer to the X-like marking in the basal ½ of the elytral disc.

Axina fasciata Kirsch, 1874

Figures 46, 70, 95.

Axina fasciata Kirsch, 1874: 398. **Holotype**. Gender not known. Type locality: Peru (SMTD). Dos Santos and Filho 1982: 43. Corporaal 1950: 98.

Diagnosis. The prothoracic femur is unicolorous in the members of this species. This characteristic will distinguish the members of this species from superficially similar specimens of *A. megaspina*, which differ by showing a bicolorous prothoracic femur.

Redescription. *Size*. Length 8.0 mm; width 2.0 mm. *Form*. As in Fig. 95. *Color*. Cranium dark castaneous; antenna testaceous; prothorax bicolorous, mostly testaceous, with a broad brown band across pronotum proximal to pronotal arch; mesothorax testaceous; metathorax castaneous; elytra bicolorous, mostly testaceous, with two transverse brown bands, one band at middle, second band in front of elytral apex; legs testaceous except metafemur brown; abdomen flavotestaceous. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 40/10. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/

PL 80/110; elytra, asetiferous punctures substriate, punctures extend to elytral ½, interstitial spaces wide; EL/EW 340/60. *Abdomen*. Aedeagus (Fig. 46), phallobasic lobes very long, curvate distally; phallic plates minutely serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 5.0–8.0 mm; width 1.2–1.8 mm. The narrow dark transverse marking across the pronotum proper, may expand to a large black marking that extends anteriorly onto the pronotal arch. The pronotal marking may be faintly visible or completely absent.

Natural history. Specimens were collected in Bolivia during November and December, one at 430 m. Other specimens were collected from Brazil during October.

Distribution (for map see Fig. 70)**.** In addition to the holotype, I examined 25 specimens from: **Bolivia: Departamento de Santa Cruz**, Buena Vista, vicinity Hotel Flora & Fauna, 5-15-XI-2001, 430 m, blacklight trap, M. C. Thomas; *idem*, 22-31-X-2003, Wappes & Morris; Potrerillos del Guenda, 22-XI-2005, B. K. Dozier. **Peru: Provincia San Martin**, Moyobamba, ?-?-1888, M. de Mathan. **Brazil: Estado do Amazonas**, Amazon, collection date not noted, Bates. **Estado do Mato Grosso**, Diamantino, Fazenda Rio Arinos, ?-X-1983, Eurides Furtado. Specimens are deposited in: ACMT, AMNH, BMNH, CASC, CMNH, CUIC, FMNH, FSCA, MCNZ, RFMC, SDEI, and WOPC.

Axina heveli Opitz, new species

Figures 70, 96.

Type material. Holotype. Male. Type locality: PANAMA, Canal Zone, 24-VI-1973, Gary Hevel (USNM). **Paratypes.** 2 specimens. **Panama: Provincia de Panama**, 30 km E Cañita, 28-V-1990, at light, F. Hovore (WOPC); Altos, Isla de Majé, 28-IV-1984, H. P. Stockwell (AMNH).

Diagnosis. From superficially similar specimens of *Axina nigrifrons*, *A. heveli* beetles differ by showing few asetiferous punctures on the elytral disc.

Description. *Size*. Length 13.0 mm; width 3.0 mm. *Form*. As in Fig. 96. *Color*. Cranium bicolorous, frons black, remainder flavotestaceous; antenna testaceous; thorax and abdomen flavotestaceous, except metasternum infuscated; elytra bicolorous, basal ⅓ and apical ¼ black, remainder flavotestaceous; legs bicolorous, prothoracic femora flavotestaceous, apical region of mesothoracic and metathoracic femora black, remainder of femora flavotestaceous; tibiae black; tarsi brown. *Head*: Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 60/20. *Thorax*:Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 150/180; elytra, asetiferous punctures not striate, punctures extend to elytron middle, width of interstitial spaces variable; elytral apex subacuminate; EL/EW 510/100. *Abdomen*: Aedeagus, phallobase tapered distally; phallobasic lobes very short and nearly contiguous; phallic plates serrate; phallobasic apodeme abbreviated.

Natural history. The holotype was collected from Panama during April–June.

Distribution (For a map see Fig. 70)**.** This species is known from Panama.

Etymology. The specific epithet, *heveli*, is a patronymic that honors Gary Hevel, among the most knowledgeable Entomologists known to me.

Axina klisis Opitz, new species

Figures 27, 70, 97.

Type material. Holotype. Male. Type locality: Brasil, Pará, Serra Norte, Refeitorio, 17-XI-1983. A second label reads: Brasil, Pará, M. F. Torres (FSCA). **Paratype.** One specimen. **Brazil: Estado do Pará**, Serra Norte, Canga, 4-XI-1983, collector not noted (MCNZ).

Diagnosis. The elytral asetiferous punctures are scattered on the elytral disc. This characteristic will distinguish specimens of this species from superficially similar specimens of *A. trinalis*, which differ by showing a substriate arrangement of the elytral asetiferous punctures.

Description. *Size*. Length 10.0 mm; width 2.3 mm. *Form*. As in Fig. 97. *Color*. Cranium, thorax, and legs dark castaneous; antenna testaceous; elytra bicolorous, disc mostly flavotestaceous, epipleural margin widely dark brown, brown marking extends mesally at middle of elytral disc and just in front of elytral apex where brown marking is

contiguous with sutural margin; abdomen brown. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 50/15. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, disc narrowly concave near middle; PW/PL 110/150; elytra, asetiferous punctures scattered, punctures extend posteriorly to elytral 3/4, interstitial spaces very wide; EL/EW 440/80. *Abdomen*. Aedeagus (Fig. 27), phallobasic lobes very short, contiguous, phallic plates not serrate; phallobasic apodeme abbreviated.

Distribution (for map see Fig. 70)**.** This species is known from Brazil.

Etymology. The specific epithet, *klisis*, is a Latin derivative of *clino* (= bend). I refer to the bent character of the phallobasic lobes.

Axina lateralis Pic, 1936

Figures 51, 70, 98.

Axina lateralis Pic, 1936: 15. **Holotype**. Gender not known. Type locality: Brésil (MNHN). Corporaal 1950: 98.

Diagnosis. In *A. lateralis* specimens the distal limits of the metatibia are testaceous, these limits are dark in superficially similar specimens of *A. villa*.

Redescription. *Size*. Length 9.5 mm; width 2.2 mm. *Form*. As in Fig. 98. *Color*. Cranium dark castaneous; antenna testaceous; prothorax bicolorous, venter, lower sides of pronotum, pterothorax, and legs black, pronotal disc castaneous; elytra bicolorous, mostly testaceous, epipleural margin and region in front of apex brown. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 45/8. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 95/125; elytra, asetiferous punctures scattered, punctures extend posteriorly to elytral 3/4, interstitial spaces very wide; EL/EW 410/60. *Abdomen*. Aedeagus (Fig. 51), phallobasic lobes short, flattened laterally; phallic plates serrate near phallic apex; phallobasic apodeme abbreviated.

Variation. *Size*. Length 9.5–13.0 mm; width 2.2–3.0 mm. Except for body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected in Bolivia during October, in a transitional forest at 350–400 m. Others were collected from Brazil from November and December, at altitudes that range from 300–500 m.

Distribution (for map see Fig. 70)**.** In addition to the holotype, I examined 33 specimens from: **Bolivia: Departamento de Santa Cruz**, Potrerillos del Guenda, Snake Farm, 21-24-X-2011, 350–400 m, Wappes & Skillman; 3.7 km SSE Buena Vista, Hotel Flora & Fauna, 5-15-X-2001, tropical transitional forest. M. C. Thomas, & B. K. Dozier; 4-6 km SSE Buena Vista, Hotel Flora & Fauna, 19-22-X-2004, Wappes & Morris; *idem*, 9-19-X-2004, J. Eger. **Brazil: Estado do Mato Grosso**; ?-?- 1886, P. Germain; **Estado do Bahia**, Itapetinga, ?-XI-1969, F. M. Oliveira; **Estado do Minas Gerais**, Passa Quatrom, ?-II-1960, B. Silva; **Estado do Santa Catarina**, Nova Teutonia, ?-XII-1965, 300-500 m, Fritz Plaumann; *idem*, ?-XI-1965, 300-500 m, Fritz Plaumann. **Estado do Rio de Janeiro**, Guanabara, ?-III-1964, M. Alvarenga; *idem*, ?-XII-1972, M. Alvarenga; *idem*, Represa Rio Grande, ?-I-1972, F. M. Oliveira. Specimens are deposited in: ACMT, AMNH, BMNH, CMNC, CMNH, CNCI, CSCA, CSUC, CUIC, FMNH, FSCA, KSUC, MCNZ, MNHN, OXUM, RFMC, SMTD, WFBM, USNM, WOPC, and ZMHB.

Notes. I examined the holotype, but the description is based on a homotype specimen.

Axina luzia Opitz, new species

Figures 28, 71, 99.

Type material. Holotype. Male. Type locality: Santa Luzia do Itanhi, SE (Faz. Crasto), 09-12.IX-1999, A. Bonaldo col. (MNHN). A second label reads: Col. MCN 164040. **Paratypes.** 8 specimens. **French Guiana: Commune Cayenne**, 100 km SW Cayenne, 4-XI-1987, collector not legible (WOPC, 1). **Brazil: Estado do Bahia**, Cachimbo, ?-?-1890, C. H. Pujol (MNHN, 2; WOPC, 1); **Estado do Pernambuco**, Serra de Communiati, 3-XII-1893, Gounelle (BMNH, 1; MNHN, 2); **Estado do Minas Gerais**, Inst. Cath. ?-?-1907, collector not noted (MNHN, 1).

Diagnosis. The members of *A. luzia* are superficially similar to those of *A. ordinis* and *A. polycaula*; specimens of these three species have a short black line on the pronotum base. *Axina luzia* specimens are proportionally shorter (about three times longer than wide) than those of *A. ordinis*. From *A. polycaula* specimens those of *A. luzia* differ by having the asetiferous punctures not extending to the elytral apex.

Description. Size. Length 9.0 mm; width 2.8 mm. *Form*. As in Fig. 99. *Color*. Cranium bicolorous, frons and epicranium castaneous, remainder black; antenna testaceous; thorax black, except center of pronotal disc widely castaneous, pronotum with narrow black line that extends from mesoscutellum to discal indentation; elytra bicolorous, mostly flavotestaceous, epipleural margin widely dark brown, brown marking extends mesally at elytral base, at middle of elytral disc and just in front of elytral apex where brown marking is contiguous with sutural margin; legs mostly black, tarsi testaceous; abdomen bicolorous, visible basal 3 sternites brown, apical 3 sternites yellow. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 50/13. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, disc narrowly concave near middle; PW/PL 110/150; elytral asetiferous punctures scattered, punctures extend posteriorly to elytral 3/4, interstitial spaces very wide; EL/EW 540/85. *Abdomen*. Female pygidium minutely trilobed on posterior margin; aedeagus (Fig. 28), phallobasic lobes short, nearly contiguous, phallic plates serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 9.0–11.0 mm; width 2.8–2.8 mm. The black narrow line on the pronotum disc may be shortened or absent.

Natural history. Specimens were collected in Brazil during March and October.

Distribution (for map see Fig. 71)**.** This species is known from Brazil.

Etymology. The specific epithet, *luzia*, is a noun in apposition and refers to the type locality.

Axina minas Opitz, new species

Figures 29, 71, 101.

Type material. Holotype. Male. Type locality: Matunsinhos (Minas), Bresil, E. Gounelle, 3.4.1885 (MNHN). **Paratypes.** 5 specimens. **Brazil: Estado do Bahia**, Cachimbo, ?-?-1890, Ch. Pujo (WOPC, 1); Villa Victoria, ?-?-1890, Ch. Pujol (MNHN, 1; WOPC, 1); **Estado do Rio de Janeiro**, Rio de Janeiro, collection date not noted, Fry (BMNH, 1); **Estado do Espírito Santo**, Linhares, ?-X-1973, Moacir Alvarenga (MCNZ, 1).

Diagnosis. In specimens of *A. minas*, the pterothorax is testaceous or light castaneous, whereas in superficially similar specimens of *A. lobispinula* it is dark castaneous.

Description. *Size*. Length 8.0 mm; width 2.0 mm. *Form*. As in Fig. 101. *Color*. Cranium castaneous; antenna testaceous; thorax and abdomen flavotestaceous; elytra bicolorous, mostly testaceous, humeral angle broadly black, disc with two transverse brown fasciae, one narrow fascia at middle, second fascia angular, in front of elytral apex. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 35/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 90/120; elytra, asetiferous punctures subseriate, punctures extend slightly beyond elytral ½, width of interstitial spaces variable; EL/EW 370/70. *Abdomen*. Aedeagus (Fig. 29), phallobase with angle near lobes; phallobasic lobes short, slightly separated; edges of phallic plates serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 6.5–9.0 mm; width 2.7–2.2 mm. Other than body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected in Brazil during March and October.

Distribution (for map see Fig. 71)**.** This species is known from Brazil.

Etymology. The specific epithet, *minas*, is a noun in apposition and refers to the type locality.

Axina munda Schenkling, 1900

Figures 52, 71, 100.

Axina munda Schenkling, 1900: 391. **Lectotype**. Male. **Here selected.** Type locality: Jatahy, Prov. Goyas (Brasil) (SDEI). Paralectotypes. 2 specimens. **Brazil; Estado do Goiás**, Goias, collection date not noted, Donckier (RMNH, 1; SDEI, 1). Corporaal 1950: 98. There is indication that Schenkling examined more than one specimen in his description of this species, but he did not select a holotype, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. Distinguishable from superficially similar specimens of *Axina vista* by the configuration of the dark elytral markings. In *A. munda* specimens the 2 posterior dark markings are punctiform, whereas in *A. vista*

specimens these markings are transverse. Also, there are considerable differences in their aedeagi (compare Fig. 52, 39).

Redescription. *Size*. Length 11.0 mm; width 3.0 mm. *Form*. As in Fig. 100. *Color*. Flavotestaceous, except black in distal limit of femur, and proximal limit of tibia, and each elytron with three black spots, one spot at humeral angle, one just behind middle, and one at elytral apical 3/4. *Head*. Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 60/20. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 115/160; elytra, asetiferous punctures substriate, punctures extend to slightly beyond elytron middle, interstitial spaces vary in width; EL/EW 480/100. *Abdomen*. Aedeagus (Fig. 52), phallobasic lobes very long, narrow, approximate; phallus abruptly narrowed, phallic plates copiously serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 9.0–11.0 mm; width 2.2–2.5 mm. The black markings on the elytron disc vary in prominence.

Natural history. Specimens were collected in Bolivia during October & December.

Distribution (for map see Fig. 71)**.** In addition to the lectotype and paralectotypes, I examined 11 specimens from: **Bolivia: Departamento de Santa Cruz**, Buena Vista, vicinity Hotel Flora & Fauna, 22-26-X-2002, Morris & Wappes; Andres Ibenez, Potrerillos del Guenda, 608-XII-2011, Wappes, Lingafelter, Morris, Woodley. **Brazil: Estado do Goías**, Jatai, collection date and collector not noted; Trindade, collection date not noted, Ch. Pujol. **Ecuador**, **Provincia de Napo**, Yasuni National Forest, no other information available. Specimens are deposited in: ACMT, MNHN, QCAZ, SDEI, and WOPC.

Axina pallidioccabus Opitz, new species

Figures 31, 71, 102.

Type material. Holotype. Male. Type locality: Serra de Communati (Pernambuco) (Brazil), 3-XII-1893, Gounelle (MNHN). **Paratype.** One specimen. **Brazil:** No other information available (WOPC).

Diagnosis. The members of this species resemble superficially those of *A. proxima*, from which *pallidioccabus* specimens differ by showing a pale pronotal collar, two elytral yellow fasciae, and a black elytral apex. In *proxima* specimens the pronotal collar is black, there is one elytral testaceous fascia, and the elytral apex is testaceous.

Description. *Size*. Length 7.0 mm; width 1.7 mm. *Form*. As in Fig. 102. *Color*. Forebody black, except pronotal collar testaceous; antenna testaceous; pterothorax, legs, and abdomen testaceous; elytra tricolorous, mostly testaceous in basal ½, mostly black in apical ½; each elytron with premedial and postmedial yellow fasciae that reach sutural margin. *Head*. Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 35/18. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 73 /95; elytra with striate asetiferous punctures, latter extend backwards slightly beyond elytron middle; width of interstitial spaces variable EL/EW 290/45. *Abdomen*. Aedeagus (Fig. 31), phallobase narrows to short acuminate phallobasic lobes; both margins serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 5.5–9.0 mm; width 1.3–2.5 mm. The brown markings on the elytral disc vary in prominence.

Natural history. Specimens were collected in Brazil during March, September, November, and December, some at 800 m.

Distribution (for map see Fig. 71)**.** This species is known from Brazil.

Etymology. The specific epithet, *pallidioccabus*, is a Latin compound name derived from *pallid* (= pale) and *occabus* (= collar). I refer to the testaceous color of the pronotal collar.

Axina picta Schenkling, 1907

Figures 71, 103.

Axina picta Schenkling, 1907: 309. **Lectotype**. Female. **Here selected.** Type locality: Amazon, Bates (Brasil) (BMNH). Paralectotype. 1 specimen. **Brazil: Estado do Amazonas**, Amazon, collection date not noted, Bates (SDEI). Corporaal 1950: 98. There is indication that Schenkling examined more than one specimen in his description of this species, but

he did not select a holotype, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. The floricolorous marking on the elytron disc (Fig. 103) will distinguish the members of this species from congeners.

Redescription. *Size*. Length 12.0 mm; width 3.0 mm. *Form*. As in Fig. 103. *Color*. Cranium castaneous; antenna testaceous; prothorax bicolorous, venter flavotestaceous; pronotal sides and pronotal arch black, pronotum middle widely testaceous, testaceous area flows into subapical depression; pterothorax light castaneous; elytra bicolorous, X-like testaceous making that extends along sutural margin to elytral anterior margin, remainder of elytra dark brown, except elytral apical ¼ testaceous; legs dark mostly dark brown castaneous, except basal region of femora testaceous; abdomen testaceous. Head. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 65/11. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 130/170; elytra, asetiferous punctures not striate, punctures extend to elytral apical 3/4, interstitial spaces very wide; EL/EW 490/110. *Abdomen*. Pygidium securiform.

Distribution (for map see Fig. 71)**.** This species is known from Brazil.

Axina piperata Opitz, new species

Figures 62, 73, 104.

Type material. Holotype. Female. Type locality: S. Antonio da Barra, Pr. De Bahia, 11-XII-1888, Gounelle (Brazil) (MNHN).

Diagnosis. The encircled brown asetiferous punctures, which are diffused throughout the elytral disc against a pale ground color, will distinguish the holotype specimen from those of congener species.

Description. *Size*. Length 10.0 mm; width 2.5 mm. *Form*. As in Fig. 104. *Color*. Cranium brown; antenna testaceous; prothorax bicolorous, mostly brown, with pale streaks in middle of disc; pterothorax brown; elytra bicolorous, mostly flavotestaceous, with light brown tinge at humerus, elytron middle, and near elytral apex; asetiferous punctures encircled in brown; legs bicolorous, distal ½ of femora and proximal ½ of tibiae brown, remainder of legs flavotestaceous; abdomen flavotestaceous. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 50/15. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, disc narrowly concave near middle; PW/PL 110/160; elytra, asetiferous punctures scattered, punctures extend posteriorly to elytral 3/4, interstitial spaces very wide; EL/EW 440/90. *Abdomen*. Female pygidium with a reflexed flap (Fig. 62).

Distribution (for map see Fig. 73)**.** This species is known from Brazil.

Etymology. The specific epithet, *piperata*, is a Latin name that stems from *piper* (= pepper). I refer to the sprinkled-like appearance of the brown elytral asetiferous punctures.

Axina pollex Opitz, new species

Figures 32, 64, 71, 105.

Type material. Holotype. Male. Type locality: ARGENTINA TUCUMAN 11 km. O, de Las Sejas coll. L. Stange, collection date not noted (FSCA). **Paratypes**. 30 specimens. **Brazil: Estado do Mato Grosso**, Corumba, collection day and collector not noted (CMNH, 1); Mato Grosso, ?-?-1886, P. Germain (MNHN, 1). **Argentina: Provincia de Tucumán**, 11 km. O, de Las Cejas, collection day not noted, L. Stange (FSCA, 1); *idem*, ?-I-1968, L. Stange (FSCA, 1); **Provincia de Chaco**, Tres Estacas, ?-II-1992, collector not noted (WOPC, 1); Charata, ?-I-1995, collector not noted (AMNH, 1; BMNH, 1; CUIC, 1; WFBM, 5; WOPC, 1); **Provincia de Entre Rios**, Liebig, ?-I-1990, collector not noted (MCNZ, 1; WFBM, 2); **Provincia de Rio Negro**, El Bolsón, ?-II-1955, collector not noted (FMNH, 4; SDEI, 1); **Provincia de Córdoba**, 4 km NE Cruz del Eje, 20-II-1982, H. & A. Howden (CMNC, 1); San Vicente, collection day not noted, J. Frenzel S (WFBM, 1); **Provincia de Santiago del Estero**, Chaco Santiago del Estero, boards du Rio Salado, Environs d'Icaño, ?-?-1909, E. R. Wagner (MNHN, 2); *idem*, ?-?-1910, E. R. Wagner (MNHN, 1); *idem*, Santiago del Estero, collection date and collector not noted (MNHN, 1); **Provincia de Catamarca**, San Antonio, 6-18-II-1958, R. Golbach (MLPA, 1). **Paraguay: Departamento de Paraguarí**, Hotel

Gabriela near Paraguarím 28-30-XI-2017, MV & UV lights, J. E. Eger (FSCA, 1); **Departamento de Cordillera**, Caacupé, Campo Evangelico Neatestamentaria, 15-18-XI-2016, MV & UV lights, J. E. Eger (FSCA, 1).

Diagnosis. In *A*. *pollex* specimens the distal limit of the metatibia is dark, the limit is testaceous in superficially similar specimens of *A*. *analis*.

Description. *Size*. Length 8.0 mm; width 2.0 mm. *Form*. As in Fig. 105. *Color*. Cranium bicolorous, venter castaneous, frons testaceous; antenna testaceous; prothorax bicolorous, venter and pronotum sides dark castaneous, center of disc broadly testaceous; pterothorax, legs, except tarsi flavotestaceous; elytra bicolorous, humeral angle and epipleural margin brown, disc with faintly visible marking at middle and transverse fascia before apex; abdomen, 3 basal visible sternites brown, 3 apical visible sternites yellow. *Head*. Cranium coarsely punctate**,** frons wider than length of antennal pedicel; EW/FW 40/15. *Thorax*. Pronotum coarsely punctate at sides, finely punctate in middle, with 2 tumescences, slightly concave at middle; PW/PL 85/120; elytra, asetiferous punctures striate, punctures extend to elytral apical 3/4, width of interstitial spaces variable; EL/EW 360/70. *Abdomen*. Female pygidium emarginate (Fig. 64); aedeagus (Fig. 32), phallobasic lobes short, digitiform, nearly contiguous; phallic plates minutely serrate subapically; phallobasic apodeme abbreviated.

Variation. *Size*. Length 8.0–13.0 mm; width 2.0–3.8 mm. The brown markings on the elytron disc vary in prominence.

Natural history. Specimens were collected from Argentina during January and February.

Distribution (for map see Fig. 71)**.** This species is known from Brazil, Paraguay and Argentina.

Etymology. The specific epithet, *pollex*, is a Latin noun with the meaning of "thumb". I refer to digitiform configurations of the phallobasic lobes.

Axina polycaula Opitz, new species

Figures 33, 63, 66, 71, 106.

Type material. Holotype. Female. Type locality: Serra da Bernada (Pernambuco), Duhant, 5.6.1894 (Brazil) (MNHN). **Paratypes.** 5 specimens. **Brazil: Estado do Pernambuco**, no other information available (WOPC, 1); Serra da Bernada, 5-VI-1894, Duhant (MNHN, 1); **Estado do Bahia**, S. Antonio da Barra, 11-XII-1888, Gounelle (MNHN, 2); **Estado do Ceará**, Ceará, collection date and collector not noted (WOPC, 1).

Diagnosis. The asetiferous punctures are profusely distributed on the elytral disc; they reach the elytral apex. These characteristics will distinguish the members of this species from specimens of other *Axina* species with a partial black pronotal midline; this midline reaches the pronotal anterior margin in specimens of *Axina polycaula*.

Description. *Size*. Length 10.0 mm; width 2.5 mm. *Form*. As in Fig. 106. *Color*. Cranium and thoracic venter black; frons, epicranium, and legs castaneous; antenna testaceous; pronotal dorsum mostly castaneous, with narrow black line that extends from mesoscutellum to pronotal anterior margin; elytra bicolorous, mostly testaceous, castaneous markings at elytron middle and before elytral apex. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 45/15. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, disc narrowly concave near middle; PW/PL 110/120; elytra, asetiferous punctures not striate, punctures extend posteriorly to elytral apex, width of interstitial spaces variable; EL/EW 460/85. *Abdomen*. Female pygidium trilobed distally (Fig. 63, 66); aedeagus (Fig. 33).

Distribution (for map see Fig. 71)**.** This species is known from Brazil.

Etymology. The specific epithet, *polycaula*, is a compound name that stems from the Greek *poly* (= many) and the Latin *caula* (= hole). I refer to the copious number of asetiferous punctures on the elytral disc.

Axina proxima (Chevrolat), 1876, new combination

Figures 54, 71, 107.

Priocera proxima Chevrolat, 1876: 10. **Holotype**. Male. Type locality: Brasilia, Santa Rita (MNHN). Corporaal 1950: 100.

Priocera podagrica Schenkling, 1900: 385. **Holotype**. Type locality: Brasil (SDEI). Dos Santos and Filho 1986: 63. **New synonymy**

Priocera podagrica variety *pygmaea* Schenkling, 1902: 321. **Holotype**. Type locality: Brasil (SDEI). **New synonymy**

Diagnosis. The small size of these beetles (± 7 mm) in combination with the elytral color patterns, as shown in Fig. 107, will distinguish the members of this species from congeners.

Redescription. *Size*. Length 7.0 mm; width 1.8 mm. *Form*. As in Fig. 107. *Color*. Forebody dark castaneous; antenna testaceous; pterothorax, legs, and abdomen testaceous; elytra bicolorous, mostly testaceous in basal ⅓ and totally testaceous in distal third; basal ⅓ with oblique brown line at middle that begins at elytral basal margin, oblong brown macula behind elytron middle. *Head*. Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 30/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 70/95; elytra with substriate asetiferous punctures extend backwards slightly beyond elytral middle; EL/EW 310/60. *Abdomen*. Aedeagus (Fig. 54), phallobasic lobes short, inner margin with spine; outer margin of phallic plates minutely serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 5.5–9.0 mm; width 1.3–2.5 mm. The brown markings on the elytral disc vary in prominence.

Natural history. Specimens were collected in Brazil during March, September, November, and December, some at 800 m.

Distribution (for map see Fig. 71)**.** In addition to the holotype, I examined 90 specimens from: **Brazil**: **Estado do Minas Gerais**, Pedra Azul, ?-XII-1970, 800 m, F. M. Oliveira; *idem*, ?-XI-1971, Seabra & F. M. Oliveira; Matusinhos, ?-III-1885, E. Gounelle; **Estado do Espírito Santo**, Linhares, ?-IX-1973, M. Alvarenga; **Estado do Goías**, Jatai, 19-XI-1972, F. M. Oliveira; **Estado do Bahia**, Villa Victoria, ?-?-1890, C. H. Pujol; Cachimbo, ?-?-1890, C. H. Pujol; Santo Antonio de Barra, 12-XI-1988, Gounelle; **Estado do Goiás**, Rio Verde, ?-?-1908, G. A. Baer; Mineiro, ?-?-1912, H. Donckier; **Estado do Pernambuco**, Serra de Communaty, 3-XII-1893, Gounelle; **Estado do São Paulo**, Val. Du Rio Pardo, ?-XII-1898, E. Gounelle. Specimens are deposited in: AMNH, BMNH, CASC, CMNH, CUIC, FMNH, FSCA, MCNZ, MNHN, USNM, WFBM, and WOPC.

Axina rio Opitz, new species

Figures 35, 71, 108.

Type material. Holotype. Male. Type locality: Rio Jan. Fry (Brazil, Rio de Janeiro) (BMNH). **Paratype:** One specimen. **Brazil: Estado do Minas Gerais**, Caraca, ?-?-1885, Gounelle (MNHN).

Diagnosis. In specimens of *A*. *rio* the elytral disc shows a distinct angular midelytral fascia, which is not the case in similar specimens of *A*. *chiasta*.

Description. *Size*. Length 14.0 mm; width 3.2 mm. *Form*. As in Fig. 108. *Color*. Cranium bicolorous, frons castaneous, remainder black; antenna testaceous; thorax light castaneous; elytra bicolorous, mostly testaceous, humerus black, disc with 2 angular fasciae, one at middle and one broader before apex, midelytral fascia does not reach sutural margin, preapical fascia reaches sutural margin; legs bicolorous, distal ½ of femora and proximal ⅓ black, remainder of legs testaceous; abdomen testaceous. *Head*. Cranium coarsely punctate**,** frons about as wide as length of antennal pedicel; EW/FW 60/20. *Thorax*. Pronotum coarsely punctate at sides, finely punctate in middle, with 2 tumescences, slightly concave at middle; PW/PL 140/170; elytra, asetiferous punctures scattered, punctures extend to elytral apical ¾, width of interstitial spaces variable; EL/EW 600/100. *Abdomen*. Aedeagus (Fig. 35), phallobasic lobes short, broad and slightly bent distally; phallic plates minutely serrate subapically; phallobasic apodeme abbreviated.

Variation. The two available specimens are quite homogeneous.

Distribution (for map see Fig. 71)**.** This species is known from Brazil.

Etymology. The specific epithet, *rio*, is a noun in apposition and refers to the type locality.

Axina villa Opitz, new species

Figures 38, 71, 109.

Type material. Holotype. Male. Type locality: de Villa Victoria, Ch. Pujol 1890 (Brazil) (MNHN). **Diagnosis.** Specimens of this species superficially resemble the members of *A*. *polycaula*, from which they differ by showing the epipleural margin that is testaceous; this margin is black in specimens of *A*. *polycaula*.

Description. *Size*. Length 9.0 mm; width 3.2 mm. *Form*. As in Fig. 109. *Color*. Cranium bicolorous, frons and epicranium castaneous, remainder black; antenna testaceous; thorax black, except center of pronotal disc widely castaneous, pronotum with narrow black line that extends from mesoscutellum to discal indentation; elytra bicolorous, mostly flavotestaceous, epipleural margin widely dark brown, brown marking extends mesally at middle of elytral disc and just in front of elytral apex where brown marking is contiguous with sutural margin; legs mostly black, tarsi testaceous; abdomen bicolorous, visible basal 3 sternites brown, apical 3 sternites yellow. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 60/20. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, disc narrowly concave near middle; PW/PL 130/170; elytra, asetiferous punctures scattered, punctures extend posteriorly to elytral 3/4, interstitial spaces very wide; EL/EW 580/115. *Abdomen*. Aedeagus (Fig. 38), phallobasic lobes short, contiguous, phallic plates serrate; phallobasic apodeme abbreviated

Distribution (for map see Fig. 71)**.** This species is known from Brazil.

Etymology. The specific epithet, *villa*, is a noun in apposition and refers to the type locality.

Axina vista Opitz, new species

Figures 39, 71, 110.

Type material. Holotype. Male. Type locality: BOLIVIA: Santa Cruz, Buena Vista vic. Flora & Fauna Hotel, 22-26/X/02, Morris/Wappes (FSCA). **Paratypes.** 112 specimens. **Bolivia: Departamento de Santa Cruz**, Buena Vista, vicinity Flora & Fauna Hotel, 22-26-X-2002, Morris & Wappes (RFMC, 1; WOPC, 1); *idem*, 27-31-X-02, Morris & Wappes (RFMC, 7); Buena Vista, Flora & Fauna Hotel, 7-10-X-2004, Morris & Wappes (RFMC, 3); *idem*, 14-16-X-2000, R. Morris (RFMC, 1); *idem*, 14-17-X-2003, R. Morris, Nearns, & Wappes (RFMC, 5); *idem*, 21-24-XI-2003, J. Wappes, R. Morris & Nearns (ACMT, 1); *idem*, 13-16-XI-2003, J. Wappes, R. Morris & Nearns (ACMT, 1); *idem*, 22-31-X-2002, J. Wappes & Morris (ACMT, 1); *idem*, 27-29-X-2000, Wappes & Morris (FSCA, 1); *idem*, 19-22-X-2004, Wappes & Morris (ACMT, 1); *idem*, 21-25-X-2003, R. Morris, Nearns, Wappes (RFMC, 1); *idem*, 17-20-X-2000, R. Morris (RFMC, 1); *idem*, 23-25-X-2000, R. Morris (RFMC, 1); 4.6 km SSE Buena Vista, Hotel Flora & Fauna, 19-22-X-2004, Wappes & Morris (ACMT, 1); *idem*, 22-31-X-2002, Wappes & Morris (ACMT, 1); *idem*, 10-15-XI-2002, Robin Clarke (ACMT, 1); 13.7 km SSE Buena Vista, Hotel Flora & Fauna, 23-26-X-2000, M. C. Thomas (WOPC, 1); Potrerillos del Guenda, 6-8-XII-2011, Morris & Wappes (FSCA, 2; JNRC, 2; RFMC, 2); 16-22-X-2006, Wappes, Nearns & Eya (ACMT, 1); *idem*, 30-XI-3-XII-2012, Wappes & Skillman (ACMT, 1); *idem*, 22-XI-12-XII-2005, B. K. Dozier (FSCA, 1); Warnes Prov. Rio Selva Resort, 5 km ESE Warnes, 28-I-2007, J. Prena (ACMT, 1); Refugio Los Volcanes, 4 km N Bermejo, 18-21-?-2007, J. Prena (ACMT, 1); *idem*, 18-22-2006, Wappes & Lingafelter (FSCA, 1); 4 km N Bermejo, Refugio Los Volcanes, 2-II-2012, 1,045-1,350 m, J. Wappes & A. Bonaso (ACMT, 2); 5-7-XII-2015, 1,045-1,350 m, J. Kuckartz & Skillman (ACMT, 1); *idem*, 11-17-XII-2012, Wappes & Skillman (ACMT, 3; FSCA, 2); Potrerillos del Guenda, Snake Farm, 16-22-X-2006, 400 m, Wappes, Nearns & Eya (ACMT, 2); *idem*, 20-25-X-2007, 370 m, A. R. Cline & J. Romero (CSCA, 1); *idem*, 24-25-XI-2011, 370-400 m, Waico & Romero (ACMT, 1); *idem*, 2-3-XII-2013, Wappes & Skillman (ACMT, 1); Andres Ibanez, Potrerillos del Guenda, 6-8-XII-2011, Wappes, Lingafelter, Morris, Woodley (ACMT, 2); 4.6 km SSE Buena Vista, Hotel Flora & Fauna, 21-24-XI-2003, Wappes, Morris & Nearns (ACMT, 1); *idem*, 27-29-X-2000, Wappes & Morris (ACMT, 1); El Cidral, 1-28-I-1962, R. Golbach (CASC, 1); Cuatro Ojos, ?-XI-1913, Steinbach (CMNH, 1); Sara, ?-?-1907, Steinbach (EMEC, 3); *idem*, collection date not noted, J. Steibach (WFBM, 2); 3.7 km SSE Buena Vista, Hotel Flora & Fauna, 5-15-XI-2001, 405 m, M. C. Thomas & B. K. Dozier (FSCA, 9); *idem*, 15-22-XI-2001, B. K. Dozier (FSCA, 3); *idem*, 14-28-X-2000, B. K. Dozier (FSCA, 2); *idem*, 19-XI-2000, M. C. Thomas (FSCA, 2); **Departamento de Beni**, Rurrennabaque, 10-23-X-1956, L. E. Pena (WFBM, 1); Reyes, collection day and collector not noted (WFBM, 1). **Peru: Provincia de Tambopata**, 30 km SW Puerto Maldonado, 7-XI-1983, 290 m, T. L. Erwin (USNM, 1); *idem*, 7-III-1984, 290 m, T. L. Erwin (USNM, 1); *idem*, 28-II-1984, 290 m, T. L. Erwin (USNM, 3); *idem*, 20-X-1982, 290 m, T. L. Erwin (USNM, 1); *idem*, 2-III-1984, 290 m, T. L. Erwin (USNM, 1); Peru. No other information noted (AMNH, 1). **Brazil: Estado do Amazonas**, Amazon, collection date not noted, Bates (BMNH, 2); Ega, collection date and collector not noted (BMNH, 1); **Estado do Pará**, Santarèm, collection date and collector not noted (BMNH, 1); **Estado do Mato Grosso**, Diamantino, Fazenda Rio Arinos, ?-X-1983, Eurides Furtado (CMNH, 2); Corumba, collection date and collector not noted (FMNH,

3); Sinop, ?-X-1976, M. Alvarenga (SMTD, 1); **Estado do Bahia**, Chapada, collection date and collector not noted (CMNH, 2); **Estado do Tocantins**, Palmas, Sa do Lageado, Fazenda Céu, ?-XI-1992, MCN-MZSP (MCNZ, 1); **Estado do Rondônia**, 62 km SW Ariquemes, Fazenda Rancho Grande, 16-X-1993, C. W. & L. B. O'Brien (WOPC, 2); *idem*, 7-X-1993, C. W. & L. B. O'Brien (WOPC, 1); *idem*, 16-XI-1994, C. W. & L. B. O'Brien (WOPC, 1); **Estado do Minas Gerais**, ?-XI-1972, M, Alvarenga (WOPC, 1); Sinop, ?-X-1975, M. Alvarenga (WOPC, 2).

Diagnosis. Distinguishable from superficially similar specimens of *Axina munda* by the configuration of the dark elytral markings. In *A. vista* specimens the 2 posterior dark markings are transverse, whereas in *A. munda* specimens these markings are punctiform. Also, there are considerable differences when comparing their aedeagi (compare Fig. 39, 52).

Description. *Size*. Length 6.8 mm; width 2.0 mm. *Form*. As in Fig. 110. *Color*. Testaceous, except mesofemora and metafemora infuscated distally, and each elytron with three dark brown markings, one punctiform marking at humeral angle, one transverse marking just behind middle and at elytral apical ¾. *Head*. Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 37/12. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 80/110; elytra, asetiferous punctures striate, punctures extend to slightly beyond elytral middle, interstitial spaces vary in width; EL/EW 310/55. *Abdomen*. Aedeagus (Fig. 39), phallobasic lobes very long narrow, approximate; phallic apical region produced, margin of phallic plates copiously serrate; phallobasic apodeme abbreviated.

Variation. *Size*: Length 6.0–11.0 mm; width 1.4–2.5 mm. The brown markings on the elytral disc vary in prominence. The middle pair may be absent, and the posterior pair may be in the form of transverse fasciae. In general, these markings may be only faintly visible.

Natural history. Specimens were collected in Bolivia during October, November, December, and February, some at elevations that range from 370–1,350 m. Others were collected in Peru during October, November, February, and March, some at 290 m. Brazilian specimens were captured during October.

Distribution (for map see Fig. 71)**.** This species is known from Bolivia, Peru, and Brazil.

Etymology. The specific epithet, *vista*, is a noun in apposition and refers to the type locality.

ochra species group

There are two members in this species group whose specimens are characterized by an extended phallic apex. Their distribution involves Venezuela, Bolivia, and Brazil.

Axina nigrifrons Schenkling, 1906

Figures 71, 111.

Axina nigrifrons Schenkling, 1906: 253. **Lectotype**. Female. **Here designated.** Type locality: Puerto Cabello (Venezuela) (SDEI). Paralectotype. One specimen. **Venezuela: Estado de Carabobo**, Puerto Cabello (SDEI). Corporaal 1950: 98. There is indication that Schenkling examined more than one specimen in his description of this species, but he did not select a holotype, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. The elytral apex is obtuse in specimens of this species, which is not the case in superficially similar specimens of *A. acutipennis*, in which the elytral apex is subacuminate.

Redescription. *Size*. Length 6.0 mm; width 1.3 mm. *Form*. As in Fig. 111. *Color*. Cranium bicolorous, frons black, remainder flavotestaceous; antenna testaceous; thorax and abdomen flavotestaceous; elytra bicolorous, basal ⅕ and apical ⅕ black, remainder flavotestaceous; legs bicolorous, prothoracic femora flavotestaceous, basal ½ of mesothoracic and metathoracic femora flavotestaceous, remainder of femora and tibiae black, tarsi brown. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 40/10. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 98/130; elytra, asetiferous punctures arranged into striae, striated punctures extend to elytral middle, width of interstitial spaces variable, elytral apex obtuse; EL/EW 360/65. *Abdomen*. Aedeagus, phallobasic lobes very short and abruptly narrowed in distal ½, narrowly separated; phallic plates serrate, phallic apex extended; phallobasic apodeme abbreviated.

Variation. *Size*. Length 6.0–9.0 mm; width 1.6–2.2 mm. There may be one or 2 dark spots between the black basal and apical elytral region, and the black portion on the apical ⅕ of the elytra may be faintly visible or reduced to a narrow fascia.

Natural history. Specimens were collected in Bolivia during October through December, some at altitudes that range from 370–430 m.

Distribution (for map see Fig. 71)**.** In addition to the types, I examined 20 specimens from: **Bolivia: Departamento de Santa Cruz**, Potrerillos del Guenda, 6-8-XII-2011, 400 m, Morris & Wappes; *idem*, 3-5-III-2011, 370 m, J. Wappes & D. Thomas; 4-6 km SSE Buena Vista, Hotel Flora & Fauna, 22-31-X-2002, 430 m, Wappes & Morris; *idem*, 1-8-XI-2002, J. E. Wappes; Buena Vista, 20-II-1999, 380 m, L. Stange; Sara, collection day not noted, J. Steinbach; **Brazil**: **Estado do Goías**, Jatai, ?-XI-1972, F.M. Oliveira; Trindade, collection date not noted, Ch. Pujol; **Estado do Mata Grosso**, Mato Grosso, ?-?-1886, P. Germain; Corumba, collection date and collector not noted; Sinop, ?-X-1976, M. Alvarenga. Specimens are deposited in: ACMT, FSCA, MNHN, RFMC, WFBM, and WOPC.

Axina ochra Opitz, new species

Figures 34, 71, 112.

Type material. Holotype. Male. Type locality: BOLIVIA: Santa Cruz, El Refugio Los Volcanes, Elev. 3,363', X/1-10/08, Morris & Wappes (FSCA). **Paratype.** One specimen. **Bolivia: Departamento de Santa Cruz**, 3.7 km SSE Buena Vista, Hotel Flora & Fauna, 14-19-X-2000, 430 m, tropical transition forest, M. C. Thomas (FSCA).

Diagnosis. The completely yellow dorsum will distinguish these beetles from congeners.

Description. *Size*. Length 8.0 mm; width 2.0 mm. *Form*. As in Fig. 112. *Color*. Yellow, except antennae, tibiae, and tarsi black. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 45/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 95/120; elytra, asetiferous punctures substriate, punctures extend to elytron middle, width of interstitial spaces variable; EL/EW 360/65. *Abdomen*. Aedeagus (Fig. 34), phallobasic lobes very short, narrowly separated; margin of phallic plates serrate, phallic apex extended; phallobasic apodeme abbreviated.

Variation. *Size*. Length 7.0–8.0 mm; width 1.5–2.0 mm. Other than body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected in Bolivia during October, at 430 and 1,025 m.

Distribution (for map see Fig. 71)**.** This species is known from Bolivia.

Etymology. The specific epithet, *ochra*, is a Greek name derived from *ochros* (= pale yellow). I refer to the predominant color of these beetles.

analis species group

The female members of this group are characterized by showing a trilobed pygidium. There are six species in this group whose geographical distribution involves Bolivia, Brazil, Argentina, and Paraguay.

Axina analis Kirby, 1818

Figures 1–14, 72, 113.

Axina analis Kirby, 1818: 391. **Holotype**. Female. Type locality: Brazilia, D. Hancock (BMNH). Corporaal 1950: 97. Ekis 1975: 19.

Diagnosis. In *A. analis* specimens the distal limits of the metatibia is testaceous, which is not the case in superficially similar specimens of *A. pollex*, in which the distal limits are dark.

Redescription. *Size*. Length 13.0 mm; width 3.6 mm. *Form*. As in Fig. 113. *Color*. Cranium, legs, and pterothorax castaneous; antenna testaceous; prothorax bicolorous, venter and pronotum sides black, pronotum middle disc castaneous; pterothorax black; elytra bicolorous, humeral angle and epipleural margin brown, disc with faintly visible marking at middle and transverse fascia before apex, asetiferous punctures brown; legs brown; abdomen bicolorous, basal visible sternites I–III black, visible sternites IV–VI flavotestaceous. *Head*. Cranium finely

punctate, frons slightly wider than length of antennal pedicel; EW/FW 60/20 (1–6). *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 130/185; elytra, asetiferous punctures not striate, punctures extend to elytral apical ¾, interstitial spaces very wide; EL/EW 570/155 (7–14). *Abdomen*. Female pygidium trilobed along distal margin; aedeagus, phallobasic lobes short and narrow, contiguous; phallic plates serrate subapically; phallobasic apodeme abbreviated.

Variation. *Size*. Length 9.0–14.0 mm; width 2.1–3.4 mm. The brown markings on the elytral disc vary in conspicuousness.

Natural history. Brazil specimens were collected throughout the year, some at 200 m. In Argentina they were captured during February.

Distribution (for map see Fig. 72)**.** In addition to the holotype, I examined 59 specimens from: **Bolivia: Depatamento de Santa Cruz**, Sara, collection date and collector not noted. **Brazil: Estado do Mato Grosso**, Corumba, ?-V-?, collector not noted; **Estado do Minas Gerais**, Mar de Hespanha, 9-XII-1910, J. F. Zikán; Serra do Caraça, Santa Barbara, ?-I-1970, F. M. Oliveira; **Estado do Espírito Santo**, Vila de Alegre, 3-XII-1910, J. Zikan; **Estado do Rio de Janeiro**, Angra dos Reis, 13-16-XI-1993, A. Bonaldo; Rio de Janeiro, collection date and collector not noted; Tijuca, collection date and collector not noted; Petrópolis, collection date not noted, F. Sahlberg; **Estado do Rio Grande do Sul**, Barracão, Guarda–chuva ent., 8-V-2001, L. Moura & R. Ott; Porto Alegre, I. do Lino, 11-I-2000, I. Heydrich; Triumfo, Copesul, 14-II-2008, R. Moraes; El Dorado do Sul, Fazenda São Jose, 26-I-1999, A. Bonaldo; S. Leopoldo, 24-IV-1987, C. J. Becker; Campo Bom, 14-VII-1987, C. J. Becker; Viamao, 6-I-1977, A. Lise; Viamão, 17-I-1977, A. Lise. **Estado do São Paulo**, Fazenda Campininas, Mogi Guacu, 1-8-I-1970, J. M. & B. A. Campbell; Rio Claro, ?-I-1947, collector not noted; Inst. Florestal, 19-I-1979, E. P. Teixeira; Tabaquara, ?-I-?, B. Pohl; Marumby, ?-II-1945, collector not noted; Estación Experimental Instituto Flor, ?-X-1977, E. P. Teixeira; São Paulo, 5-I-1919; Parque Jabaquara, ?-XII-1945, collector not noted; **Estado do Paraná**, Caviuna, ?-II-1944, A. Maller; **Estado do Santa Catarina**, Imbituba, Praia do Rosa, 10-18-XI-2000, collector not legible; 10 km SW Santo Amaro de Esperatriz, 1-I-1993, 200 m, beating Mata Atlantica (First growth), J. & E. Beierl; *idem*, ?-XII-1965, F. Plaumann; *idem*, 1-V-1954, F. Plaumann; *idem*, 11-II-1954, F. Plaumann;. *idem*, 14-I-1941, F. Plaumann; *idem*, I. de Santa Catarina, 31-XII-1992, beating Mata Atlantica (second growth), J. & E. Beierl. **Argentina: Provincia de Salta**, Los Laureles, 6-II-1982, H. & A. Howden. Specimens are deposited in: AMNH, BMNH, CASC, CMNH, CNCI, CUIC, FMNH, FSCA, JNRC, MCNZ, MNHN, OXUM, SDEI, USNM, WFBM, and WOPC

Axina conspicua Schenkling, 1900

Figures 18, 45, 58, 72, 114.

Axina conspicua Schenkling, 1900: 390. **Lectotype**. Female. **Here designated**. Type locality: Goyas, Bras., Donckier (Brasil) (SDEI). Paralectotypes. 4 specimens. **Brazil: Estado do Goiás**, Collection date not noted, Donckier (FMNH, 1; SDEI, 3). Corporaal 1950: 98. Ekis 1975: 20. There is indication that Schenkling examined more than one specimen in his description of this species, but he did not select a holotype, therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species.

Diagnosis. Specimens of this species are superficially very similar to those of *A. ignota*. But, in *A. conspicua* specimens the edges of the phallic plates are smooth; they are serrate in specimens of *A. ignota*.

Redescription. *Size*. Length 12.0 mm; width 3.0 mm. *Form*. As in Fig. 114. *Color*. Cranium castaneous; antenna testaceous; prothorax bicolorous, venter and pronotum sides black, pronotal middle disc castaneous; pterothorax black; elytra bicolorous, humeral angle and epipleural margin black, disc with brown angular fascia at middle and transverse fascia before apex, asetiferous punctures brown; legs testaceous, distal half of femora and tibiae slightly darker; abdomen mostly dark brown. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 60/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 120/180; elytra, asetiferous punctures not striate, punctures extend to elytral posterior ¾, interstitial spaces very wide; EL/EW 560/120. *Abdomen*. Female pygidium trilobed along distal margin (Fig. 58); aedeagus (Fig. 45), phallobasic lobes very short, contiguous; edge of phallic plates not serrate, with two darkened lateral lines; phallobasic apodeme abbreviated (Fig. 18).

Variation. *Size***.** Length 8.0–14.0 mm; width 2.0–3.2 mm. The brown markings on the elytron disc vary in intensity.

Natural history. Specimens were collected in Brazil during October, November, and January, one in an ethanol baited flight intercept trap, one at 330 m, and one at 1,000 m.

Distribution (for map see Fig. 72)**.** In addition to the lectotype and paralectotypes, I examined 83 specimens from: **Brazil: Estado do Distrito Federal**, 30 km SW Brazilia, 6-III-1970, 1,000 m, J. M. & B. A. Campbell; **Estado do Mato Grosso**, Rio Caraguata, ?-XI-1953, Fritz Plaumann; Coordenadas, Sinop, ?-X-1974, 330 m, collector not noted; **Estado do Minas Gerais**, ?-?-1907, collector not noted; Sertão de Diamantina, Fazenda das Melancias, collection day and collector not noted; Santa Victoria, ?-II-1972, F. M. Oliveira; Goias, ?-XI-1972, F. M. Oliveira; **Estado do Goías**, Barro Preto, collection date not noted, Ch. Pujol; Rio Verde, collection date and collector not noted; Serra da Mesa, 9-20-XII-1996, A. Franceschini; Minacú, Serra da Mesa, 19-30-XI-1996, L. Moura; Trindade, collection date not noted, Ch. Pujol;?-XI-1972, F. M. Oliveira; Jatai, collection date and collector not noted; Miniero, ?-?-1912, H. Donckier; **Estado do Rio de Janeiro**, Rio de Janeiro, collection date and collector not noted; **Estado do Mato Grosso do Sul**, Três Lagoas International Paper, Horto Barra do Moeda, 12-I-1999, Ethanol baited FIT, cerrado fragment, C. A. H. Flechtmann; **Estado do Bahia**, Santo Antônio da Barra, ?-?-1890, Ch. Pujol; Barro Preto, collection date not noted, Ch. Pujol; **Estado do Tocantins**, Palmas, São do Lageado, 17-XI-1992, MCN, MZSP; Fazenda Céu, MCN, MZSP; Cerrado 15-XI-1992, MCN, MZSP; **Estado do São Paulo**, Fazenda Campininas, Mogi Guacu, 1-8-I-1970, J. M. & B. A. Campbell; Matão-Cambuhy, 22-26-XI-2005, suction trap, Susan Halbert; Regente Feijo, ?-X-1945; Villa Victoria, ?-?-1890, Ch. Pujol; Fazenda Campininas, Moqi Guacu, 11-VIII-1970, J. M. & B. A. Campbell. Specimens are deposited in: AMNH, BMNH, CASC, CMNH, CNCI, CSCA, CUIC, EMEC, FMNH, FSCA, MCNZ, MNHN, OXUM, SDEI, SEMC, UEPB, USNM, WFBM, WOPC, and ZMHB

Axina equestris (Schenkling), 1906, new combination

Figures 72, 115.

Priocera equestris Schenkling, 1906: 257. **Holotype.** Female. Type locality: Jatahy, GOYAZ, Donckier (Brasil) (SDEI). Corporaal 1950: 99.

Diagnosis. Only in the members of this small *Axina* species (about 5 –7 mm) is there a yellow angular fascia in front of the middle of an otherwise dark brown to black elytral disc.

Redescription. *Size*. Length 6.0 mm; width 1.3 mm. *Form*. As in Fig. 115. *Color*. Dorsum dark brown; antenna, venter and legs testaceous. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 30/10. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 65/100; elytra, asetiferous punctures substriate, punctures extend slightly beyond elytral middle, width of interstitial spaces variable; EL/EW 260/45. *Abdomen*. Female pygidium shallowly trilobed along distal margin, female visible abdominal sternite VI with recurved flap at distal margin; aedeagus, phallobasic lobes very short and contiguous; phallic plates serrate at both edges; phallobasic apodeme abbreviated.

Variation. *Size*: Length 5.0–7.0 mm; width 1.0–1.5 mm. The brown markings on the elytron disc vary in conspicuousness.

Natural history. Specimens were collected in Bolivia during October and November.

Distribution (for map see Fig. 72)**.** In addition to the holotype, I examined 46 specimens from: **Bolivia: Departamento de Santa Cruz**, Hotel Flora & Fauna, 4-6 k, SSE Buena Vista, 3-14-XI-2003, S.W. Lingafelter; Potrerillos del Guenda, 40 km NW Santa Cruz, 22-XI-12-XII-2005, B. K. Dozier. 16-22-X-2006, Wappes, Nearns, & Eya; 3.7 k SSE Buena Vista, Hotel Flora & Fauna, 5-15-XI-2001, M. C. Thomas. Specimens are deposited in: ACMT, AMNH, BMNH, CASC, CMNH, FMNH, FSCA, MCNZ, and WOPC

Axina ignota Opitz, new species

Figures 26, 60, 72, 116.

Type material. Holotype. Male. Type locality: Santa Cruz, Bolivia, S. C. Botanical Garden, 21-II-2004, Gino Nearns (FSCA). **Paratypes.** 7 specimens. **Brazil; Estado do Bahia**, Chapada, ?-XI-? collector not noted (CMNH, 2; FMNH, 1; WOPC, 2); **Estado do Mato Grosso**, collection date and collector not noted (MNHN, 1); Brasil, no other information available (MNHN, 1).

Diagnosis. Specimens of this species are superficially very similar to those of *A. conspicua*. But, in *A. ignota* specimens the edges of the phallic plates are serrate; they are smooth in specimens of *A. conspicua*.

Description. *Size*. Length 11.0 mm; width 2.3 mm. *Form*. As in Fig. 116. *Color*. Cranium, thorax, and legs castaneous, except basal region of femora testaceous; antenna testaceous; elytra bicolorous, mostly testaceous, humeral angle and region near mesoscutellum black, disc infuscated at middle and near elytral apex; abdomen testaceous. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 50/18. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 110/170; elytra, asetiferous punctures not striate, punctures extend to elytral posterior ¾, interstitial spaces very wide; EL/EW 440/80. *Abdomen*. Female pygidium lunate, with transverse medial stalk (Fig. 60); aedeagus (Fig. 26), phallobasic lobes very short, contiguous; edge of phallic plates serrate; phallobasic apodeme abbreviated.

Variation. The available specimens are quite homogeneous.

Natural history. Specimens were collected in Brazil during November.

Distribution (for map see Fig. 72)**.** This species is known from Brazil.

Etymology. The specific epithet, *ignota*, is a Latin name that stems from *ignotus* (= strange). I refer to the peculiar characteristic of the female pygidium.

Axina ordinis Opitz, new species

Figures 56, 72, 117.

Type material. Holotype. Female. Type locality: Trindade (Goyaz) Ch. Pujol (Brazil) (MNHN).

Diagnosis. This is a slender species. The holotype is four times longer than broad. This characteristic will distinguish the holotype specimen from specimens of other *Axina* species with a partial black pronotum midline.

Description. *Size*. Length 12.0 mm; width 3.0 mm. *Form*. As in Fig. 117. *Color*. Cranium, thorax, and legs castaneous, except, pronotum with narrow black line that extends from mesoscutellum to discal indentation; elytra bicolorous, mostly flavotestaceous, epipleural margin broadly dark brown, dark brown region projects laterally to occupy elytral base, elytron middle, and elytral preapical region. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 45/10. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, disc narrowly concave near middle; PW/PL 110/140; elytra, asetiferous punctures substriate, punctures extend posteriorly to elytral 3/4, width of interstitial spaces variable; EL/EW 410/90. *Abdomen*. Female pygidium trilobed distally (Fig. 56).

Distribution (for map see Fig. 72)**.** This species is known from Brazil.

Etymology. The specific epithet, *ordinis*, is a Latin name with a meaning of "line". I refer to the narrow black line at the base of the pronotum disc.

Axina trinalis Opitz, new species

Figures 55, 67, 72, 118.

Type material. Holotype. Female. Type locality: ARGENTINA: La Rioja, Santa Vera Cruz, Humid Ravine, 15-II-2005, P. Fidalgo & L. Stange; Malaise trap (FSCA). **Paratypes.** 71 specimens. **Bolivia: Departamento de Santa Cruz**, 4 km N Bermejo, Refugio Los Volcanes, 7-II-2012, 1,350 m, J. Wappes & A. Bonaso (ACMT, 3); *idem*, 11-17-XII-2012, Wappes & Skillman (ACMT, 1); Chaco, above Achira, 22-25-I-2007, 1,730 m, Wappes & Lingafelter (ACMT, 1); *idem*, 22-25-I-2007, 1,350 m, Wappes & Lingafelter (WOPC, 1); Provincia Florida, Samaipata, 7-X-2006, Fray Andres Langer (ACMT, 1). **Brazil: Estado do Goías**, Trindade, collection date not noted, Ch. Pujol (MNHN, 1); **Estado do São Paulo**, Teodoro Sampaio, ?-IX-1985, Malaise, F. M. Oliveira (CMNH, 1); Marilia, ?-XI-1945, collector not noted (WFBC, 4); **Estado do Bahia**, ?-VI-1972, Moacir Alvarenga (AMNH, 1); **Estado do Paraná**, Rondon, 9-I-1953, Fritz Plaumann (USNM, 1); *idem*, 24-XI-1952, Fritz Plaumann (KSUC, 1); *idem*, 20-XI-1952, Fritz Plaumann (CSCA, 1); *idem*, 21-I-1952, Fritz Plaumann (OXUM, 1); *idem*, 19-XII-1952, Fritz Plaumann (FMNH, 2); *idem*, 8-I-1953, Fritz Plaumann (FMNH, 2); *idem*, 20-XII-1952, Fritz Plaumann (FMNH, 2); *idem*, 13-XII-1952, Fritz Plaumann (FMNH, 1); *idem*, 25-XI-1952, Fritz Plaumann (FMNH, 1); **Estado do Minas Gerais**, Sertão de Diamantina, Fazenda das Melancias, 10-XI-1902, E. Gounelle (MNHN, 1); **Estado do**

Mato Grosso, Rio Caraguata 1-X-1954, 400 m, Fritz Plaumann (FMNH, 1); *idem*, XII-?-1953, 400 m, Fritz Plaumann (FMNH, 1); *idem*, XII-?-1954, 400 m, Fritz Plaumann (FMNH, 1); *idem*, 14-I-1954, 400 m, Fritz Plaumann (FMNH, 1); *idem*, 8-I-1954, 400 m, Fritz Plaumann (FMNH, 1); *idem*, 1-?-1954, 400 m, Fritz Plaumann (FMNH, 1); *idem*, XII-?-1953, 400 m, Fritz Plaumann (FMNH, 2); *idem*, XI-?-1953, 400 m, Fritz Plaumann (FMNH, 2); *idem*, 5-XII-195, 400 m, Fritz Plaumann (FMNH, 1); **Estado do Rio Grande do Sul**, Cerrito Santa Maria, 11-VI-1995, L. Witeck (MCNZ, 1); **Estado do Santa Catarina**, Rio Vermelho, ?-XII-1945, A. Maller (AMNH, 1); **Argentina: Provincia de Misiones**, Env. San Ignacio, Villa Lutecia, ?-X-1910, E. R. Wagner (MNHN, 1); **Provincia de Tucumán**, San Pedro de Colalao, ?-I-1968, L. Stange (FSCA, 1); *idem*, ?-II-1968, L. Stange (FSCA, 4); *idem*, ?-I-1968, L. Stange (FSCA, 1); *idem*, ?-II-1951, J. M. Arnau (MLPA, 1); Parque Aconquiju, 9-I-1946, R. Golbach (MLPA, 2); San Javier, ?-II-1948, R. Golbach (MLPA, 1); **Provincia Catamarca**, El Rodeo, 1-18-I-1958, R. Golbach (FSCA, 1); Sumalao, 5-II-1958, R. Golbach (MLPA, 1); **Provincia La Rioja**, Santa Vera Cruz, 1-15-IV-2003, humid ravine, 1,700 m. Malaise trap, P. Fidalgo (WOPC, 1; FSCA); *idem*, 31-I-2004, Malaise trap, P. Fidalgo & L. A. Stange (FSCA, 1); *idem*, 31-VIII-2006, Malaise trap, L. A. Stange (FSCA, 1); *idem*, 31-II-2005, L. A. Stange & C. Porter (FSCA, 1); *idem*, 15-III-2004, Malaise trap, Patricio (CUIC, 1); *idem*, 30-II-2005, Malaise trap, Stange & Porter (BMNH, 1; FSCA, 1; MCNZ, 1); *idem*, Castro, Barros, Casa Rancho, 31-VIII-2006, L.A. Stange (FSCA, 1); **Provincia de Jujuy**, Calilegua National Park, Aguas Negras, 18-XII-1987, 500 m, UV in subtropical humid forest, S. J. Peck (CNCI, 1); Cerro Perales, 27-XI-1948, Willink & Monrós (MLPA, 1); **Provincia de Salta**, Viñaco, 15 km S El Carril, 12-II-1982, H. & A. Howden (CMNC, 1); **Paraguay: Departamento de Paraguari,** Sapucay, 9-12-VII-2008, U. Drechsel (JNRC, 1); **Departamento de Alto Paraná**, Estancia Dimas, 4-6-VI-2007, U. Drechsel (JNRC, 1); Paraguay, no other information noted (MNHN, 2); Paraguay, collection date not noted, Drake (SDEI, 2).

Diagnosis. Female specimens may be identified by the ornate configuration of the distal margin of the visible abdominal sternite V (Fig. 67). The configuration of the phallus will identify the males of this species (Fig. 55).

Description. *Size*. Length 12.0 mm; width 3.0 mm. *Form*. As in Fig. 118. *Color*. Cranium bicolorous, venter castaneous, frons and epicranium testaceous; antenna testaceous; prothorax bicolorous, venter and pronotal sides dark castaneous, center of disc testaceous; pterothorax, legs, and abdomen dark castaneous, except tarsi flavotestaceous; elytra bicolorous, humeral angle and epipleural margin brown, disc with faintly visible marking at middle and transverse fascia before apex. *Head*. Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 50/30. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 130/165; elytra, asetiferous punctures not striate, punctures extend to elytral apical ⅘, interstitial spaces very wide; EL/EW 525/90. *Abdomen*. Female pygidium trilobed along distal margin, female visible abdominal sternite VI narrows in distal ½, and visible abdominal sternite V emarginated twice (Fig. 67); aedeagus (Fig. 55), phallobasic lobes short and narrow, nearly contiguous; phallic plates serrate subapically; phallobasic apodeme abbreviated.

Variation. *Size***.** Length 6.0–9.0 mm; width 1.3–2.0 mm. The brown markings on the elytral disc vary in prominence.

Natural history. The Bolivian specimens were collected during January, February, October and December at altitudes that range from 1,350–1,730 m. Those from Brazil were obtained during January, June, September, November, and December, some at 400 m. Argentinean specimens were captured during January, February, April, August, and October, at altitudes that range from 500–1,700 m, some in a Malaise trap and some with an ultraviolet light set in a subtropical humid forest. From Paraguay specimens were gathered during June and July.

Distribution (for map see Fig. 72)**.** This species is known from Bolivia, Brazil, Argentina, and Paraguay.

Etymology. The specific epithet, *trinalis*, is a Latin noun with the meaning of "three". I refer to the tripartite character of the distal margin of the female pygidium.

fortipes species group

The members of this group are characterized by having a spine at the base of the phallobasic lobes. The geographic distribution of the six species of this group involves Bolivia, Brazil, and Argentina.

Axina acutipennis Opitz, new species

Figures 73, 119.

Type material. Holotype. Female. Type locality: BOLIVIA: Santa Cruz, El Refugio Los Volcanes, Ele. 3363; 18-24/X/2014, Morris & Wappes. A second label reads: R. F. Morris Collection (FSCA). **Paratypes**. 4 specimens. **Bolivia: Departamento de Santa Cruz**, 50 km S Santa Cruz, 14-II-2000, J. E. Wappes (ACMT, 1); 3.7 km SSE Buena Vista Hotel Flora & Fauna, 5-15-XI-2001, 405 m, M. C. Thomas & B. K. Dozier (FSCA, 1; WOPC, 1). **Paraguay:** no other information noted (AMNH, 1).

Diagnosis. From superficially similar specimens *Axina heveli*, *A. acutipennis* beetles differ by showing a full striate complement of asetiferous punctures on the basal ½ of the elytral disc, and the mesothoracic and metathoracic femora are mostly black. These femora are mostly flavotestaceous in *A. heveli* specimens. **Description.** *Size*. Length 11.0 mm; width 2.5 mm. *Form*. As in Fig. 119. *Color*. Cranium bicolorous, frons black, remainder light castaneous; antenna brown; thorax and abdomen light castaneous; elytra bicolorous, basal ¼ and apical ¼ black, remainder flavotestaceous; legs bicolorous, femora mostly black; tibiae and tarsi black. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 50/20. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 120/160; elytra, asetiferous punctures striate, punctures extend to elytral middle, width of interstitial spaces variable; elytral apex subacuminate; EL/EW 500/100. *Abdomen*. Aedeagus, phallobase tapered distally; phallobasic lobes very short and nearly contiguous; phallic plates serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 7.0–11.0 mm; width 1.7–2.5 mm. Other than body size, the available specimens are quite homogeneous.

Natural history. The available specimens were collected from Bolivia during February and November one at 405 m another at 2,627 m.

Distribution (for map see Fig. 73). This species is known from Bolivia and Paraguay.

Etymology. The specific epithet, *acutipennis*, is a Latin compound name that stems from *acuti* (= sharp) and *penna* (= wing). I refer to the sharply tapered elytral apex.

Axina fortipes Pic, 1941

Figures 48, 59, 72, 120.

Axina fortipes Pic, 1941: 10. **Holotype**. Male. Type locality: Brésil (MRSN). Corporaal 1950: 98.

Diagnosis. The midelytral black fascia traverses the sutural margin in specimens of this species, which is not the case in superficially similar specimens of *A. basalis*.

Redescription. *Size*. Length 14.0 mm; width 3.3 mm. *Form*. As in Fig. 120. *Color*. Cranium, thorax, legs and abdomen castaneous; antenna testaceous; elytra bicolorous, mostly black, each elytron with three castaneous maculae, one in front of middle, one behind middle, and one at apex, only the apical macula reaches sutural margin. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 70/20. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 155/190; elytra, asetiferous punctures substriate, punctures extend posteriorly slightly beyond elytral ½, width of interstitial spaces variable; EL/EW 590/110. *Abdomen*. Female pygidium narrows slightly to a blunt point; female visible abdominal sternite VI with transverse flap (Fig. 59); aedeagus (Fig. 48), phallobasic lobes very short, slightly diverged and curvate; phallic plates minutely serrate; phallobasic apodeme abbreviated.

Variation. Size. Length 10.0–14.0 mm; width 2.2–3.3 mm. In the holotype specimen the premedial castaneous macula reached the sutural margin.

Natural history. Specimens were collected in Bolivia during October, at 430 m.

Distribution (for map see Fig. 72)**.** In addition to a photograph of the holotype, I examined 20 specimens from: **Bolivia: Departamento de Santa Cruz**, near Potrerillos, 27-29-X-2013, 430 m, Wappes & Kuckartz; 3.7 km SSE Buena Vista, Hotel Flora & fauna, 14-19-X-2000, 430 m, M. C. Thomas. **Brazil: Estado do Goías**, Mineiro Goyaz. Specimens are deposited in: ACMT, FSCA, MNHN, and WOPC.

Notes. A photograph of the holotype was examined. The redescription is based on a non-type specimen.

Axina furcula Opitz, new species

Figures 49, 72, 121.

Type material. Holotype. Female. Type locality: Brazil: Minas Gerais, Pedra Azul, ?-XI-1972, 800 m, Moacir Alvarenga (FSCA). **Paratypes**. 36 specimens. **Brazil: Estado do Minas Gerais:** Pedra Azul, ?-XI-1972, 800 m, Oliveira (WOPC, 2); **Estado do Bahia**, Cachimbo, ?-?-1890, Ch. Pujol (AMNH, 1; BMNH, 1; CMNC, 1; CUIC, 1; CASC, 1; CMNC, 1; CSCA, 1; EMEC, 1; FMNH, 1: MCNZ, 1; MNHN, 13; OXUM, 1; SDEI, 1; USNM, 1; WOPC, 5,); Villa Victoria, ?-?-1890, Ch. Pujol (MNHN, 1); Santo Antônio da Barra, Ch. Pujol,1890 (MNHN, 1); **Estado do Pernambuco**, Cerra de Communati, 12-III-1893, Gounelle (MNHN, 1).

Diagnosis. The midelytral black fascia does not traverse the sutural margin in specimens of this species, which is not the case in superficially similar specimens of *A*. *latilinea*.

Description. *Size*. Length 9.0 mm; width 2.0 mm. *Form*. As in Fig. 121. *Color*. Cranium and prothorax black, except pronotal disc lighter at middle; antenna testaceous; mesothorax brown; metathorax and abdomen testaceous; elytra bicolorous, mostly testaceous, humerus and epipleural margin widely black, black region extended medially near apex and near elytral middle; legs bicolorous, distal ½ of femora and proximal ½ of tibiae black, remainder of legs testaceous; abdomen brown. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 40/18. *Thorax*. Pronotum finely punctate, with 2 paralateral spheroid tumescences, one narrow linear short tumescence behind middle, disc concave near middle; PW/PL 95/120; elytra, asetiferous punctures substriate, punctures extend posteriorly to elytral ½, width of interstitial spaces variable; EL/EW 400/65. *Abdomen*. Aedeagus, phallobasic lobes angular at base, acuminate; phallobasic lobes long, narrow; margin of phallic plates minutely serrate; phallobasic apodeme abbreviated (Fig. 49).

Variation. *Size*. Length 5.8–9.3 mm; width 1.3–2.0 mm. Except for body size, the available specimens are quite homogeneous.

Natural history. Specimens were collected in Brazil during November, at 800 m.

Distribution (for map see Fig. 121)**.** This species is known from Brazil.

Etymology. The specific epithet, *furcula*, is a Latin noun with a meaning of "fork". I refer to the acuminate condition of the phallobasic lobes.

Axina megaspina Opitz, new species

Figures 30, 72, 122.

Type material. Holotype. Male. Type locality: BOLIVIA, S. Cruz Dept. 20 km N Camiri Rd to Eyti, 8-9-XII. 2015, Wappes & Kuckartz (FSCA). A second label reads: & Skillman, 6–8 km E Hwy 9 El 1250 m, 19°52′S 63°29′W.

Diagnosis. The prothoracic femur is bicolorous in the members of this species; it is unicolorous in superficially similar specimens of *A*. *fasciata*.

Description. *Size*. Length 10.2 mm; width 2.3 mm. *Form*. As in Fig. 122. *Color*. Cranium black; antenna testaceous; prothorax bicolorous, venter and middle of disc testaceous; pterothorax mostly testaceous, infuscated anteriorly; elytra bicolorous, mostly testaceous, epipleural margin broadly black, black region extends mesally at humerus, elytral middle and prepapically broadly extended across sutural margin near apex; legs bicolorous, distal ½ of femora and proximal region of tibiae black, remainder of legs testaceous. *Head*. Cranium finely punctate, frons wider than length of antennal pedicel; EW/FW 40/25. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 115/150; elytra, asetiferous punctures subseriate, punctures extend to elytral ½, interstitial spaces wide; EL/EW 480/90. *Abdomen*. Aedeagus (Fig. 30), phallobase with large spine near lobes; phallobasic lobes slightly diverging; edges of phallic plates minutely serrate; phallobasic apodeme abbreviated.

Natural history. The holotype was collected in December at 1,250 m.

Distribution (for map see Fig. 72)**.** This species is known from Bolivia.

Etymology. The specific epithet, *magaspina*, is a compound name that stems from the Greek *megas* (= large) and the Latin *spina* (= spine). I refer to the very large spine at the base of the phallobasic lobes.

Axina sexmaculata Spinola, 1844

Figures 72, 123.

Axina sexmaculata Spinola, 1844: 124. **Holotype**. Male. Type locality: Brazil (MRSN). Corporaal 1950: 98. Ekis 1975: 19.

Diagnosis. The cranium is black in specimens of *A. sexmaculata*. It is red-castaneous in superficially similar specimens of *A. fortipes*.

Redescription. *Size*. Length 10.0 mm; width 2.3 mm. *Form*. As in Fig. 123. *Color*. Cranium black; antenna testaceous; thorax, legs, and abdomen light castaneous; elytra bicolorous, mostly light castaneous, with three black maculae, one subquadrate on humeral angle, one transverse near elytron middle, and one transverse preapically. *Head*. Cranium finely punctate, frons about as wide as length of antennal pedicel; EW/FW 45/10. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 100/140; elytra, asetiferous punctures substriate, punctures extend to elytral apical ½, width of interstitial spaces variable; EL/EW 440/80. *Abdomen*. Aedeagus, phallobasic lobes very short, slightly diverged; phallic plates minutely serrate; phallobasic apodeme abbreviated.

Variation. *Size*. Length 8.0–12.2 mm; width 2.0–3.0 mm. Some specimens have the sides of the pronotum black.

Natural history. Specimens were collected in Bolivia during December at 1,250 m, and in Brazil during November.

Distribution (for map see Fig. 72). In addition to the holotype, I examined 11 specimens from: **Bolivia: Departamento de Santa Cruz**, 20 km N Camiri Rd to Eyti, 8-9-XII-2015, 1,250 m, Wappes, Kuckartz & Skillman. **Brazil: Estado do Bahia**, Villa Victoria, ?-?-1890, C. H. Pujol; Cachimbo, ?-?-1890, C. H. Pujol; Encruzilhada, ?-XI-1975, Moacir Alvarenga; San Antonio da Barra, ?-?-1890, Ch. Pujol; **Estado do Minas Gerais**, Pedra Azul, ?-XI-1971, F. M. Oliveira; **Estado do Espírito Santo**, ?-?-1909, collector not legible; **Estado do Paraiba**, Santa Rita, collection day not noted, F, Salhsberg. **Argentina: Provincia Entre Rios**, Paraná, Tiju, ?-?-1911, E. R. Wagner. Specimens are deposited in: MNHN, SDEI, WFBM, and WOPC.

Notes. The holotype was examined, but the description is based on a homotype specimen.

Axina spina Opitz, new species

Figures 36, 73, 124.

Type material. Holotype. Male. Type locality: RÉPUBL. ARGENTINE, HAUTE PARANA, TIJU-CUARE PRÈS SAN IGNACIO, E. R. WAGNER (MNHN). **Paratype.** One specimen. **Brazil: Estado do Bahia**, Encruzilhada, ?-XI-1975, M. Alvarenga (WOPC).

Diagnosis. The members of this species are superficially similar to those of *A. basalis*, but, in *A. spina* specimens the midelytral fascia is linear. The fascia is triangular in specimens of *A. basalis*.

Description. *Size*. Length 8.0 mm; width 2.0 mm. *Form*. As in Fig. 124. *Color*. Cranium black; antenna testaceous; thorax, legs, and abdomen testaceous; elytra bicolorous, mostly testaceous, humeral angle broadly black, disc with two transverse brown fasciae, one narrow fascia at middle, second fascia broad, in front of elytral apex. *Head*. Cranium finely punctate, frons slightly wider than length of antennal pedicel; EW/FW 40/15. *Thorax*. Pronotum finely punctate, with 2 tumescences, concave at middle; PW/PL 80/110; elytra, asetiferous punctures subseriate, punctures extend to elytral ½, interstitial spaces wide; EL/EW 340/60. *Abdomen*. Aedeagus (Fig. 36), phallobase with spine near lobes; phallobasic lobes very short, nearly contiguous; edges of phallic plates minutely serrate; phallobasic apodeme abbreviated.

Natural history. The paratype was collected in November.

Distribution (for map see Fig. 73)**.** This species is known from Brazil.

Etymology. The specific epithet, *spina*, is a Latin noun with a meaning of "spine". I refer to the spine on the phallobase.

Evolutionary Considerations

There is comparatively little morphological diversity among the species of *Axina*, with the obvious result that few characteristics are available for hypothesis of species level evolution. Structures of the antennae, mouthparts, thorax, and legs offer very little information for polarizing character states. The little structural diversity that can

be gleaned from adult morphology involves the maxillary palpomeres, characteristics of the elytral disc, visible abdominal sternites, male and female pygidia, and attributes of the aedeagus. Nevertheless, a hypothesis of evolution of the *Axina* species groups is proposed to serve as a beginning of our understanding of *Axina* intrageneric relationships. It is hoped that this information will be augmented when additional taxonomically valuable characteristics become available.

Zoogeographic Considerations

I have hypothesized that now there are 51 known species of *Axina*; which implies a significant amount of geologic time for the proliferation of species. Therefore, it is puzzling that except for *Axina heveli* (two specimens from Panama) no other species of *Axina* apparently traversed the Isthmus of Panama after the closure of the Panamanian portal during the middle Miocene, some 13–15 million years ago (Montes et al. 2015: 228). Moreover, during this same time interval the Colombian Andes had attained only 40% of their present height (Gregory-Wodzicki 2000: 1303). No northern migrations seem to have taken place during an interval of time when the Colombian Andes were partially formed, some 2.7 million years ago; this despite a considerable window of time for these checkered beetles to enter Middle America considering the formation of the Isthmus of Panama and, at about the same time, establishment of low mountain terrain during the Colombian orogeny.

Most *Axina* species are found in latitudes proximal to the equator, thus showing an affinity for warm humid forests. Also, there is no evidence that the members of *Axina* are associated with any particular species of trees. Therefore, it is possible that terrain with cooler climates, generated by rising land masses in northwestern Colombia, may have been an early deterrent for more northern *Axina* migrations.

Phylogenetic Interpretations

The WINCLADA computer program, in concert with NONA, analyzed 12 apotypic character states and produced one parsimonious tree of a species group phylogeny (Fig. 68). I posit that the *Axina* ancestor originated in South America, somewhere on the woodland terrains of Brazil, the center of *Axina* modern species diversity. It is hypothesized that this ancestor (A) diverged to produce ancestral species B and C. Ancestor B generated the progenitor of the bahia species group, characterized by brown elytra, and ancestor C, which evolved the progenitor of the bella species group; in which the elytral asetiferous punctures were reduced in numbers. Ancestor C also produced ancestor D. The latter evolved the ancestor of the basalis species group, which led to species characterized by a female pygidium that is produced at the middle of the posterior margin. Ancestor D promulgated progenitor E, which in one lineage produced the fasciata species group and ancestor F in another lineage. Progenitor F generated the ancestor of the analis species group whose species developed a trilobed condition of the female pygidium. Ancestor F also generated progenitor G which in one lineage produced the analis species group and the fortipes species group in another lineage. These conjectures of relationships are based on few characters. Perhaps the phylogenetic tree will become more comprehensive in character state containment when additional new species taxa are collected and made available.

Acknowledgments

I thank the curators listed in the "Repositories of specimens" section for entrusting me with specimens in their charge. The very thorough reviews of Robert H. Turnbow, Jr. and John M. Leavengood, Jr. are much appreciated. I thank Jean-Michel Maes for the Spanish abstract. My wife Galena provided much support in the preparation of the Montage and SEM images. My thanks to Paul E. Skelley for numerous departmental courtesies and for reviewing the manuscript, and to the Florida Department of Agriculture, DPI, for institutional affiliation and support.

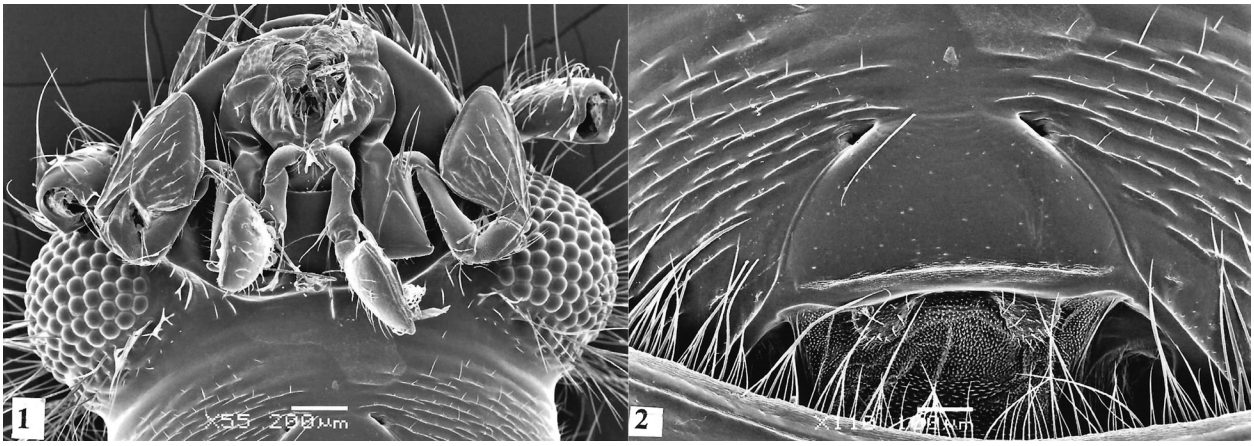
Literature Cited

Arnett RH Jr, Samuelson GA, Nishida GN. 1993. The insect and spider collections of the world (second edition). Flora and fauna handbook no. 11. Sandhill Crane Press; Gainesville, FL. 310 p.

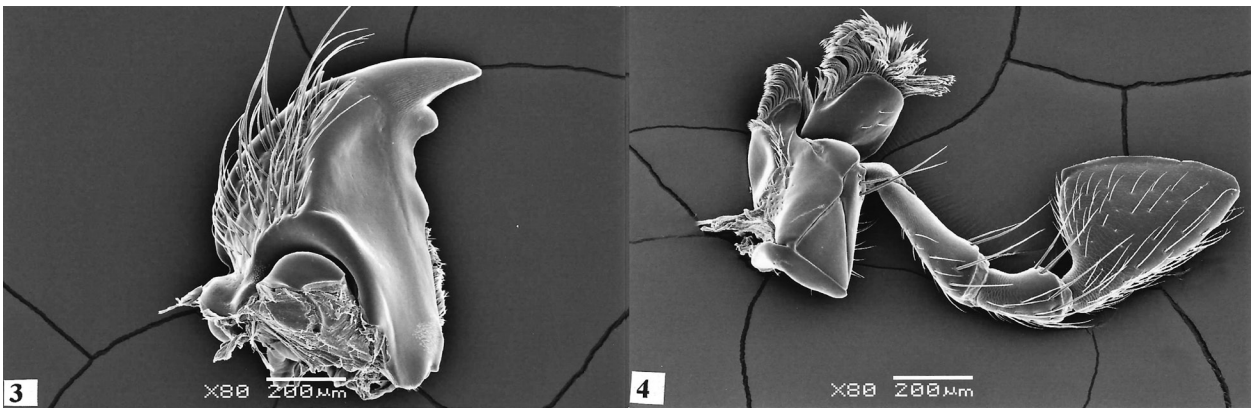
Billings RF. 1985. Southern pine bark beetles and associated insects - Effects of rapidly-released host volatiles on response to aggregation pheromones. Zeitschrift für Angewandte Entomologie 99: 483–491.
Borror DJ. 1960. Dictionary of word roots and combining forms. Mayfield Publishing Company; California. 134 p.
Brown RW. 1956. Composition of scientific words. 2nd ed. Reese Press; Baltimore, Maryland. 882 p.
Chevrolat MA. 1876. Mémoire sur la famille des Clérites. Buquet; Paris, France. 51 p.
Corporaal JB. 1950. Cleridae. *In*: Hinks WD (ed.). Coleopterorum catalogus supplementa, Pars 23 (editio secunda). W. Junk; Gravenhage, The Netherlands. 373 p.
Crowson RA. 1944. Further studies of the metendosternite in Coleoptera. Transactions of the Royal Entomological Society of London 94: 273–310.
de Queiroz K. 2007. Species concepts and species delimitation. Systematic Biology 56(6): 879–886.
Dixon WN, Payne TL. 1979. Aggregation of *Thanasimus dubius* on tree under mass-attack by the southern pine beetle. Environmental Entomology 8(1): 178–181.
Dobzhansky T. 1937. Genetics and the origin of species. Columbia University Press; New York, NY. 364 p.
Dos Santos CAC, Filho FR. 1982. Contibução ao conhecimiento de *Axina bifasciata* (Coleoptera, Cleridae). Arquivos da Universidade Federal Rural do Rio de Janeiro 5(1): 43–46.
Dos Santos CAC, Filho FR. 1986. Consideracoes sobre posicao taxónomica de *Priocera podagrica* Schenkling, 1900 (Coleoptera, Cleridae). Arquivos da Universidade Federal Rural do Rio de Janeiro 9(1–2): 63–70.
Dos Santos CAC, Filho FR. 1987. Una nova especie do genero *Axina* Kirby, 1818 (Coleoptera, Cleridae). Arquivos da Universidade Federal Rural do Rio de Janeiro 10(1–2): 65–67.
Ekis G (now Opitz W). 1975. Taxonomic and nomenclatural status of clerid taxa described by Massimiliano Spinola (1780-1857) (Coleoptera: Cleridae). Bolletino del Museo di Zoologia dell'Università di Torino 1: 1–80.
Ekis G (now Opitz W). 1977. Classification, phylogeny, and zoogeography of the genus *Perilypus* (Coleoptera: Cleridae). Smithsonian Contributions to Zoology 227: 1–138.
Gerstmeier R, Eberle J. 2010. Revision of the Indo-Australian checkered beetle genus *Xenorthrius* Gorham, 1892 (Coleoptera: Cleridae, Clerinae). Zootaxa 2584: 1–121.
Goloboff PA. 2003. NONA version 2.0. A tree searching program. Distributed by the author. [Program available at https://www.softpedia.com/get/Science-CAD/NONA.shtml (Last accessed on July 13, 2020)].
Gregory-Wodzicki KM. 2000. Uplift history of the Central and Northern Andes. GSA Bulletin 112(7): 1091–1105.
Harwood WG, Rudinsky JA. 1966. The flight and olfactory behavior of checkered beetles (Coleoptera: Cleridae) predatory on the douglas-fir beetle. Oregon State University Agricultural Experiment Station, Technical Bulletin 95: 1–36.
Hennig W. 1966. Phylogenetic systematics. Illinois University Press; Urbana, Illinois. 263 p.
(ICZN) International Code of Zoological Nomenclature. 1999. 4th Edition. Adopted by the International Union of Biological Sciences. The International Trust for Zoological Nomenclature; London, United Kingdom. 306 p.
Kirby W. 1818. A century of insects, including several new genera described from his cabinet. The Transactions of the Linnean Society of London 12(2): 375–453.
Kirsch TF. 1874. Beiträge zur Kenntniss der Peruanischen Käferfauna auf Dr. Abendroth's Sammlungen basirt. Berliner Entomologische Zeitschrift 17: 338–418.
Mayr E. 1963. Animal species and evolution. Harvard University Press; Cambridge, Massachusetts. 797 p.
Montes C, Cardona A, Jaramillo C, Pardo A, Silva JC, Valencia V, Ayala C, Pérez-Angel LC, Rodrigues-Parra LA, Ramirez V, Niño H. 2015. Middle Miocene closure of the Central American Seaway. Science 348(6231): 226–229.
Nixon KC, Carpenter JM. 1993. On outgroups. Cladistics 9: 413–426.
Nixon KC. 2002. Winclada ver. 1.00.08. Published by the author. Available at https://www.scienceopen.com/document?vid=43b1dfb7-05cc-491a-8a57-1cf386a27699 (Last accessed on July 7, 2020).
Opitz W. 2003. Spermatophores and spermatophore producing internal organs of Cleridae (Coleoptera: Clerinae): Their biological and phylogenetic significance. The Coleopterists Bulletin 57(2): 167–190.
Opitz W. 2010. Classification, evolution, and subfamily composition of the Cleridae, and generic content and key of the subfamilies (Coleoptera: Cleroidea). Entomologica Basiliensia et Collectionis Frey 32: 31–128.
Opitz W. 2011. Classification, natural history, and evolution of the Epiphloeinae (Coleoptera: Cleridae). Part IX. The genus *Megaphloeus* Opitz, 2010. Entomologica Basiliensia et Collectionis Frey 33: 63–132.
Opitz W. 2014. Morphologic studies of the alimentary canal and internal reproductive organs of the Chaetosomatidae and the Cleridae (Coleoptera: Cleroidea) with comparative morphology and taxonomic analyses. Insecta Mundi 0342: 1–40.
Papp CS. 1960. The Cleridae of North America. Part I. The geographical distribution of Cleridae of North America, north of the Panama Canal. Bulletin of the Southern California Academy of Sciences 59(20): 76–88.
Pic M. 1936. Nouveautés diverses. Mélanges Exotico-Entomologiques 67: 1–36.
Pic M. 1941. Coléoptères du Globe. L'Échange, Revue Linnéenne 57(485): 9–12.

Pic M. 1946. Coléoptères du Globe. L'Échange, Revue Linnéenne 62(506): 13–16.
Pic M. 1948. Nouveaux Clérides exotiques (Col.). Tijdschrift voor Entomologie 89: 131–132.
Pic M. 1950. Coléoptères du Globe. L'Échange 66(521): 10–12.
Schenkling S. 1900. Neue amerikanische Cleriden nebst Bemerkungen zu schon Beschriebenen Arten. Deutschen Entomologische Zeitschrift 1900: 385–409.
Schenkling S. 1902. Clérides nouveaux du Muséum d'Histoire Naturelle de Paris. Bulletin du Muséum d'Histoire Naturelle 5: 317–332.
Schenkling S. 1906. Die Cleriden des Deutschen Entomologischen National-Museums, nebst beschreibungen neuer Arten. Deutsche Entomologische Zeitschrift 1: 241–320.
Schenkling S. 1907. Neue Cleriden von Zentral-Amerika nebst Bemerkungen über die Beziehungen der mittel-amerikanischen Cleriden zu denen des übrigen Amerika. Deutsche Entomologische Zeitschrift 1907: 297–313.
Spinola M. 1844. Essai Monographique sur les Clérites: Insectes Coléoptéres. Tome 1. Impremerie des frères Ponthenier; Genoa, Italy. 386 p.
Standfuss M. 1896. Handbuch der paläarktischen Gross-Schmetterlinge für Forscher und Sammler. Gustav Fischer; Jena, Germany. 392 p.
Tuomikoski R. 1967. Notes on some principles of phylogenetic systematics. Annales Entomologici Fennici 33(3): 137–147.
Watrous LE, Wheeler QD. 1981. The out-group comparison method of character analysis. Systematic Zoology 30: 1–11.
Winkler JR. 1961. Buntkäfer. A. Ziensen Verlag; Wittenberg Lutherstadt, Germany. 108 p.

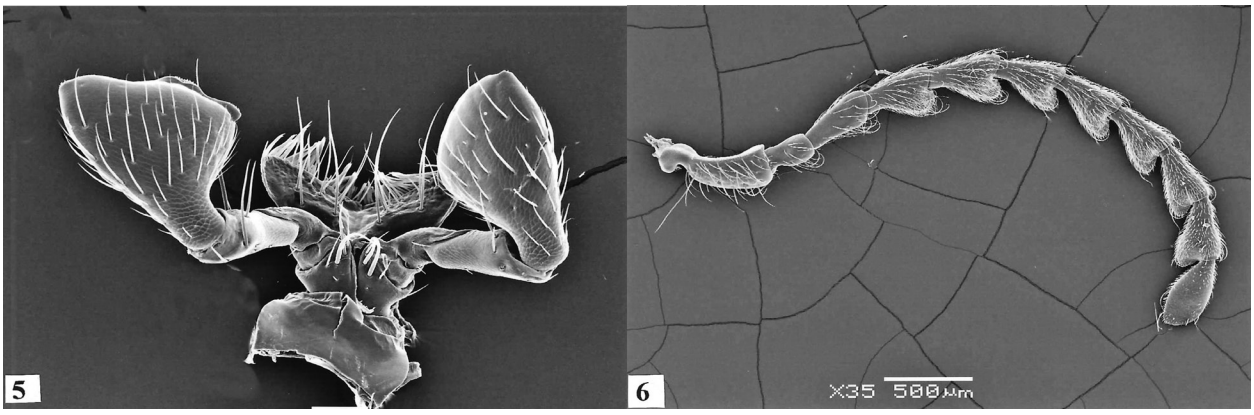
Received June 5, 2020; accepted July 14, 2020.
Review editor Paul E. Skelley.



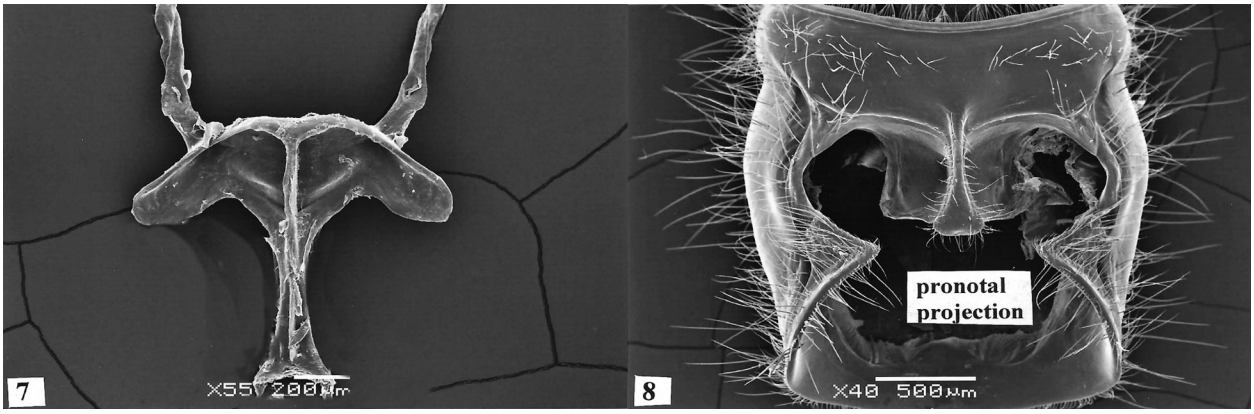
Figures 1–2. Structure of *Axina analis*. **1**) Mouthparts. **2**) Gula.



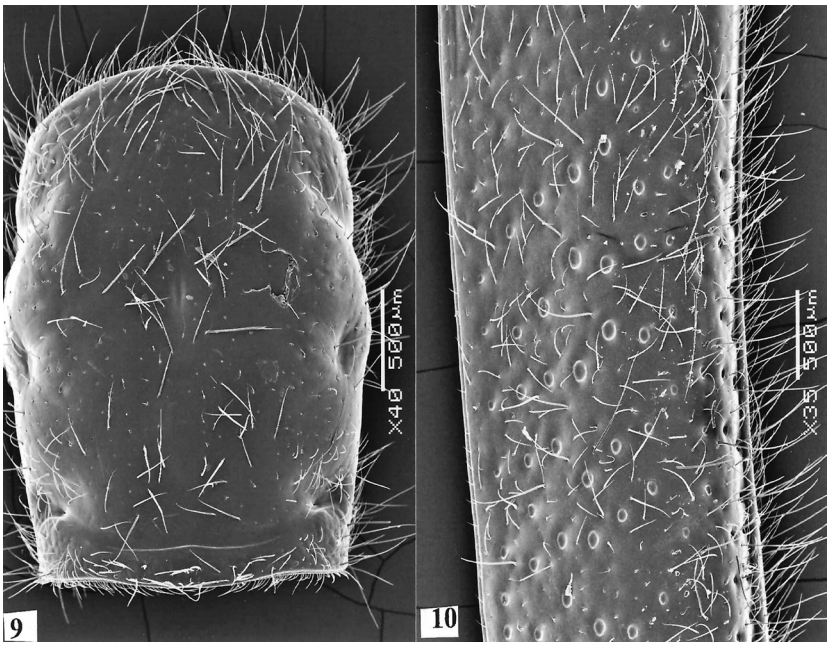
Figures 3–4. Structure of *Axina analis*. **3**) Mandible. **4**) Maxilla.



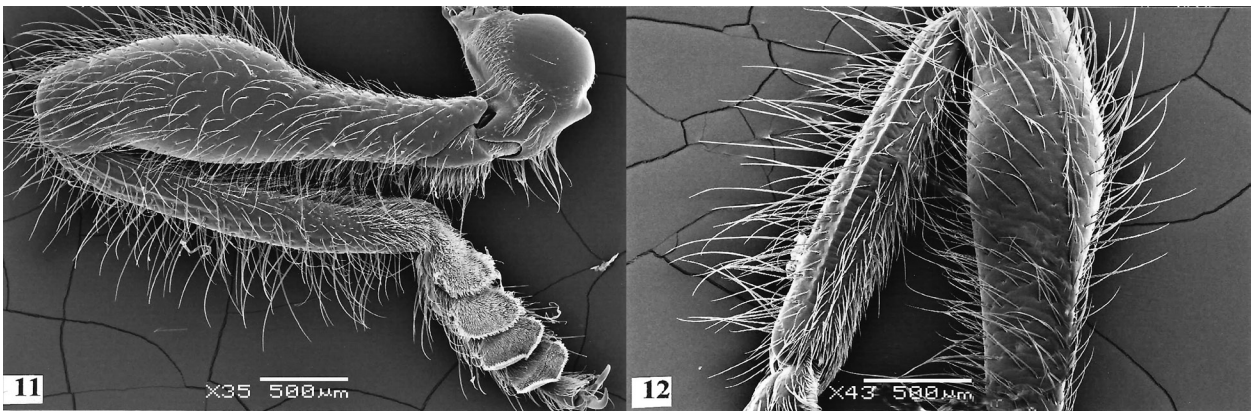
Figures 5–6. Structure of *Axina analis*. **5)** Labium. **6)** Antenna.



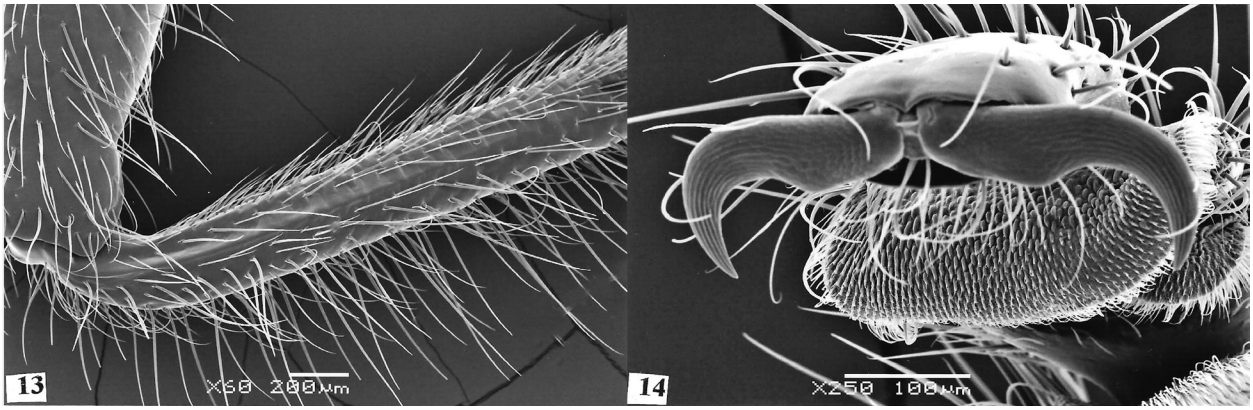
Figures 7–8. Structure of *Axina analis*. **7)** Metendosternite. **8)** Prothorax.



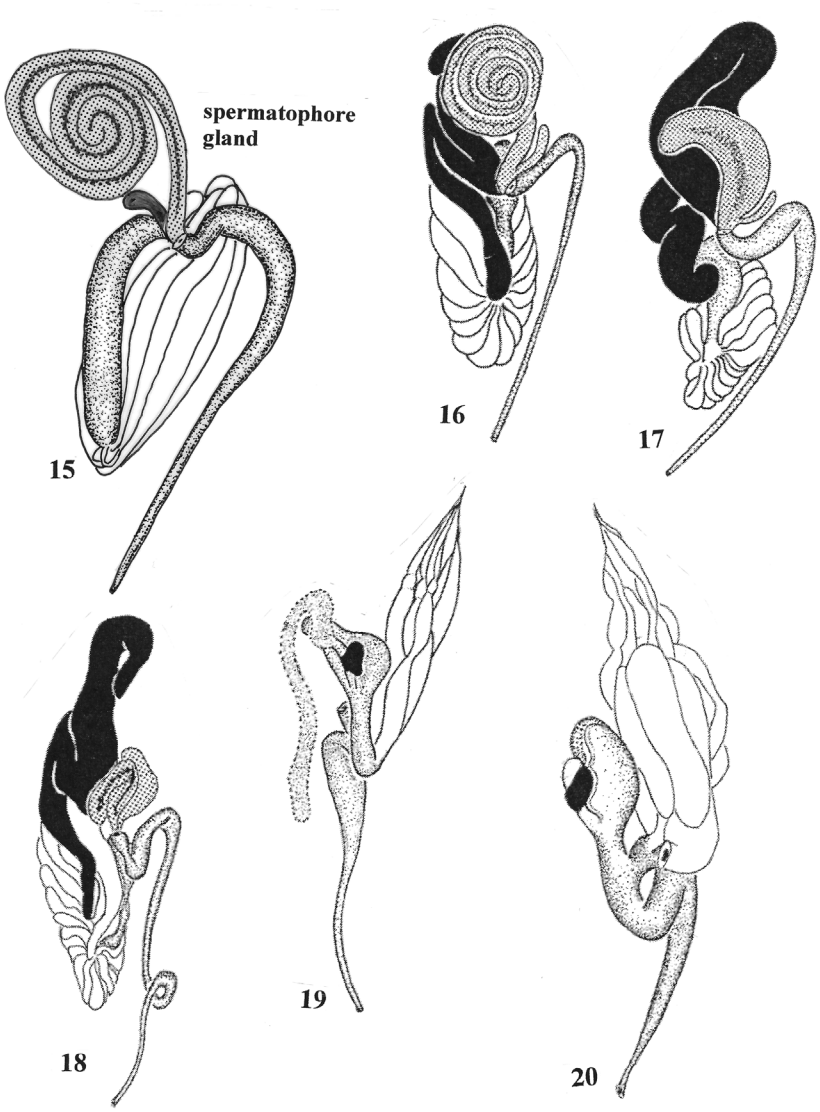
Figures 9–10. Structure of *Axina analis*. **9)** Pronotum. **10)** Elytron.



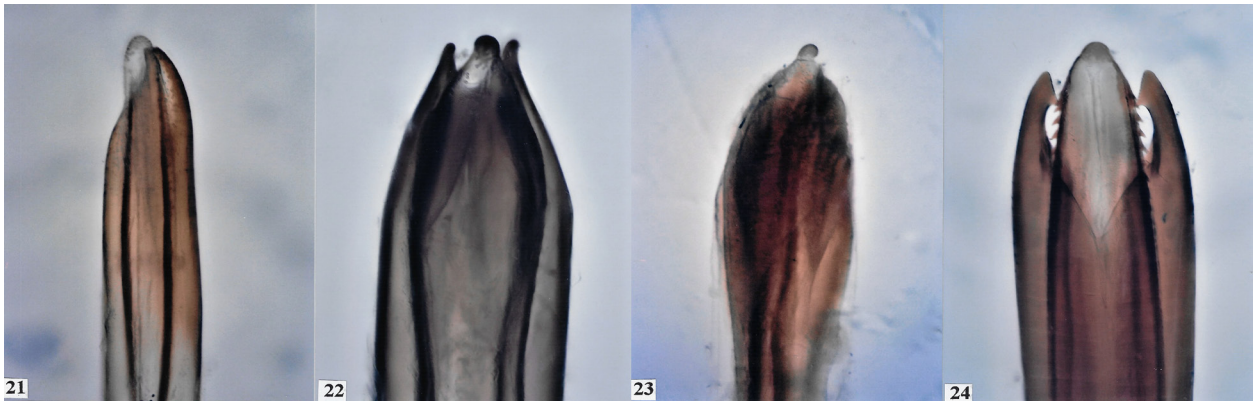
Figures 11–12. Structure of *Axina analis*. **11)** Prothoracic leg. **12)** Mesothoracic leg.



Figures 13–14. Structure of *Axina analis*. **13)** Metathoracic leg. **14)** Unguis.

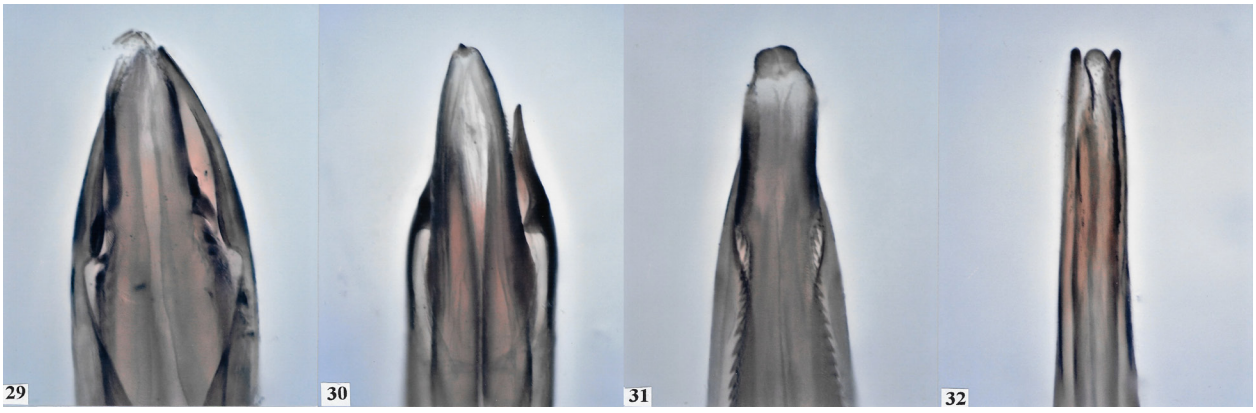


Figures 15–20. Male internal reproductive organs. **15**) *Axina atmis*. **16**) *A. plagiata*. **17**) *A. bifasciata*. **18**) *A. conspicua*. Female internal reproductive organs. **19**) *A. parcepunctata*. **20**) *A. conspicua*.

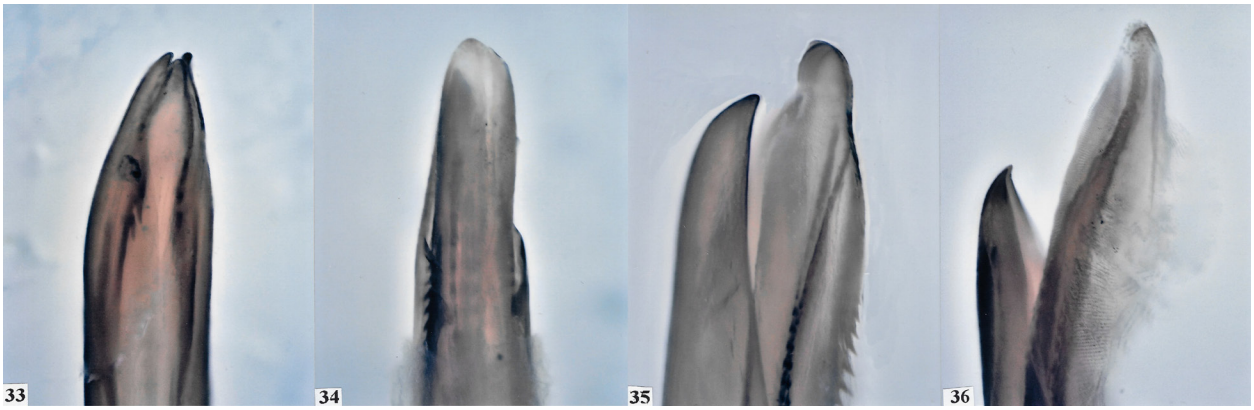


Figures 21–24. Aedeagi. **21**) *Axina atmis*. **22**) *A. bahia*. **23**) *A. brunnea*. **24**) *A. lobispinula*.

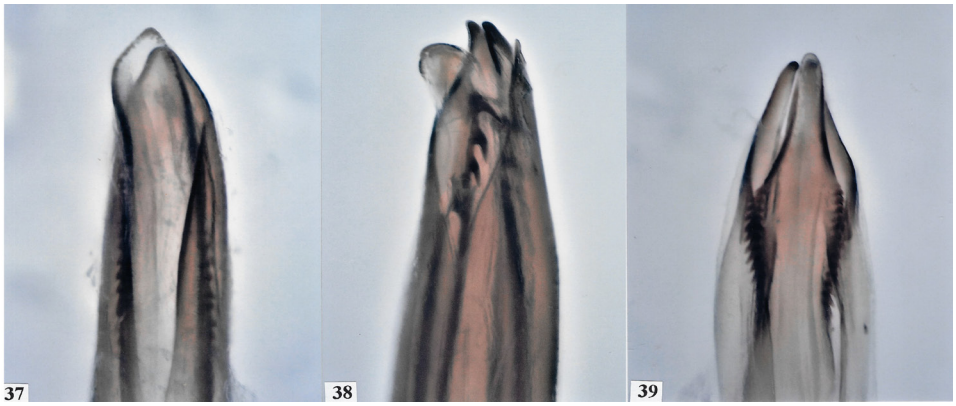
Figures 25–28. Aedeagi. **25**) *Axina bella*. **26**) *A. ignota*. **27**) *A. klisis*. **28**) *A. luzia*.



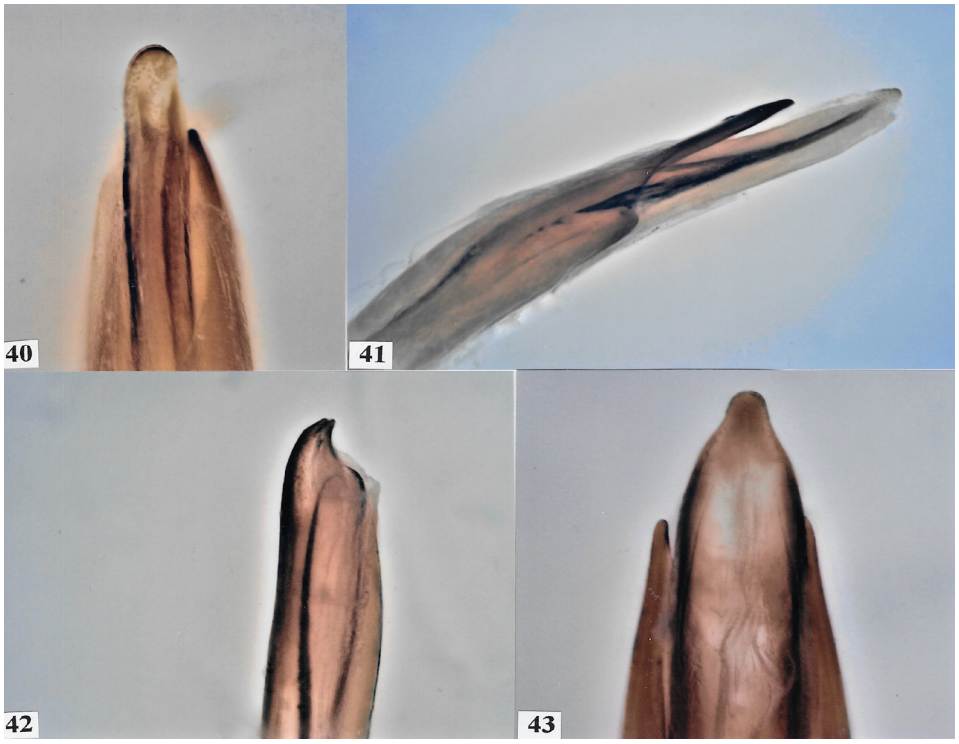
Figures 29–32. Aedeagi. **29**) *Axina minas*. **30**) *A. megaspina*. **31**) *A. pallidioccabus*. **32**) *A. pollex*.



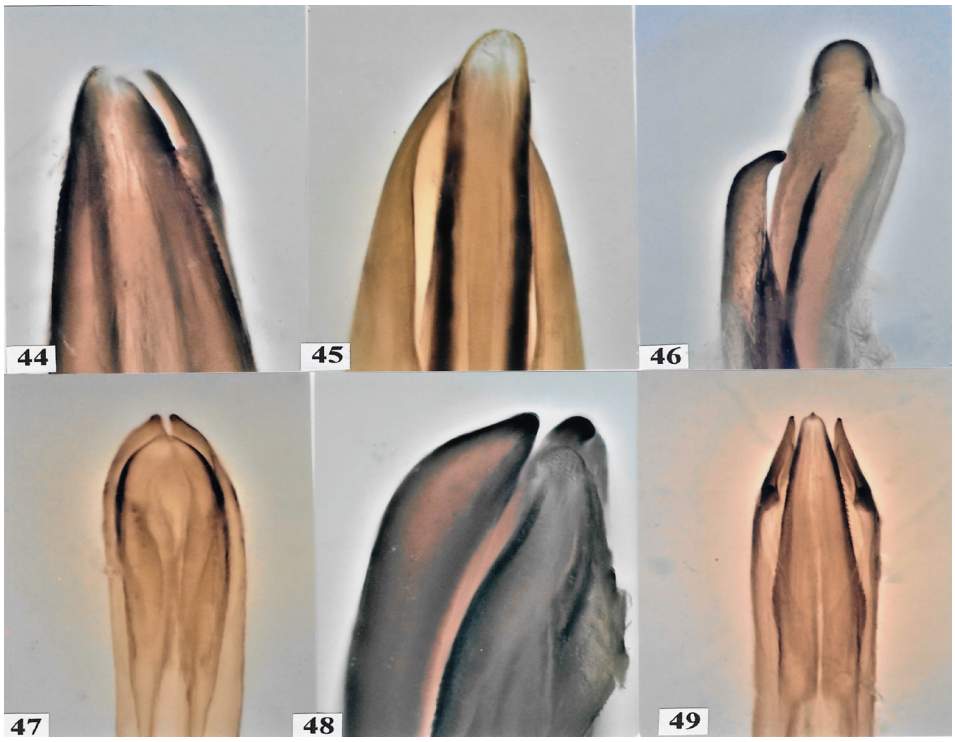
Figures 33–36. Aedeagi. **33**) *Axina polycaula*. **34**) *A. ochra*. **35**) *A. rio*. **36**) *A. spina*.



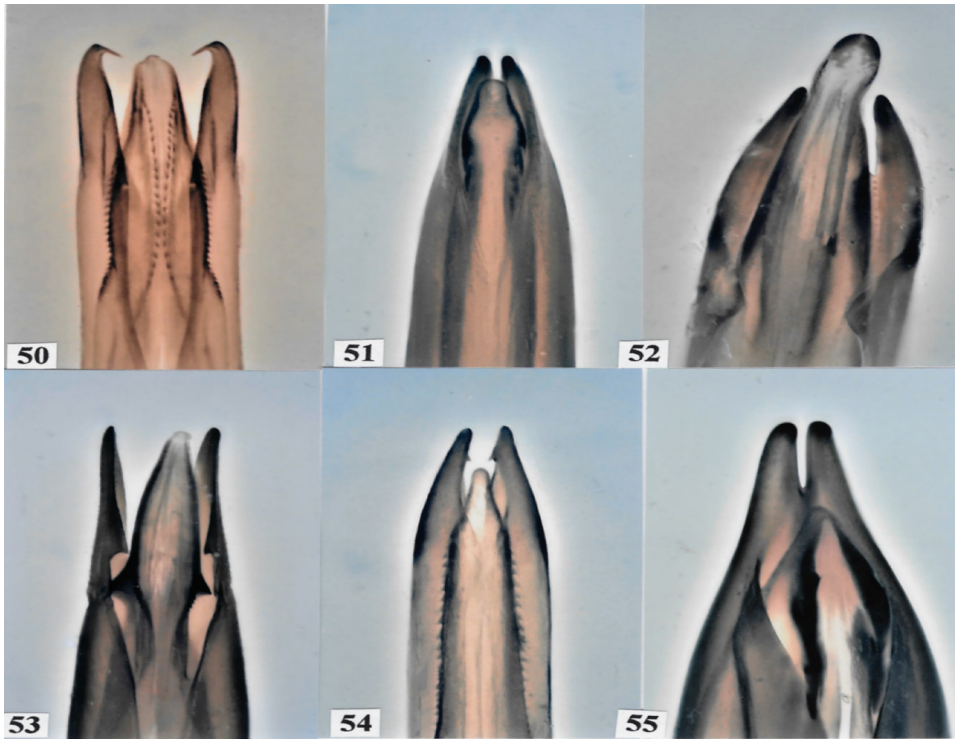
Figures 37–39. Aedeagi. **37**) *Axina schenklingi*. **38**) *A. villa*. **39**) *A. vista*.



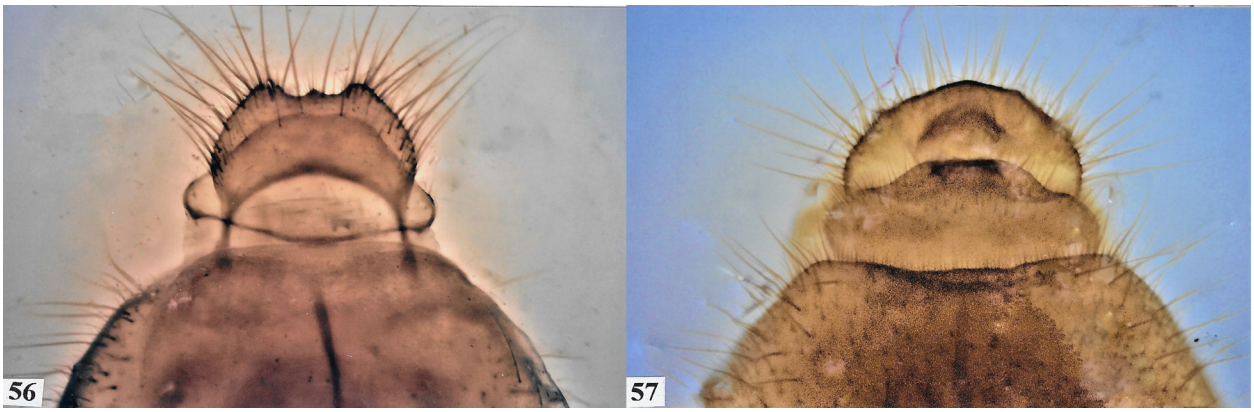
Figures 40–43. Aedeagi. **40**) *Axina diversesignata*. **41**) *A. orcastomata*. **42**) *A. plagiata*. **43**) *A. adelosa*.



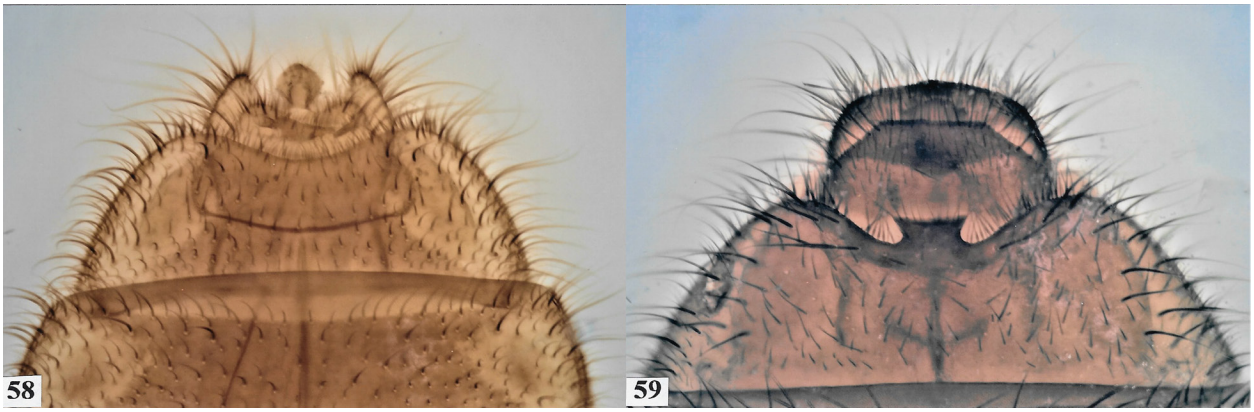
Figures 44–49. Aedeagi. **44**) *Axina chiasta*. **45**) *A. conspicua*. **46**) *A. fasciata*. **47**) *A. centrimaculata*. **48**) *A. fortipes*. **49**) *A. furcula*.



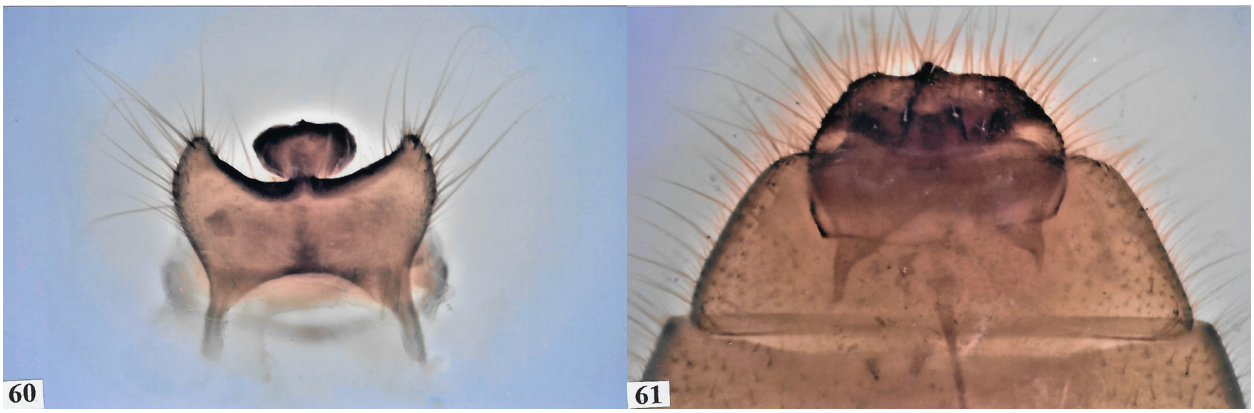
Figures 50–55. Aedeagi. **5)** *Axina basalis*. **51**) *A. lateralis*. **52**) *A. munda*. **53**) *A. phallospina*. **54**) *A. proxima*. **55**) *A. trinalis*.



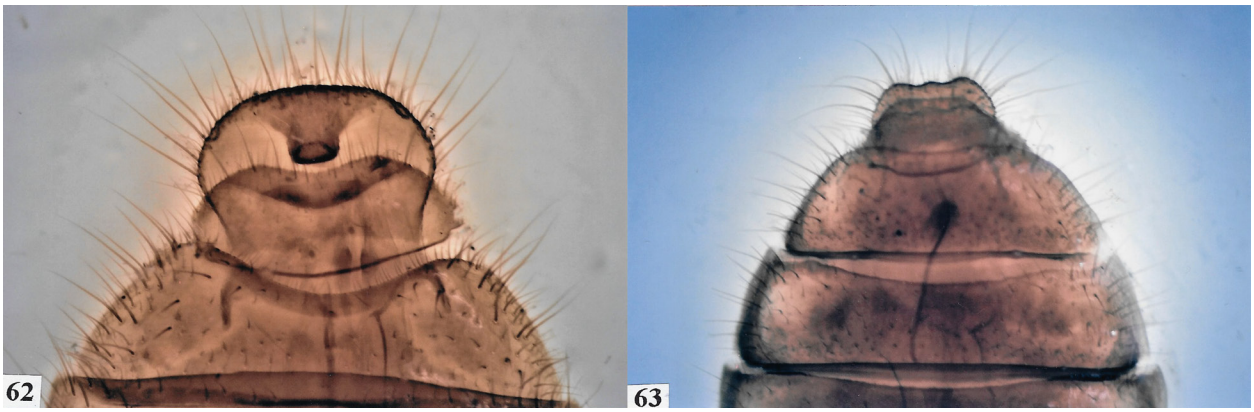
Figures 56–57. Female genitalia. **56**) *Axina ordinis*. **57**) *A. basalis*.



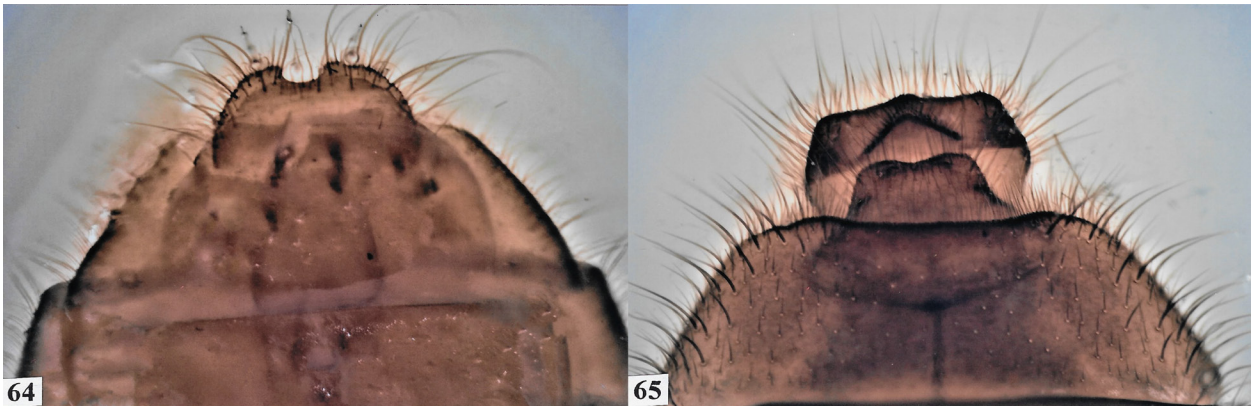
Figures 58–59. Female genitalia. **58**) *Axina conspicua*. **59**) *A. fortipes*.



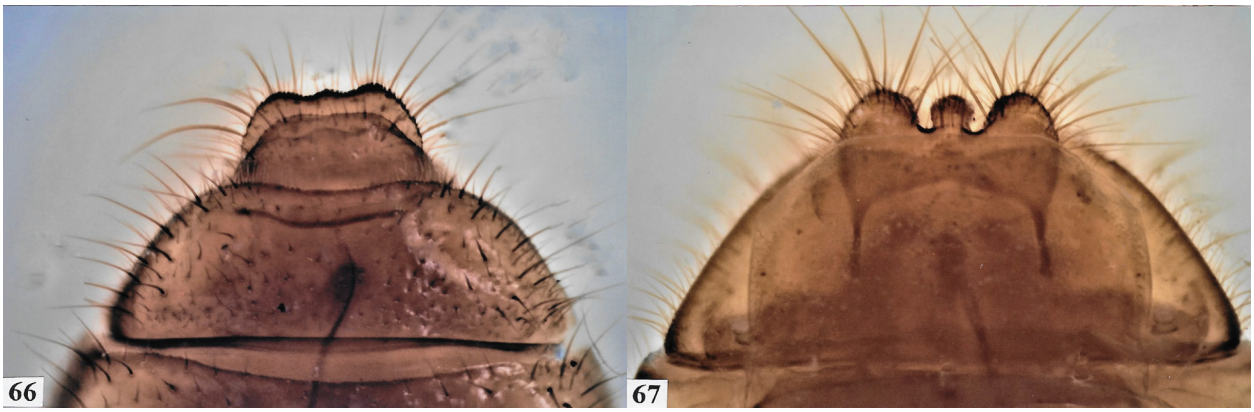
Figures 60–61. Female genitalia. **60**) *Axina ignota*. **61**) *A. latilinea*.



Figures 62–63. Female genitalia. **62**) *Axina piperata*. **63**) *A. polycaula*.



Figures 64–65. Female genitalia. **64**) *Axina pollex*. **65**) *A. phallospina*.



Figures 66–67. Female genitalia. **66**) *Axina polycaula*. **67**) *A. trinalis*.

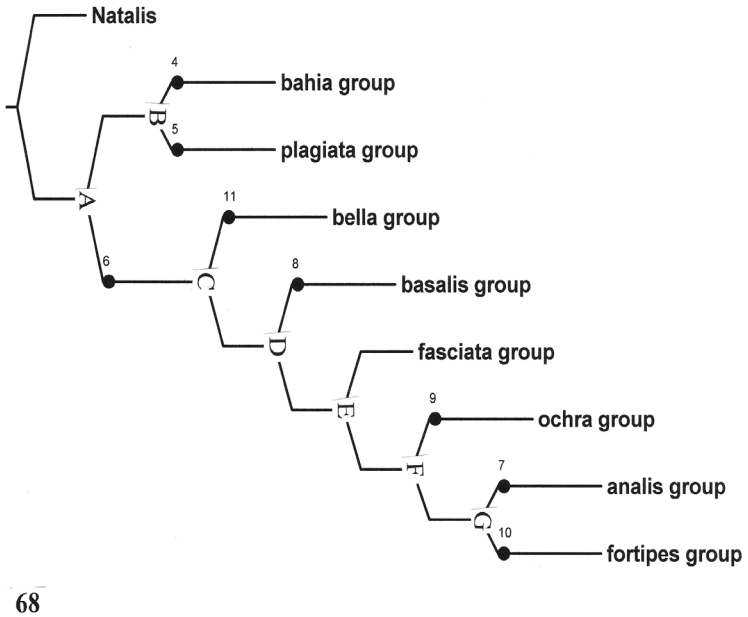


Figure 68. Phylogenetic hypothesis (prepared via WINCLADA/NONA).

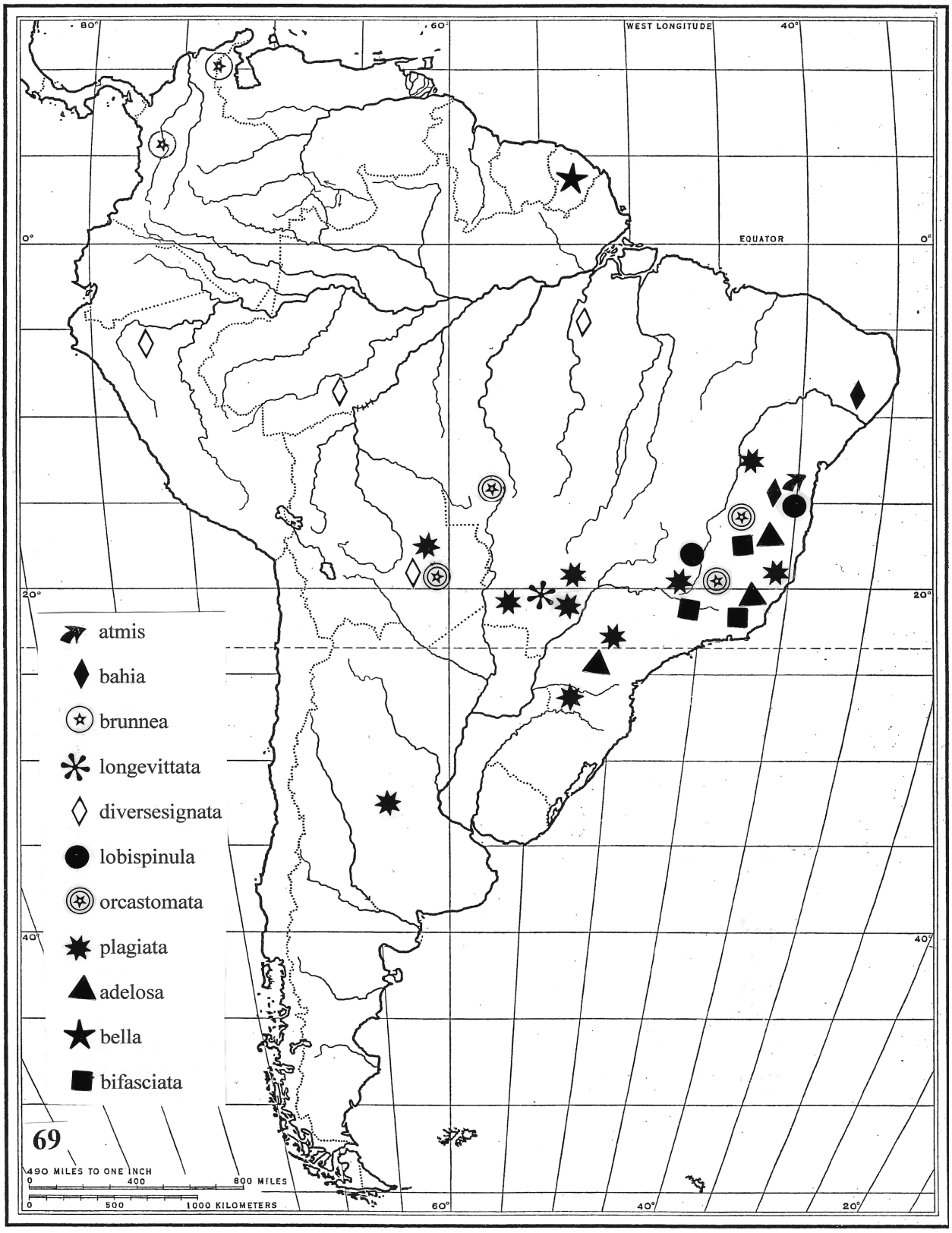


Figure 69. Distribution map for *Axina* species: *A. atmis*, *A. bahia*, *A. brunnea*, *A. longevittata*, *A. diversesignata*, *A. lobispinula*, *A. orcastomata*, *A. plagiata*, *A. adelosa*, *A. bella*, *A. bifasciata*.

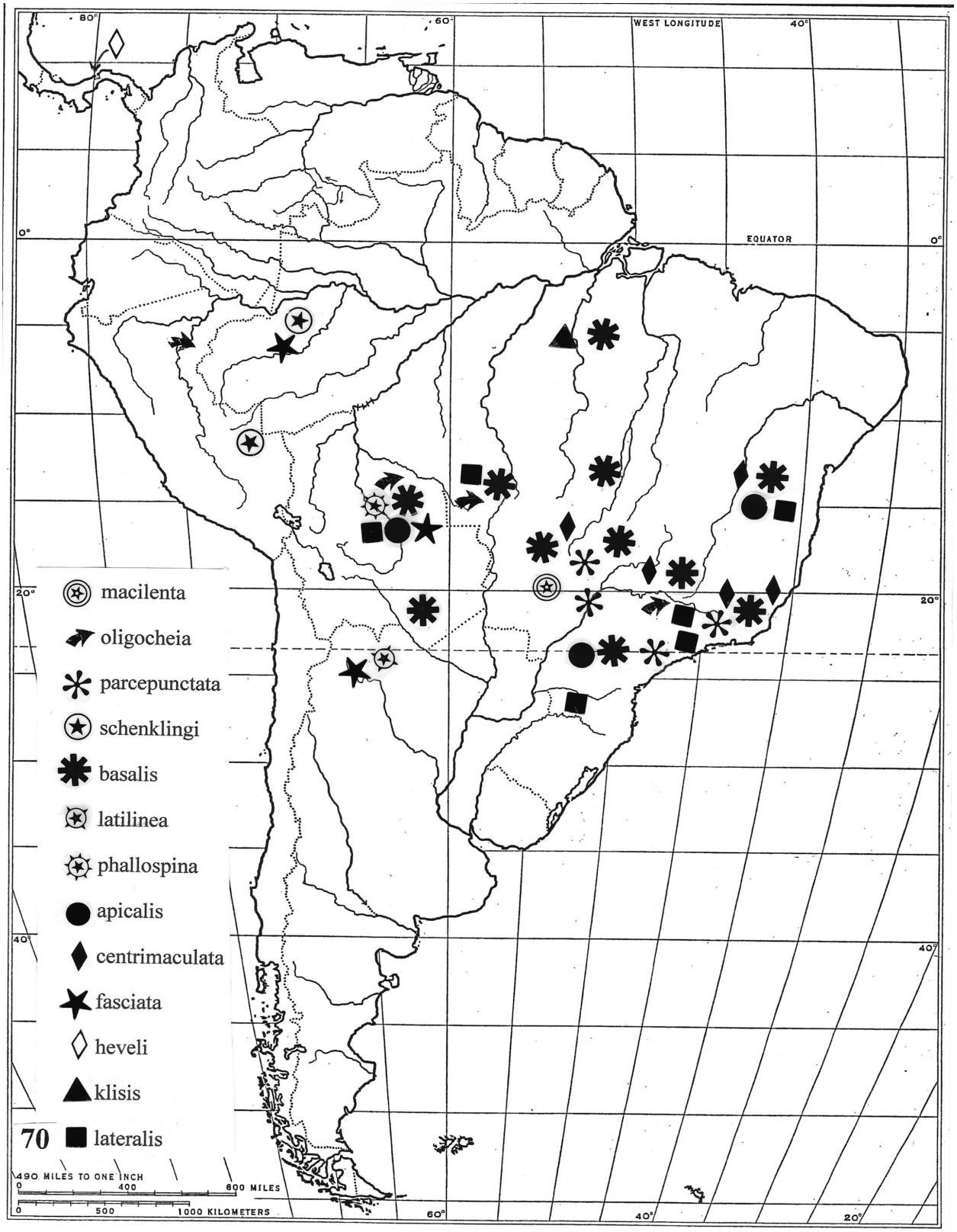


Figure 70. Distribution map for *Axina* species: *A. macilenta*, *A. oligocheia*, *A. parcepunctata*, *A. schenklingi*, *A. basalis*, *A. latilinea*, *A. phallospina*, *A. apicalis*, *A. centrimaculata*, *A. fasciata*, *A. heveli*, *A. klisis*, *A. lateralis*.

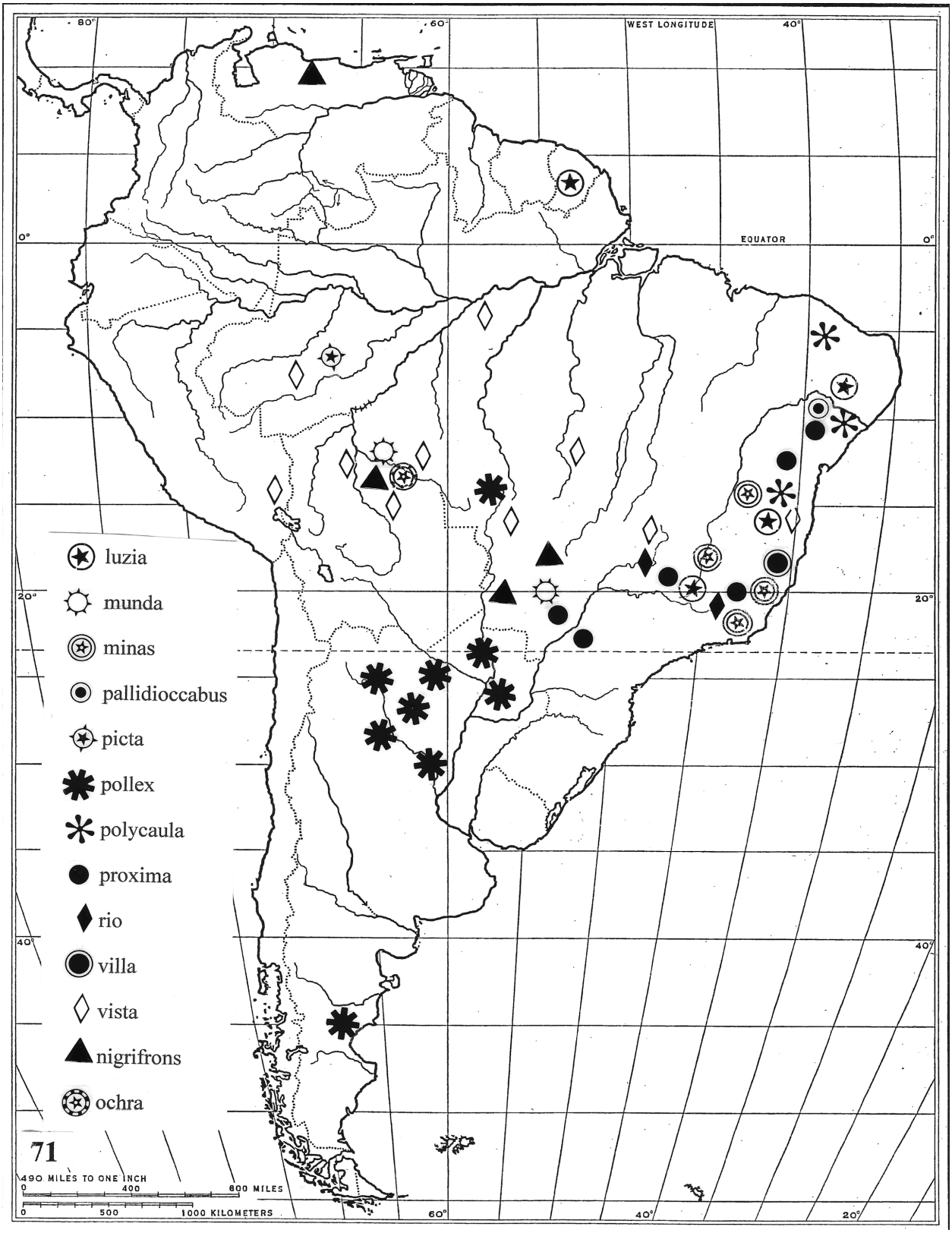


Figure 71. Distribution map for *Axina* species: *A. luzia*, *A. munda*, *A. minas*, *A. pallidioccabus*, *A. picta*, *A. pollex*, *A. polycaula*, *A. proxima*, *A. rio*, *A. villa*, *A. vista*, *A. nigrifrons*, *A. ochra*.

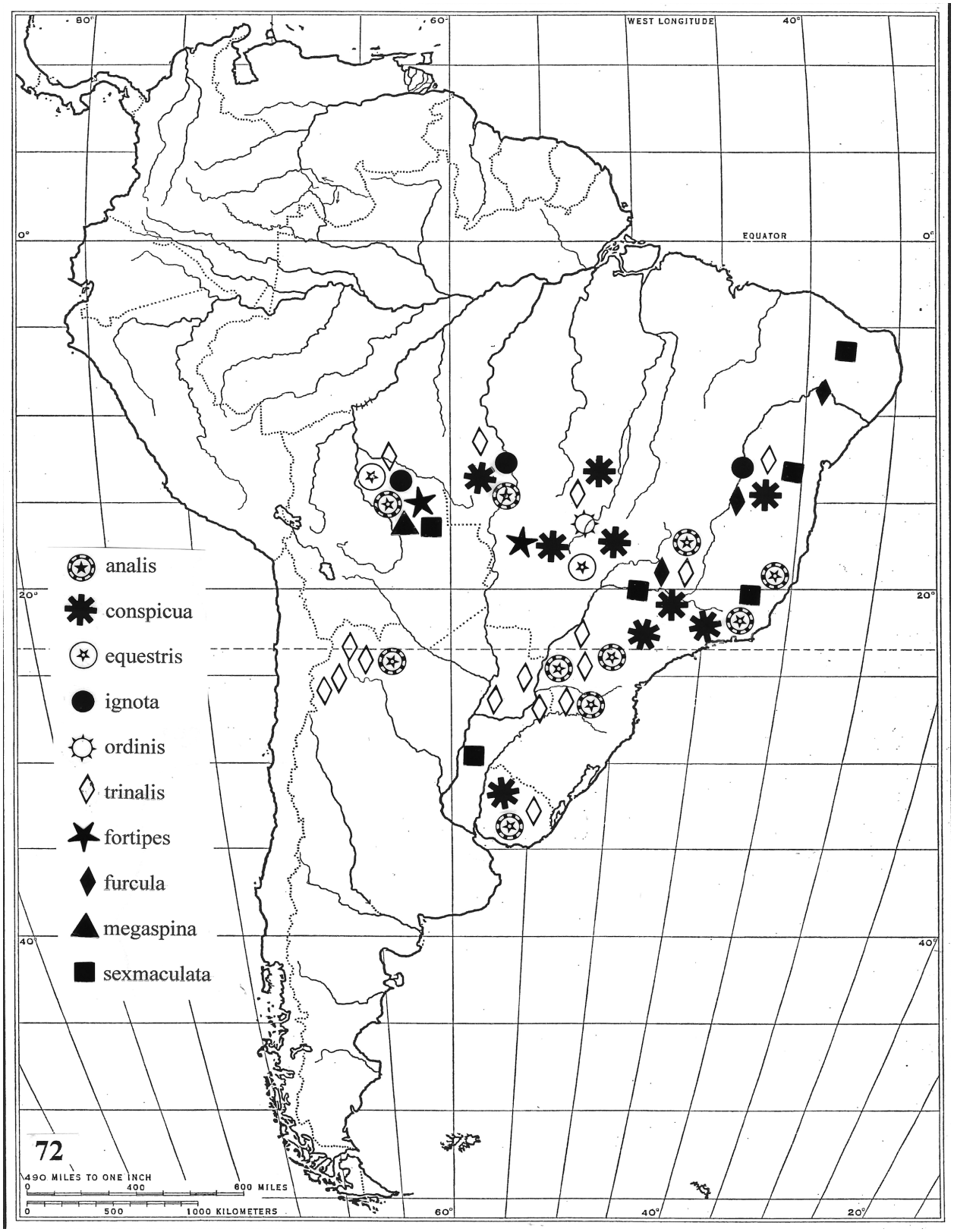


Figure 72. Distribution map for *Axina* species: *A. analis*, *A. conspicua*, *A. equestris*, *A. ingnota*, *A. ordinis*, *A. trinalis*, *A. fortipes*, *A. furcula*, *A. megaspina*, *A. sexmaculata*.

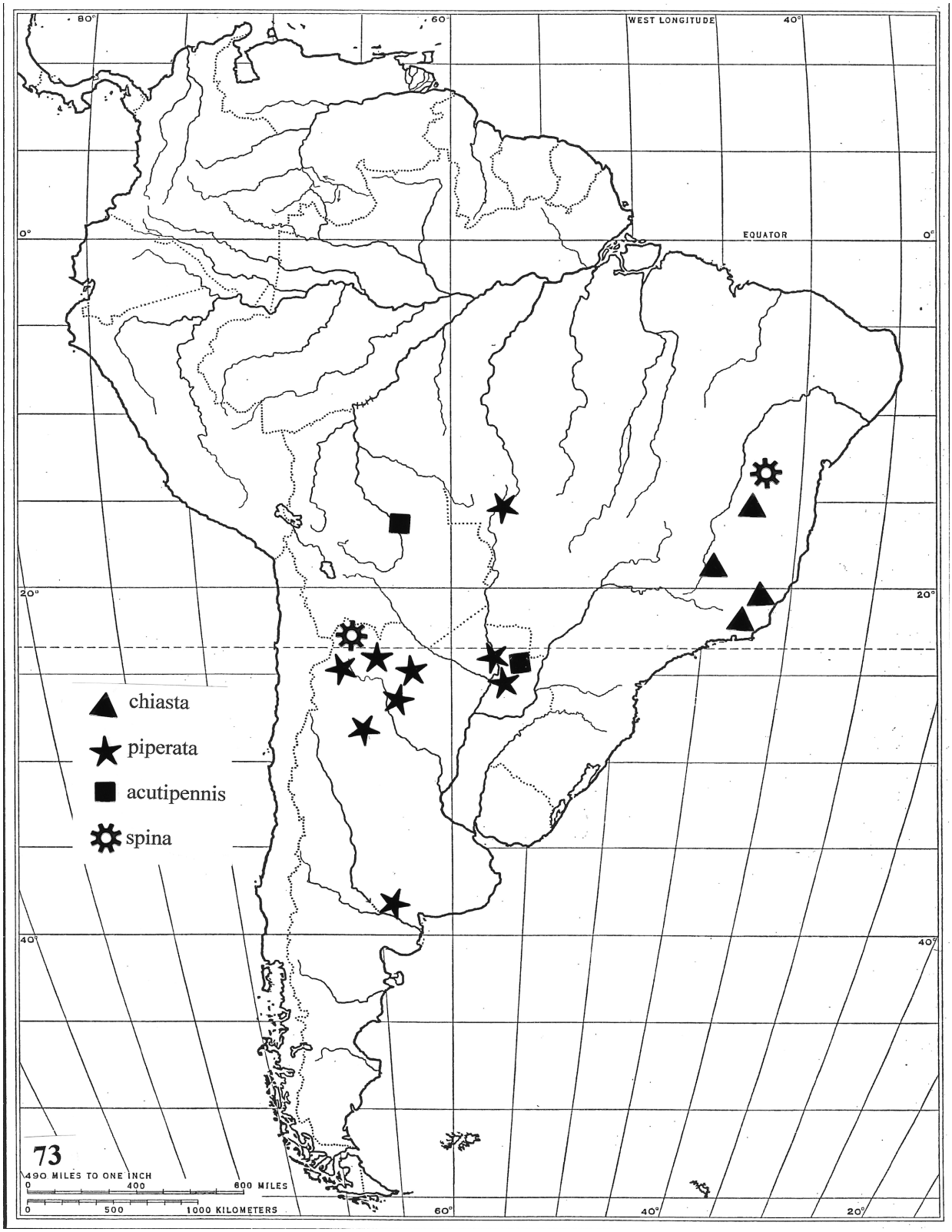
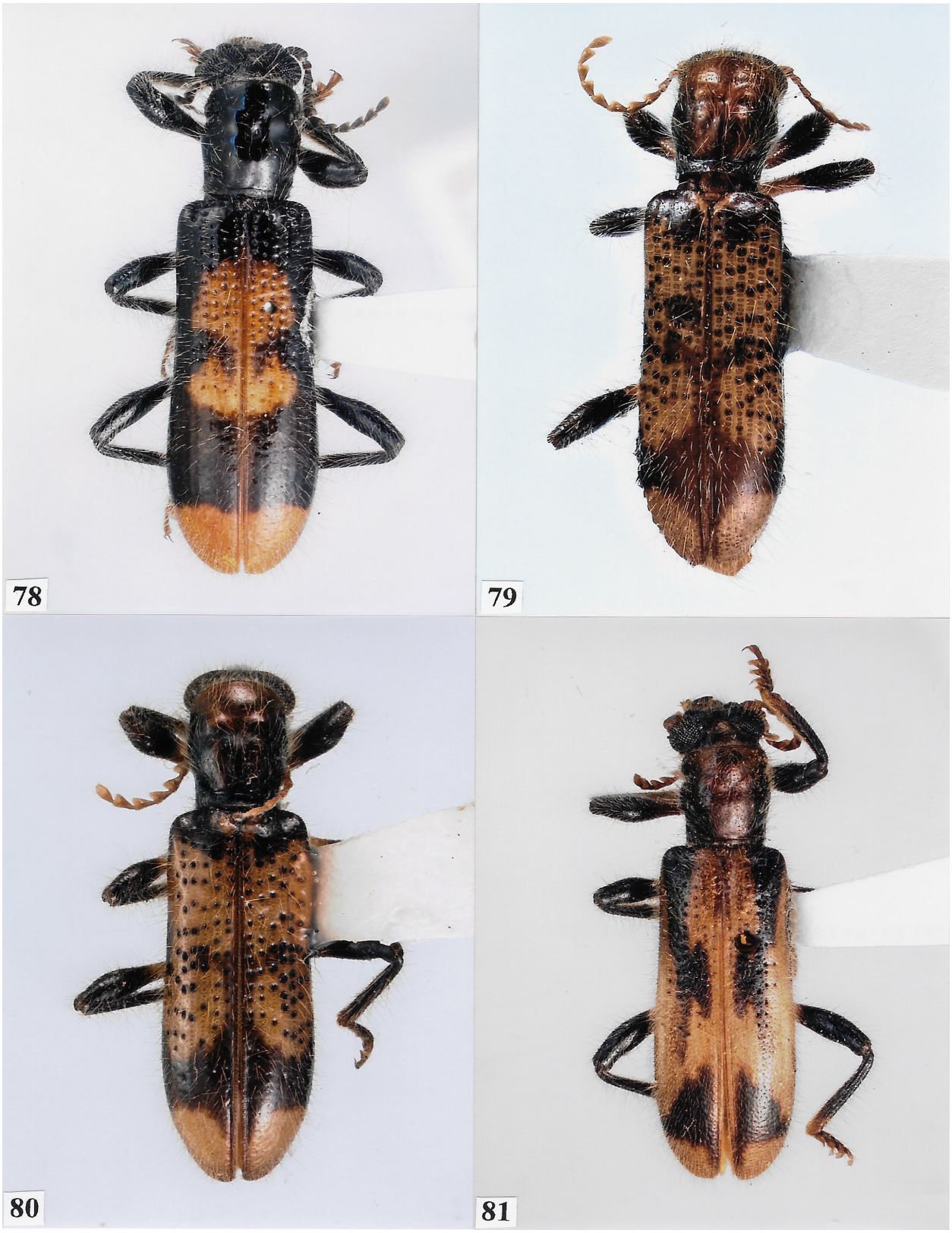
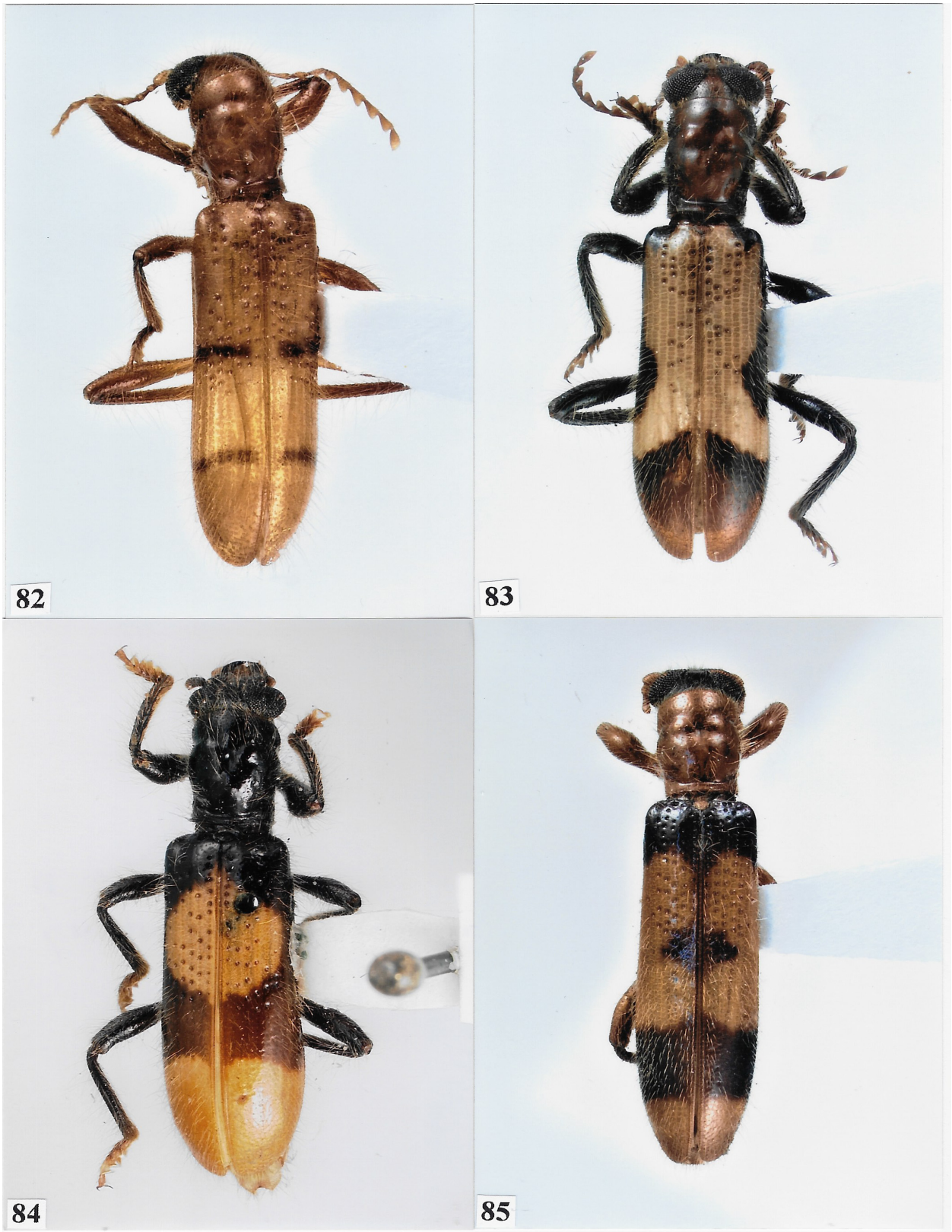


Figure 73. Distribution map for *Axina* species: *A. chiasta*, *A. piperata*, *A. acutipennis*, *A. spina*.

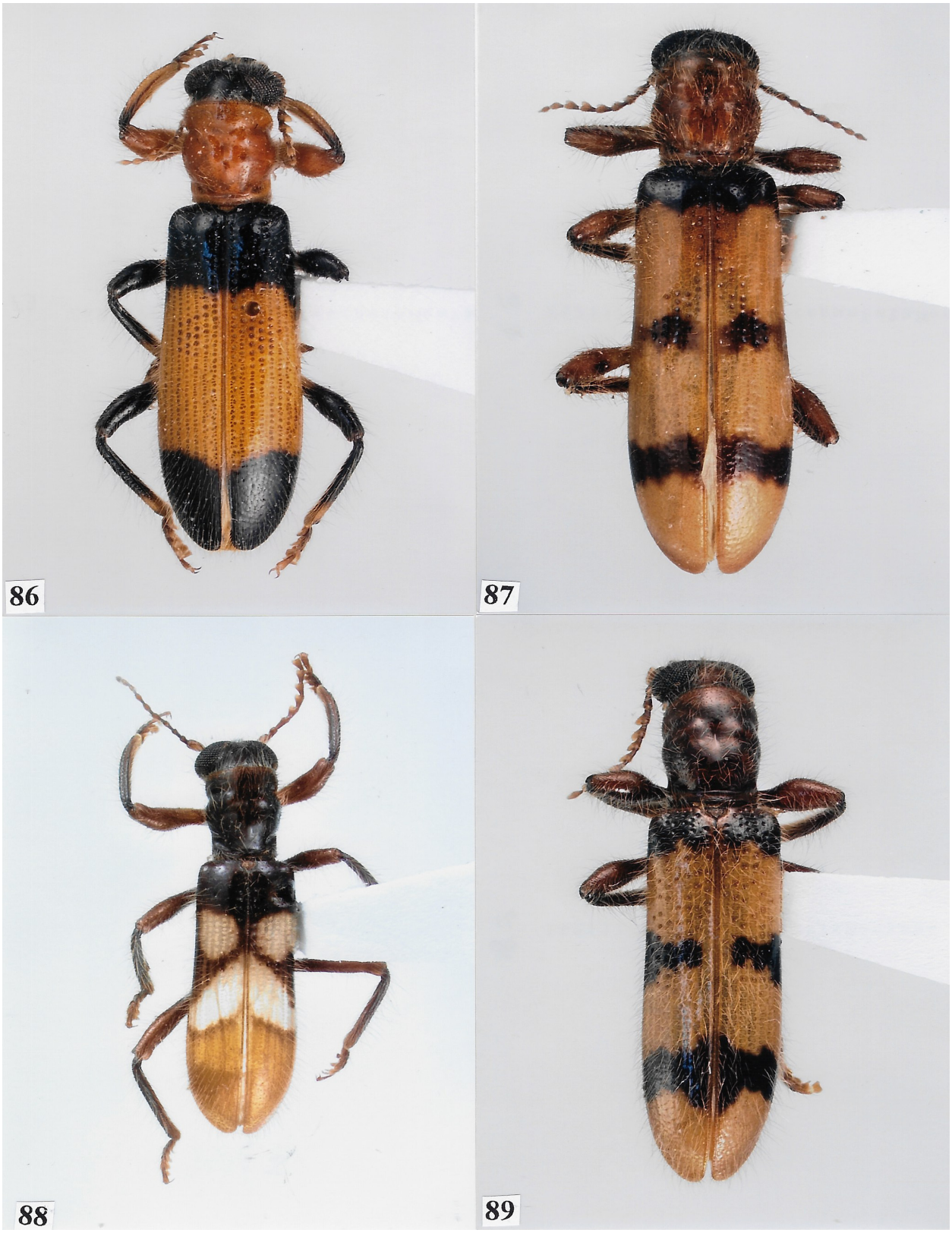
Figures 74–77. Habitus of *Axina* species. **74**) *Axina atmis*. **75**) *A. bahia*. **76**) *A. brunnea*. **77**) *A. longevittata*.



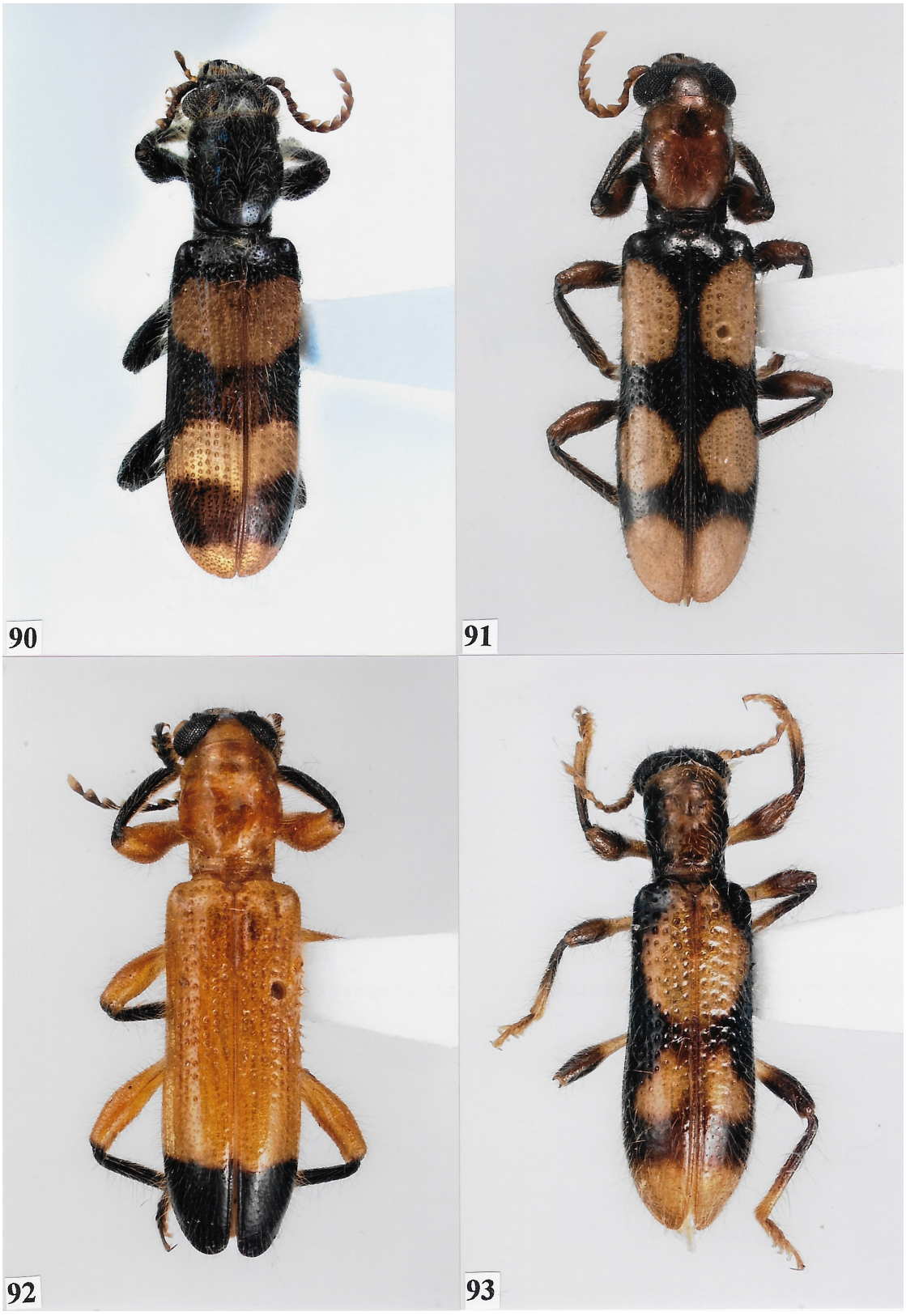
Figures 78–81. Habitus of *Axina* species. **78**) *Axina diversesignata*. **79**) *A. lobispinula*. **80**) *A. orcastomata*. **81**) *A. plagiata*.



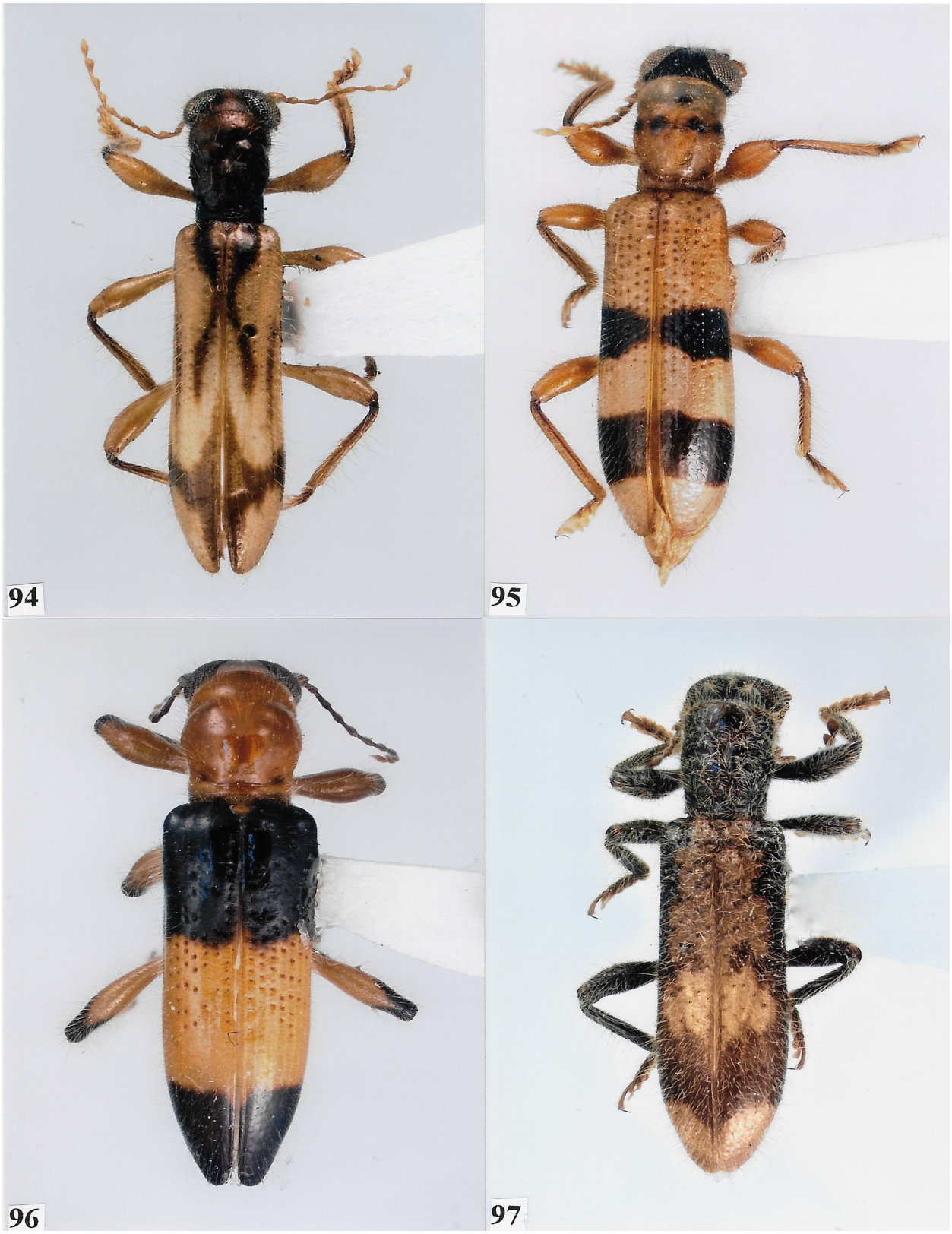
Figures 82–85. Habitus of *Axina* species. **82**) *Axina adelosa*. **83**) *A. bella*. **84**) *A. bifasciata*. **85)** *A. macilenta*.



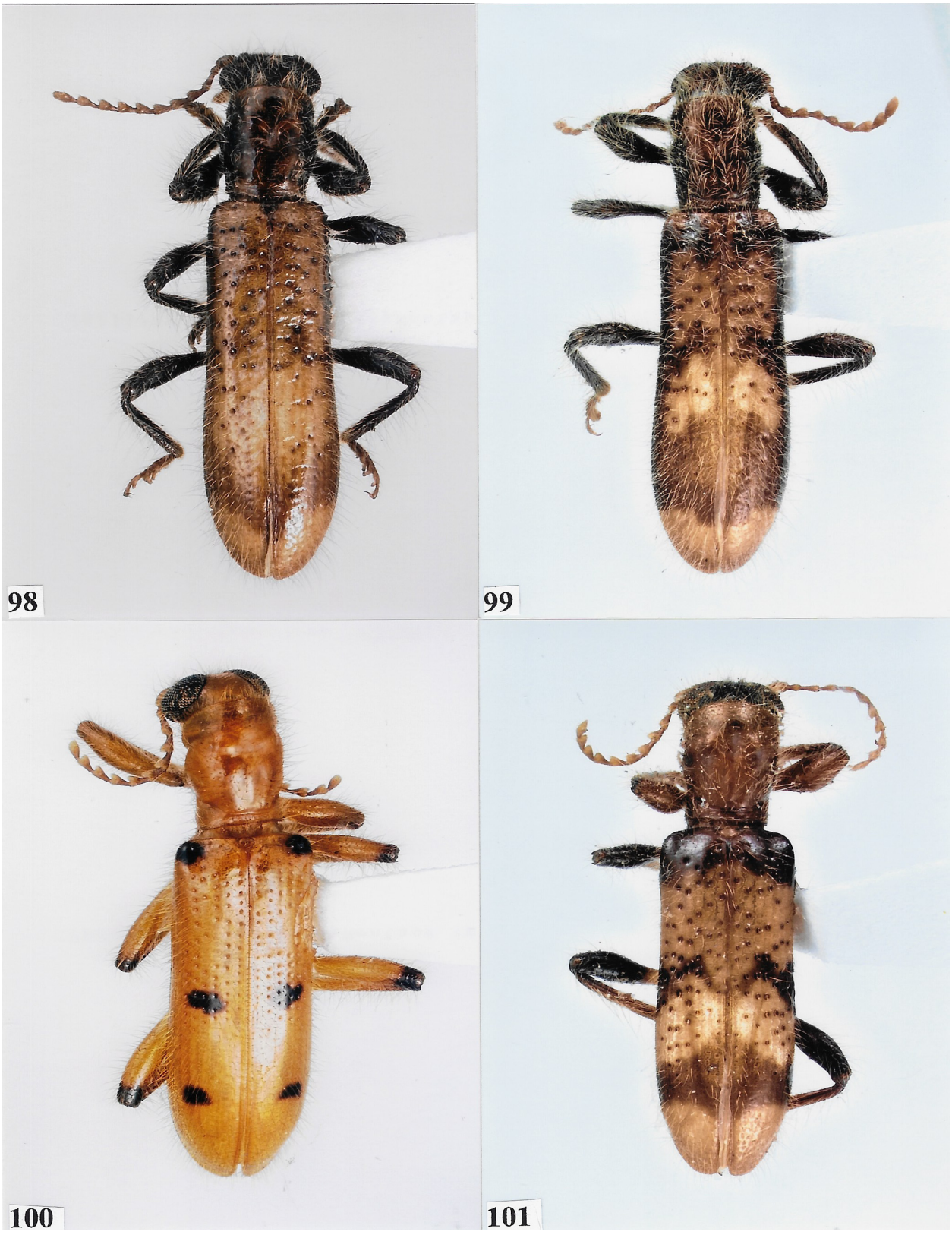
Figures 86–89. Habitus of *Axina* species. **86**) *Axina oligocheia*. **87**) *A. parcepunctata*. **88**) *A. schenklingi*. **89**) *A. basalis*.



Figures 90–93. Habitus of *Axina* species. **90**) *Axina latilinea*. **91**) *A. phallospina*. **92**) *A. apicalis*. **93**) *A. centrimaculata*.



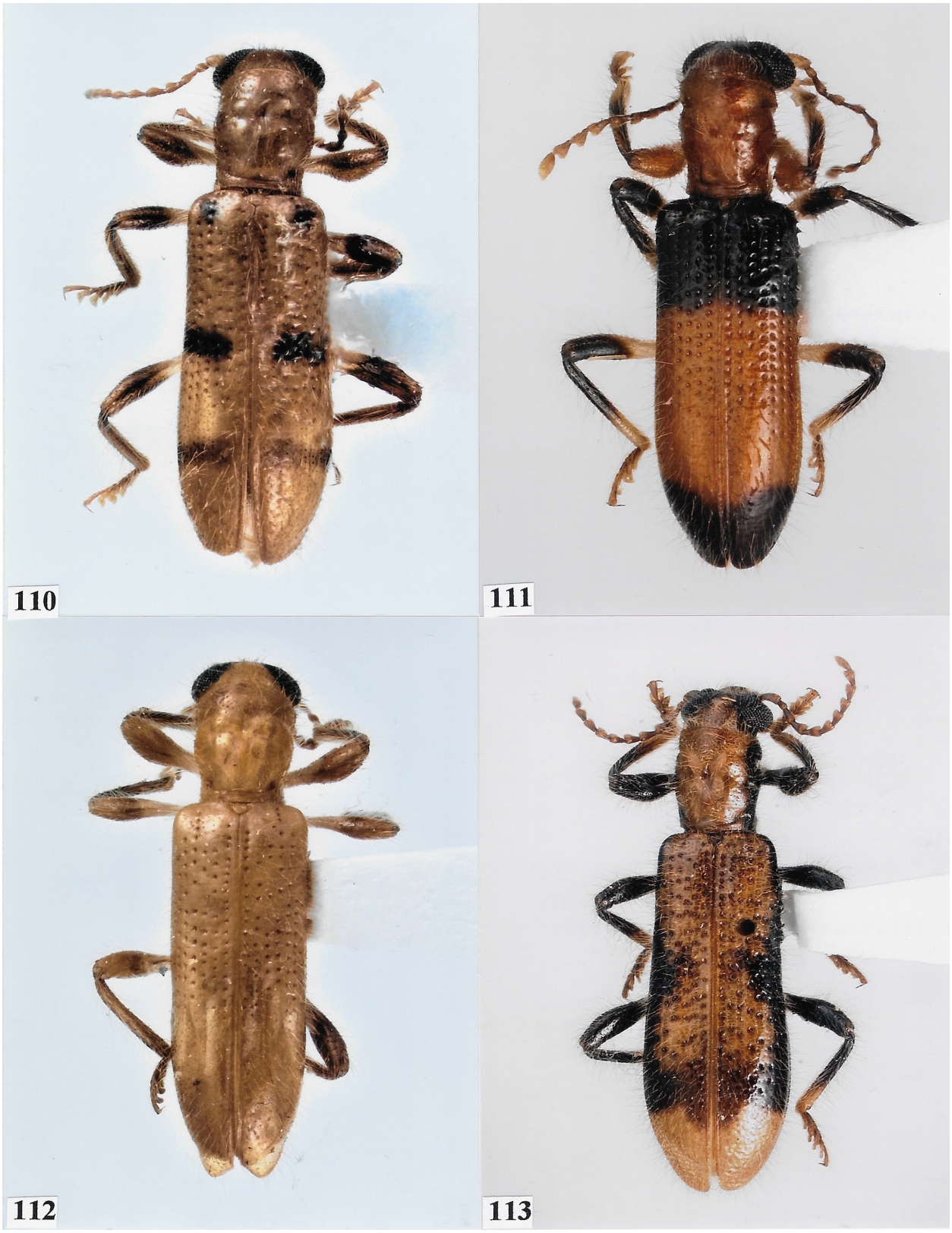
Figures 94–97. Habitus of *Axina* species. **94**) *Axina chiasta*. **95**) *A. fasciata*. **96**) *A. heveli*. **97**) *A. klisis*.



Figures 98–101. Habitus of *Axina* species. **98**) *Axina lateralis*. **99**) *A. luzia*. **100**) *A. munda*. **101**) *A. minas*.

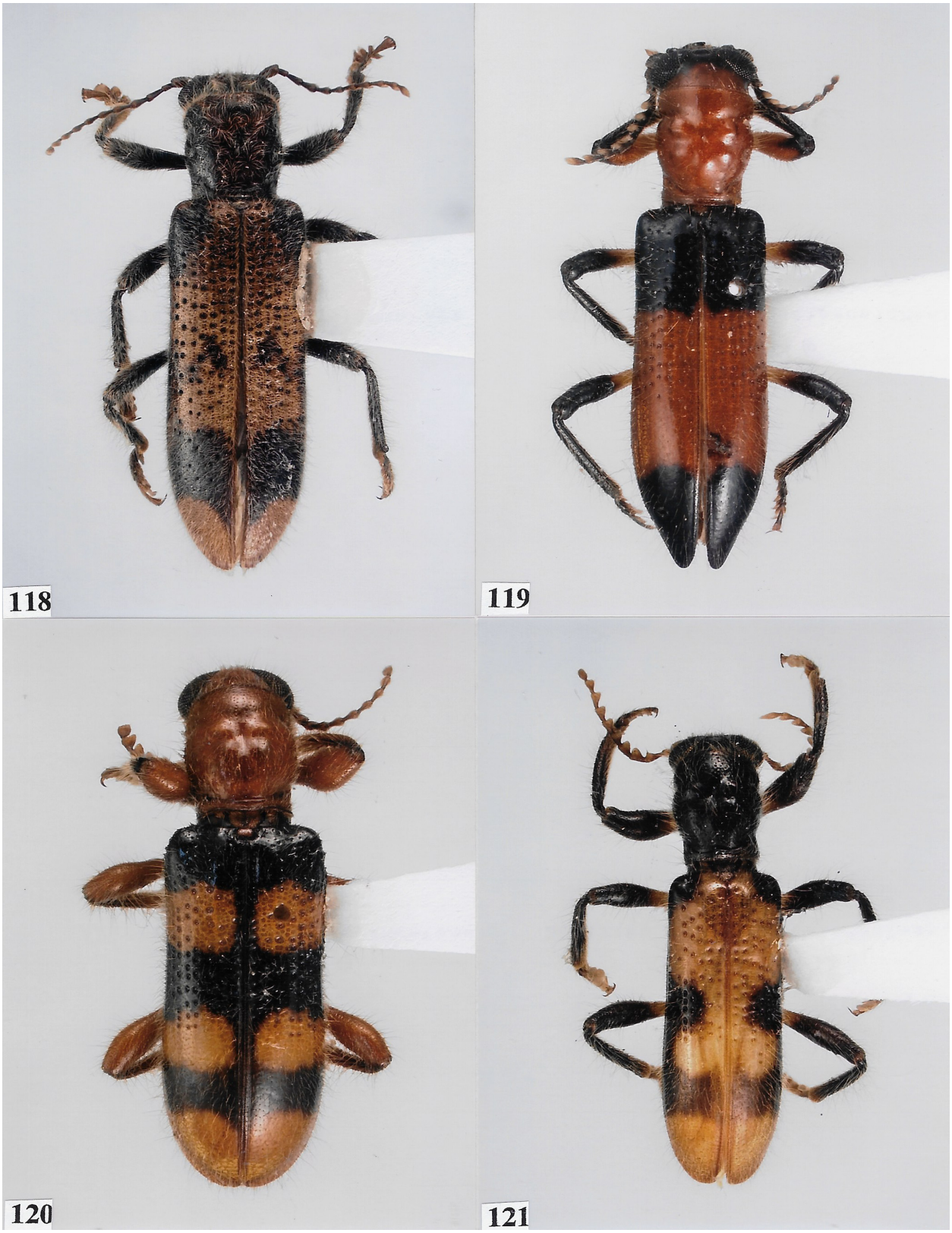
Figures 102–105. Habitus of *Axina* species. **102**) *Axina pallidioccabus*. **103**) *A. picta*. **104**) *A. piperata*. **105**) *A. pollex*.

Figures 106–109. Habitus of *Axina* species. **106**) *Axina polycaula*. **107**) *A. proxima*. **108**) *A.rio*. **109**) *A. villa*.



Figures 110–113. Habitus of *Axina* species. **110**) *Axina vista*. **111**) *A. nigrifrons*. **112**) *A. ochra*. **113**) *A. analis*.

Figures 114–117. Habitus of *Axina* species. **114**) *Axina conspicua*. **115**) *A. equestris*. **116**) *A. ignota*. **117**) *A. ordinis*.



Figures 118–121. Habitus of *Axina* species. **118**) *Axina trinalis*. **119**) *A. acutipennis*. **120**) *A. fortipes*. **121**) *A. furcula*.

Figures 122–124. Habitus of *Axina* species. **122**) *Axina megaspina*. **123**) *A. sexmaculata*. **124**) *A. spina*.