

Linzer biol. Beitr.	47/2	1513-1572	30.12.2015
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Systematics of the checkered beetle subfamily Platynopterinae SPINOLA (Coleoptera: Cleridae)

Weston OPITZ

A b s t r a c t : The subfamily name Platynopterinae is resurrected. It contains seven genera. *Platynoptera* Chevrolat and *Tarandocerus* Chevrolat are redescribed and the new genera *Ambonoides*, *Artoadenus*, *Aspitionis*, and *Isoforma* are described. *Pilosirus* is briefly discussed. Twenty-one new species are described. *Ambonoides* includes *A. retinoides* OPITZ nov.sp. and *A. caraguata* OPITZ nov.sp.; *Artoadenus* includes *A. dius* OPITZ nov.sp., *A. regina* OPITZ nov.sp., and *A. similis* OPITZ nov.sp.; *Aspitionis* includes *A. alarutinis* OPITZ nov.sp., *A. chiapas* OPITZ nov.sp., *A. graminis* OPITZ nov.sp., and *A. undulicornis* OPITZ nov.sp.; *Isoforma* includes *I. biguttula* OPITZ nov.sp., *I. fritilla* OPITZ nov.sp., *I. goryi* (LAPORTE), *I. planata* OPITZ nov.sp., *I. plauta* OPITZ nov.sp., and *I. subgilva* OPITZ nov.sp.; *Pilosirus* includes *P. amazonicus* OPITZ nov.sp., *P. brunoi* OPITZ, *P. fasciatus* OPITZ nov.sp., and *P. versus* OPITZ nov.sp.; *Platynoptera* includes *P. ampliata* (KLUG), *P. carti* OPITZ nov.sp., *P. flavohumeralis* OPITZ nov.sp., *P. humeralis* PIC, *P. lyciformis* Chevrolat, and *P. ochreatea* OPITZ nov.sp.; and *Tarandocerus* includes *T. auratus* OPITZ nov.sp., *T. lycoides* SPINOLA; *T. mexicanus* (THOMSON), and *T. testaceiceps* PIC. Twelve new synonymies are designated: *Tarandocerus lycoides* (= *Platynoptera arcuatefasciata* PIC, *P. basifasciata* PIC, *P. boliviana* PIC, *P. breveapicalis* PIC, *P. dilateapicalis* PIC, *P. externotata* PIC, *P. mathani* PIC, *P. pectoralis* SCHENKLING, *P. peruviana* PIC, *P. simplex* SCHENKLING, and *P. tucumanensis* SCHENKLING). Lectotypes are selected for *Platynoptera lyciformis* CHEVROLAT and for *Tarandocerus lycoides* (SPINOLA).

The presence of an incipient trichobothrium on the pronotal disc defines the monophyly of Platynopterinae. The body form of many of these checkered beetles approximate members of Lycidae, which is thought to represent Batesian mimicry. Twenty morphological characters were analyzed with WINCLADA, in combination with NONA. One completely resolved phylogenetic trees were generated with the computer. It is postulated that the ancestor of the genera evolved in South America with subsequent northern extensions into Central America following the closure of the Panamanian portal. This treatise includes a key to the genera and species, 125 line drawings, 23 electron micrographs, 28 color habitus photographs, 4 distributional maps, 1 phylogenetic tree, and brief discussions about zoogeography and phylogenetics.

Key Words : Coleoptera, Cleridae, Platynopterinae, checkered beetles, new genera, nov.sp., taxonomy, phylogenetics.

Introduction

The most outstanding characteristic among the genera of Platynopterinae is the presence of an apparent early stage of the development of a trichobothrium on the pronotal disc (Figs 92, 94, 96a, 107). However, without embryologic evidence, it is uncertain whether

this "incipient" trichobothrium organ is homologous with the fully developed trichobothria (Fig. 108) on the pronotal disc in all Epiphloeinae (OPITZ, 2014). Alternatively, the development of this extraordinary setal organ might be a manifestation of parallel evolution between Platynopterinae and Epiphloeinae; a reasonable interpretation in view of the substantial morphological differences between these two subfamilies. Herein, the presence of an incipient pronotal trichobothrium in Platynopterinae is considered an apotypic characteristic of that subfamily.

Another prominent characteristic of the members of Platynopterinae is their striking similarity to members of Lycidae, undoubtedly a manifestation of Batesian mimicry, and probably a type of mimicry described by JORON & MALLET (1998) and DARST & CUMMINGS (2006) as "Batesian polymorphism". GORHAM (1883: 183) points out the resemblance between *Tarandocerus mexicanus* (THOMSON) and species of *Lycus* (Lycidae). On the same page he writes, "The present species [*Tarandocerus mexicanus*] varies in the amount of blue at the base of the elytra, some example having scarcely any trace of the dark basal patch, in which case they imitate the variety *Calopteron bifasciatum*" GORHAM (Lycidae). Therefore, Müllerian mimicry cannot be ruled out in view of the substantial intraspecific variation in color patterns and in the wide distribution of these variants among platynopterine species.

Material and Methods

This study is based on the morphology of 195 adult specimens. Several specimens of *Tarandocerus lycoides* (SPINOLA) were disarticulated to gain a thorough understanding of the external morphology of these beetles. Techniques involving dissection, orismology, and the preparation of line drawings were similar to those described in OPITZ (2010: 35). I adhere to the canons of the biological species as advocated by STANDFUSS (1896: 115), DOBZHANSKY (1937: 312), and MAYR (1963: 19). Significant differences in male genitalia were presumed to indicate reproductive isolation. The principles of HENNIG (1966: 88) were followed for considerations involving supraspecific taxa, but I am in agreement with TUOMIKOSKI (1967: 138) who advocates the use of "apotypic" and "plesiotypic" instead of "apomorphic" and "plesiomorphic" on the grounds that phylogenetic work is not restricted to morphological characters (KAVANAUGH 1978). All primary types were examined and compared with the phenotypic range of the available beetles. Photographs of habitus illustrations were taken with a Leica Z 16 APO microscope equipped with JVC KY-F75U-CCD camera and controlled by Syncrosopy Auto Montage software, then digitally printed. The SEM micrographs were produced with a Scanning Electron Microscope-S-3500N.

There has been considerable confusion in the historical treatment of *Tarandocerus* CHEVROLAT and *Platynoptera* CHEVROLAT. Part of the problem has been that male genitalic characteristics were not implemented by previous workers. It is now clear that in the aforementioned genera genitalic characteristics provide excellent parameters for the recognition of genera and the discernment of species-level discontinuities. During this study, every available male specimen was dissected to view the genitalia. This resulted in a proliferation of synonyms, especially in *Tarandocerus lycoides* (SPINOLA). In this species 12 new synonyms were established. Unfortunately, during this study, I did

not have the opportunity to view specimens of *Teresamora gratiosa* PIC and *Pelonium luctuosum* SPINOLA, which according to William F. Barr (personal communication) have an affinity with the genera of Platynopterinae.

SPINOLA (1844: 55) validated "Platynoptéroïde" for a group of generic taxa that included *Platynoptera* CHEVROLAT. The name Platynopterinae was eventually placed in synonymy, under Korynetinae, by BOUCHARD et al. (2011), but is resurrected herein to accommodate the six genera included in this work. The incipient trichobothrium present in all specimens of Platynopterinae SPINOLA (1844: 55) distinguishes this subfamily from specimens of Peloniinae OPITZ (2010: 97).

An explanation of the methods of character analysis is imperative in any treatise of phylogenetic systematics. To arrive at a putative intrageneric phylogeny I implemented various published criteria for predicting the evolutionary state of characteristics. These criteria are found in EKIS (now OPITZ) (1977: 117), WATROUS & WHEELER (1981: 5), and NIXON & CARPENTER (1993: 413). In a few cases I have had to rely on intuition based on my general knowledge of the Cleridae to determine the evolutionary state of a particular characteristic.

Table 1: Character matrix of 21 adult morphological characters of Platynopterinae genera and *Apolopha* of Peloniinae.

Taxa	Characters																				
											1	1	1	1	1	1	1	1	1	1	2
	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
<i>Aspitionis</i>	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ambonoides</i>	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
<i>Pilosirus</i>	1	1	1	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
<i>Platynoptera</i>	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0
<i>Artoadenus</i>	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0
<i>Tarandocerus</i>	1	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	1	1	0
<i>Isoforma</i>	1	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1
<i>Apolopha</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Twenty-one adult morphological characters of the Platynopterinae genera, and the outgroup *Apolopha* SPINOLA, were subjected to heuristic analysis [maximum trees (hold) = 100, number of replications 9 (mult) = 100. And multiple TBR = TBR (mult max) was used. The outgroup taxa also involved a variety of generic taxa of subfamily Peloniinae. Character states given the value of "0" are judged plesiotypic, whereas those given a value of "1" were determined to be apotypic (Table 1).

- Character 0- Incipient trichobothrium: not present (0); present (1) (Fig. 92)
 Character 1- Tarsal spur formula: 2-2-2 (0); 0-2-2 (1); 0-1-1 (1)
 Character 2- Body form: trapezoidal (0); rectangular (1) (Fig. 145)
 Character 3- Pronotal disc surface: smooth (0); rough (1)
 Character 4- Epicranial disc surface: smooth (0); rough (1)
 Character 5- Asetiferous punctation: present (0); absent (1)
 Character 6- Body form: not trapezoidal (0); trapezoidal (1) (Fig. 147)
 Character 7- Funicular antennomeres: transverse (0); subquadrate (1) (Fig. 64)
 Character 8- Funicle setae: copious (0); few (1)
 Character 9- Seventh antennomere: not particularly large (0); significantly enlarged (1) (Fig.73)
 Character 10- Pronotal sides: not flared (0); flared (1) (Fig. 145)
 Character 11- Number of incipient trichobothria: one (0); two (1) (Fig. 96a)
 Character 12- Phallic plates: narrow (0); broad (1) (Fig. 123)
 Character 13- Pronotal disc: yellow setae absent (0); yellow setae present (1)
 Character 14- Metatibial glandular pit: absent (0); present (1) (Fig. 100)
 Character 15- Last maxillary palpomere; not securiform (0); securiform (1) (Fig. 36)
 Character 16- Form of elytra: not oval (0); oval (1)
 Character 17- Number of elytral carina: not 4 (0), 4 (1)
 Character 18- Antennal collateral branch: absent (0); present (1) (Fig. 104)
 Character 19- Tegminal lobes: not uncinata (0); uncinata (1) (Fig. 124)
 Character 20- Cranial carina: absent (0); present (1)

Repository of Specimens

I relied on the codons of specimen repositories provided by Arnett et al. (1993), with some modification due to institutional name changes. Specimens are deposited in:

- AMNH American Museum of Natural History, Invertebrate Zoology, Central Park West at 79th Street, New York, New York 10024-5192 (Lee Herman).
 BMNH British Museum of Natural History, Department of Entomology, SW 5BD, London, United Kingdom (Beulah Garner).
 CMNC..... Canadian Museum of Nature, P O Box 3443 Station D, Ottawa, Ontario KIP 6P4 Canada (Robert Anderson).
 DZUP..... Universidade Federal do Paraná, Departamento de Zoologia, Coleção de Entomologia, Caixa Postal 19020, 81531-990, Curitiba, Paraná, Brazil (Germano H. Rosado-Neto).
 FMNH..... Field Museum of Natural History, Zoology Department, Division of Insects, 1400 South Lake Shore Drive, Chicago, Illinois 60605-2496 (Crystal Maier). FSCA-Florida Collection of Arthropods, Division of Plant Industry/Entomology, Florida Department of Agriculture and Consumer Services, 1911 SW 34th Street, Gainesville, Florida 32614-7100 (Paul E. Skelley).
 IMLA Fundacion Miguel Lillo, Dirección de Zoología, Miguel Lillo 251, 4000 San Miguel de Tucumán, Argentina (Virginia Colombo de Correa).
 JEWG James E. Wappes Collection, 8734 Paisano Pass, San Antonio, Texas 78255. JNRC Jacques Rifkind Collection, 5105 Morella Avenue, Valley Village, California 91607-3219.

- MEMU.....Mississippi Entomological Museum, Mississippi State University, 100 Twelve Lane, Mississippi State, Mississippi 39759 (Terry Schiefer).
- MHNG.....Muséum d'histoire naturelle, 1 route de Malagnou, 1208 Geneva, Switzerland (Giulio Cuccodoro).
- MIZT.....Museo Regionale di Scienze Naturali, Via Giolitti 36, 10123 Torino, Italy (Guido Pagliano).
- MIUP.....Universidad de Panamá, Museo de Invertebrados G. B. Fairchild, Departamento de Zoología, Estafeta Universitaria, Panamá (Roberto Cambra T.).
- MNHN.....Museum d'Histoire Naturelle, Entomologie, 45 bis, Rue de Buffon, Paris (Ve), France (Antoine Mantilleri).
- MNKM.....Museo de Historia Natural Noel Kempff Mercado, Universidad Autonoma "Gabriel Rene Moreno", Santa Cruz de la Sierra, Bolivia (Julieta L. Arias).
- NHMB.....Naturhistorisches Museum Basel, Augustingasse 2, Postfach 1048, CH 4001 Basel, Switzerland (Matthias Borer).
- SDEI.....Senckenberg Deutsches Entomologisches Institute, Eberswalde Strasse 90, D-15374, Müncheberg, Germany (Lutz Behne).
- UCDC.....University of California-Davis, Department of Entomology, R.M. Bohart Museum of Entomology, 1 Shields Avenue, Davis, California 95616-85849 (Steve L. Heydon).
- WFBM.....William F. Barr Entomology Museum, Department of Plant, Soil, and Entomological Sciences, University of Idaho, 606 Rayburn Street, Moscow, Idaho 83844-2339 (Frank Merickel).
- WOPC.....Weston Opitz Collection, Research Associate: Florida State Collection of Arthropods, Division of Plant Industry/Entomology, Florida Department of Services, 1911 SW 34th Street, Gainesville, Florida 32614-7100.

Taxonomy

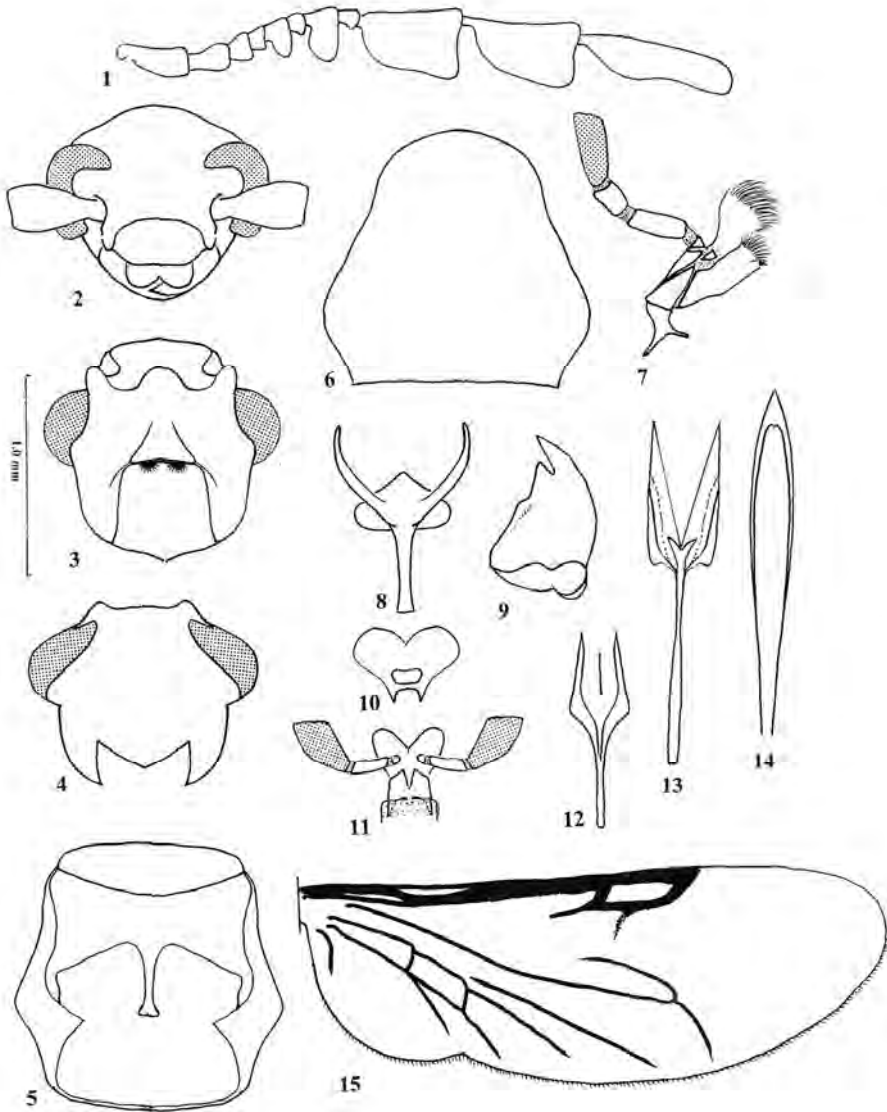
Platynopterinae SPINOLA, 1844: 55

Type genus. *Platynoptera* CHEVROLAT, 1834: No. 18. Desmarest, 1852: 269 (Platynopteridae).

Diagnosis. Specimens belong to this subfamily if they show a reduced 4th tarsomere, have one or two pairs of incipient pronotal trichobothria, have a lengthened, sometimes highly lobate antennal capitulum whose combined length is almost always much longer than the combined length of the other antennomeres, and have an incomplete pronotal dorsolateral carina. Also, the dorsolateral carina always conjoins the pronotal hem at the posterior angles of the pronotum.

OPITZ (2010: 55) provided a key to the subfamilies of Cleridae. This key is to be modified as follows to accommodate Platynopterinae.

- 5(4) Pronotal disk with incipient or fully-formed pronotal trichobothria6
 5' Pronotal disc without pronotal trichobothria7 (leads to remaining couplets)
- 6(5) Antenna inserted on lower portion of ocular notch, pronotum with fully-formed trichobothria, metatarsus with 1 or 2 pulvilliEpiphloeinae
- 6' Antenna inserted at middle of antennal notch, pronotum with incipient trichobothria, metatarsus with 3 pulvilliPlatynopterinae



Figs 1-15: Morphological organs of *Ambonoides retinoides*. (1) Antenna, male; (2) Head, frontal view; (3) Head, ventral view; (4) Head, dorsal view; (5) Pronotum, ventral view; (6) Pronotum, dorsal view; (7) Maxilla; (8) Metendosternite; (9) Mandible; (10) Labrum; (11) Labium; (12) Spicular fork; (13) Tegmen; (14) Phallus; (15) Metathoracic wing.

Description. Shape: Ranges from subrectangulate (Fig. 146) to trapezoidal (Fig. 156). Size: Length 5.5–19.0 mm; width 1.7–10.0 mm. Integumental Color: Varies from predominantly black to predominantly testaceous; pronotum and elytra usually bicolored, elytra frequently exhibit transverse testaceous fascia. Head: Transverse (Fig. 18), strongly deflexed, usually narrower than pronotum, surface finely punctate; epistomal suture incomplete, internal epistomal ridge incomplete; frontal preantennal angle not acute; clypeus bipartite, comprised of pigmented upper region and pigmented lower region; antenna comprised of 11 antennomeres, capitate, capitulum lengthened, combined length of funicular antennomeres usually very short, 9th and 10th antennomere with (Fig. 104) or without (Fig. 1) collateral branch, funicular antennomeres expanded (Fig. 1); eyes finely or coarsely faceted (Fig. 88), very deeply incised anteriorly; labrum shallowly or deeply incised (Fig. 97), transverse tormal processes fused-contiguous (Fig. 54); last palpomere of maxillary and labial palpus from securiform (Fig. 39) to subsecuriform (Fig. 57a); epipharynx not complex; mandible with well-developed dens (Fig. 20), basal notch not very large; gula large, gular processes separated (Fig. 33), gular sutures converging. Thorax: Pronotum quadrate (Fig. 5), transverse, or oblong (Fig. 38), lateral tubercle present (Fig. 5) or not (Fig. 22), anterior transverse depression if present faintly indicated, dorsolateral carina incomplete, carina confluent with pronotal hem at pronotal hind angles, commissure absent; pronotal projections very short (Fig. 5), pronototergo-sternal suture complete; prointercoxal process linear (Fig. 22) or feebly swollen distally (Fig. 5); procoxal cavity open externally, procryptosternum incomplete; metendosternite with furcal lamina (Fig. 8); elytral form usually oblong rectangulate (Fig. 145), suboval (Fig. 157), or trapezoidal (Fig. 156), anterior margin with carina, disc with or without asetiferous punctations, elytral 1° and 2° usually present or not, epipleural fold laterally positioned, gradually narrowing to elytral apex; legs, tarsal formula 5-5-5, cursorial, protibiae usually spinous along anterior margin (Fig. 98), tibial spur formula 0-1-1 or 0-2-2, tarsal pulvillar formula 3-3-3; unguis with (Fig. 101) or without (Fig. 96b) basal denticle; wedge cell of metathoracic wing closed (Fig. 15). Abdomen: Comprised of 6 visible sternites, 6th visible sternite beneath 5th, robust and compact; pygidium quadrate or scutiform; aedeagus well sclerotized, tegmen tubular very sclerotized, bilobed distally, tegminal lobes fimbriate or not, phallobasic rod variously developed, phallobasic apodeme well developed, phallic plates variously developed; spicular fork well developed (Fig. 12), intraspicular plate linear, spicular apodeme variously fused or not fused; ovipositor not longer than abdomen, with multilobed dorsal and ventral lamina; oblique and ventral bacculi well developed. Alimentary Canal: Stomodaeum short (Fig. 61b), proventricular valve comprised of 4 primary lobes; ventriculus well developed, ventricular crypts poorly developed; 4 cryptonephridial Malpighian tubules; proctodaeum short in males and long in females. Mesodermal Male Reproductive Organs: Two pairs of accessory glands (Fig. 61c); testes multifollicular. Mesodermal Female Reproductive Organs: Spermathecal capsule highly sclerotized (Fig. 61d), spermathecal gland attached to subapex or base of spermathecal capsule; saccular bursal copulatrix, well-developed bursal sclerite; ovaries comprised of multiple follicles. Larval Morphology: Cranium comparatively large, transverse; coronal component of epicranial suture absent; endocarina present; gula long narrow; 5 stemmata present on each side of cranium, anterior row of 3 and posterior row of 2; mouthparts feebly sclerotized; mesonotum and metanotum without plates; spiracles small, annuliform; urogomphi recurved.

Natural History. The adult body shape and leg construction of these beetles

suggests that they frequent broad leaf vegetation. The larval morphology is typical of clerids that are predators of xylophagous insects. Moreover, the members of some genera have evolved an elytral shape and texture that leads one to conclude that they are involved in a mimetic relationship with Lycidae.

Distribution. The range of the members of Platynopterinae extends from México to Uruguay.

Key to the genera and species of the Platynopterinae

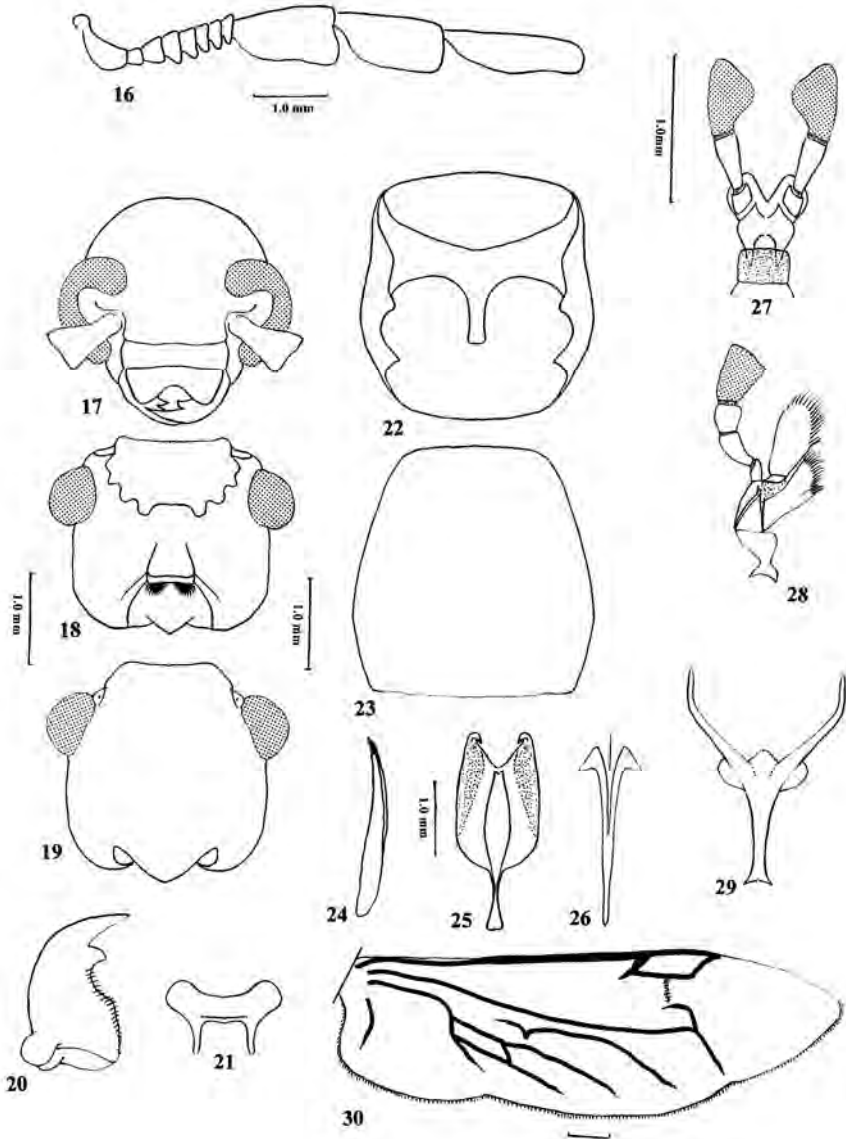
- | | | |
|---------|---|--|
| 1 | Maxillary terminal palpomere securiform (Fig. 36) (<i>Platynoptera</i>) | 2 |
| 1 | Maxillary terminal palpomere subsecuriform (Fig. 57a) | 7 |
| 2(1) | Elytral disc unicolorous black or nearly so | 3 |
| 2 | Elytral disc distinctly bicolorous, with or without flavotestaceous fasciae | 4 |
| 3(2) | Humeral angle flavotestaceous (Brazil) (Fig. 165) | <i>Platynoptera humeralis</i> PIC |
| 3 | Humeral angle not flavotestaceous (Brazil) (Fig. 167) | <i>Platynoptera ampliata</i> (KLUG) |
| 4(2) | Elytral disc mostly flavotestaceous | 5 |
| 4 | Elytral disc not mostly flavotestaceous | 6 |
| 5(4) | Elytral disc black in distal third (Panamá) (Fig. 163) | <i>Platynoptera carti</i> OPITZ nov.sp. |
| 5 | Elytral disc not black in distal third (Panamá) (Fig. 168) | <i>Platynoptera ochreatea</i> OPITZ nov.sp. |
| 6(4') | Broad flavotestaceous line extended backward from humeral angle (Brazil) (Fig. 164) | <i>Platynoptera flavohumeralis</i> OPITZ nov.sp. |
| 6' | Humeral angle black (Brazil) (Fig. 166) | <i>Platynoptera lyciformis</i> CHEVROLAT |
| 7(1') | Unguis without denticle | 8 |
| 7' | Unguis with denticle | 15 |
| 8(7) | Antennal capitulum with collateral branches (Fig. 46), posterior half of elytra expanded, about 10 mm (<i>Tarandocerus</i>) | 9 |
| 8' | Antennal capitulum without collateral branches (Fig. 66), posterior half of elytra not expanded, about 6 mm (<i>Aspitionis</i>) | 12 |
| 9(8) | Pronotal disc copiously vested with gold-yellow setae | 10 |
| 9' | Pronotal disc not copiously vested with gold-yellow setae | 11 |
| 10(9) | Profemur dark brown (México) (Fig. 171) | <i>Tarandocerus mexicanus</i> (THOMSON) |
| 10' | Profemur flavotestaceous (México) (Fig. 169) | <i>Tarandocerus auratus</i> OPITZ nov.sp. |
| 11(9') | Four carinae on elytral disc (Colombia, Bolivia, Venezuela, Peru, Paraguay, Argentina) (Fig. 170) | <i>Tarandocerus lycoides</i> SPINOLA |
| 11' | Three carina on elytral disc (Brazil, Paraguay) (Fig. 172) | <i>Tarandocerus testaceiceps</i> PIC |
| 12(8') | Asetiferous punctation end at midelytral disc, elytral disc entirely black (México) (Fig. 151) | <i>Aspitionis chiapas</i> OPITZ nov.sp. |
| 12' | Asetiferous punctation extend to elytral apex | 13 |
| 13(12') | Pronotum without midbasal short dark streak (México) (Fig. 153) | <i>Aspitionis undulicornis</i> OPITZ nov.sp. |
| 13' | Pronotum with midbasal short dark streak | 14 |
| 14(13') | Elytral disc red (Costa Rica) (Fig. 150) | <i>Aspitionis alarutinis</i> OPITZ nov.sp. |
| 14' | Elytral disc flavotestaceous (Panamá) (Fig. 152) | <i>Aspitionis graminis</i> OPITZ nov.sp. |
| 15(7') | Elytral epipleural margins subparallel (<i>Pilosirus</i>) | 16 |
| 15' | Elytral epipleural margin not subparallel, elytra expanded in posterior half | 19 |

16(15)	Antennomere 5 nearly same size as antennomere 7 (Fig. 73) (Peru) .....	.....	<i>Pilosirus brunoi</i> OPITZ
16'	Antennomere 5 much smaller than antennomere 7 (Fig. 76) .....	.....	17
17(16')	Elytral disc with broad flavotestaceous fascia (Bolivia) (Fig. 161) .....	.....	<i>Pilosirus fasciatus</i> OPITZ nov.sp.
17'	Elytral disc without fascia, disc entirely black.....	.....	18
18(17')	Pronotal tubercle obtuse (Fig. 141) (Brazil) (Fig. 160).....	.....	<i>Pilosirus amazonicus</i> OPITZ nov.sp.
18'	Pronotal tubercle subacute (Fig. 142) (Brazil) (Fig. 162) .....	.....	<i>Pilosirus versus</i> OPITZ nov.sp.
19(15')	Pronotal disc explanate at sides .....	.....	20
19'	Pronotal disc not explanate at sides .....	.....	21
20(19)	Profemur entirely dark brown (Brazil) (Fig. 145).....	.....	<i>Ambonoides retinoides</i> OPITZ nov.sp.
20'	Profemur flavotestaceous in basal half, dark brown in remainder (Brazil) (Fig. 146) ....	.....	<i>Ambonoides caraguata</i> OPITZ nov.sp.
21(19')	Last maxillary palpomere securiform (Fig. 28), male metatibiae without glandular pit (<i>Isoforma</i>) .....	.....	22
21'	Last maxillary palpomere subsecuriform, male metatibiae with glandular pit (as in fig. 100) (<i>Artoadenus</i>) .....	.....	27
22(21)	Elytral disc with flavotestaceous fascia .....	.....	23
22'	Elytral disc without fascia.....	.....	25
23(22)	Middle of pronotal disc with narrow flavotestaceous line (Brazil) (Fig. 158) .....	.....	<i>Isoforma plauta</i> OPITZ nov.sp.
23'	Middle of pronotal disc entirely black .....	.....	24
24(23')	Humerus flavotestaceous (French Guiana) (Fig. 155).....	.....	<i>Isoforma fritilla</i> OPITZ nov.sp.
24'	Humerus black (French Guiana) (Fig. 156) .....	.....	<i>Isoforma goryi</i> (LAPORTE)
25(22')	Pronotal disc entirely flavotestaceous (Brazil) (Fig. 154) .....	.....	<i>Isoforma biguttula</i> OPITZ nov.sp.
25'	Pronotal disc flavotestaceous at middle .....	.....	26
26(25')	Pronotal disc with two widely separated black lines (Mexico) (157) .....	.....	<i>Isoforma planata</i> OPITZ nov.sp.
26'	Pronotal disc with two narrowly separated black lines (Brazil) (Fig. 159) .....	.....	<i>Isoforma subgilva</i> OPITZ nov.sp.
27(21')	Elytral disc without fascia, proximal half flavotestaceous, distal half black (Panamá) (Fig. 147) .....	.....	<i>Artoadenus dius</i> OPITZ nov.sp.
27'	Elytral disc with fascia.....	.....	28
28(27')	Pronotal disc with two widely separated black lines, flavotestaceous midelytral fascia wide (México) (Fig. 149).....	.....	<i>Artoadenus similus</i> OPITZ nov.sp.
28'	Pronotal disc black at middle, flavotestaceous midelytral fascia narrow (French Guiana) (148).....	.....	<i>Artoadenus regina</i> OPITZ nov.sp.

***Ambonoides* OPITZ, new genus**

Type species: *Ambonoides retinoides* OPITZ, new species. By present designation.

Diagnosis: Within Platynopterinae only in members of *Ambonoides* are the pronotalsides strongly up-curved and flanged.



Figs 16-30: Morphological organs of *Isoforma goryi* (16-23, 27-30) and *Isoforma biguttula* (24-26). (16) Antenna, female; (17) Head, frontal view; (18) Head, ventral view; (19) Head, dorsal view; (20) Mandible; (21) Labrum; (22) Pronotum, ventral view; (23) Pronotum, dorsal view; (24) Phallus; (25) Tegmen; (26) Spicular fork; (27) Labium; (28) Maxilla; (29) Metendosternite; (30) Metathoracic wing.

Description: Size: Length 5.5-8.5 mm; width 2.0-2.6. Form: Elytra rectangular, posterior angle rounded. — Integumental color: Antenna black; mandible black, other mouthparts flavotestaceous, maxillary and labial terminal palpomeres black; cranium mostly black, lower frons flavotestaceous; pronotum bicolorous, mostly black, up-curved edges and anterior margin flavotestaceous; elytra unicolorous, black or bicolorous with midelytral flavotestaceous fascia, elytral apical and basal third black; legs black or femora mostly flavotestaceous and remainder of leg black; pterothorax and abdomen black. Vestiture: Integument highly setose, funicular antennomeres densely setose, cranium and pronotum densely vested with decumbent setae, elytra densely vested with short 2° setae and fewer 1° setae that become more prominent along epipleural and sutural margins; legs highly setose. Head (Figs 2, 3, 4, 87, 88): Cranial setose punctation cribrate; eyes bulging (Fig. 88), finely faceted and deeply broadly incised along frontal margin; antenna (Fig. 1) capitate, inserted at level of eye incision (= ocular notch); antennal carina very prominent, comprised of 11 antennomeres, scape very robust, pedicel oblong, funicular antennomeres transverse, antennomere 7 large, capitulum very long, about one third times longer than length of other antennomeres combined; labrum (Fig. 10) deeply incised; mandible (Fig. 9) robust, dens poorly developed, penicillus poorly developed; maxilla (Fig. 7) well developed, terminal palpomere subsecuriform, laterolacinia present; labium (Fig. 11) well developed, terminal palpomere subsecuriform; gula (Fig. 3) triangular. Thorax: Pronotum (Figs 5, 6, 89) with incipient trichobothrium (Figs 91, 92), quadrate, side margins up-curved and with tubercle, anterior margin linear, prebasal depression feebly developed, dorsolateral carina not extended to anterior margin of pronotum, carina joins pronotal hem at pronotal posterior angle; elytra rectangular, slightly widened to rounded posterior angles, discal carinae faintly visible; mesoscutellum triangular; protibial anterior margin spinous; ungues with denticle; tibial spur formula 0-2-2; tarsal pulvillar formula 3-3-3; metathoracic wing as in Fig. 15; metendosternite (Fig. 8) with furcal lamina; glandular pit not present on male metatibia. Abdomen: Six visible sternites; female pygidium rounded distally, slightly incised in males. Male genitalia (Figs 13, 14): Aedeagus short, tegmen feebly sclerotized, acuminate distally; phallus more sclerotized; spicular fork (Fig. 12) comprised of two narrow plates that connect at proximal half, intraspicular plate narrow and long.

Distribution: The members of this genus are known from Brazil and Uruguay.

Etymology: The generic name *Ambonoides* is a compound name that stems from the Greek *ambon* (= ridge) and the Latin suffix *-oides* (= likeness). I refer to the lateral elevations on the pronotal disc.

***Ambonoides retinoides* OPITZ nov.sp. (Figs 1-15, 62, 87-92, 109, 110, 143-145, 175)**

Holotype: ♂. Nova Teutonia, SC, Brasil, XI.1966, F. Plaumann (FSCA).

Paratypes: Four specimens. **Brazil:** Santa Catarina: 29-XI-1940, 27°11' La., 52°23' Lo, Fritz Plaumann (AMNH, 2); Rio Grande do Sul, Porto Alegre, 4-XI-1953, Pe. Buck (WOPC, 1). **Uruguay:** Approx. 6 km SE Melo, Dept. Cerro Largo, 25-27-II-1963, John K. Bouseman (WOPC, 1).

Diagnosis: The members of this species resemble superficially those of *Ambonoides caraguata*. However, in specimens of *A. retinoides* the legs are entirely black, whereas in *A. caraguata* specimens the femora are partially flavotestaceous.

Description: Size: Length 8.5 mm; width 2.8 mm. Form: As in Fig. 145. Color: Cranium mostly black, lower frons and clypeus flavotestaceous; pronotum mostly black,

upper sides, anterior margin, and small anterior wedged-shaped macula flavotestaceous; elytral disc mostly black, with midelytral testaceous fascia. **Head:** Antennal capitulum very long (Figs. 62, 90), each capitular antennomeres as long as combined length funicular antennomeres; antennal carina very prominent; EW/FW 12/16. **Thorax:** Pronotal anterior margin not projected at middle, sides of disc depressed; side margin of disc rounded (Fig. 6); PW/PL 45/45; elytra subrectangulate, sides sharply deflexed; EL/EW 210/43. **Abdomen:** Male pygidium incised at distal margin; aedeagus as in Figs. 109, 110. **Female mesodermal reproductive organs** (Fig. 143): Spermathecal capsule slightly sclerotized; spermathecal gland attached to apex of capsule; bursa copulatrix saccular; bursal sclerite present (Fig. 144).

Natural history: Specimens were collected during May and November.

Variation: **Size:** Length 8.0-8.5 mm; width 2.0-2.8 mm. The elytra may be entirely flavotestaceous, or flavotestaceous in basal half and black in remainder.

Distribution (Fig. 175): This species is known from Uruguay and southeastern Brazil.

Etymology: The trivial name *retinoides* is a compound Latin name derived from *rete* (= net) and the suffix *-oides* (= likeness). I refer to the network-like property of the surface of the elytral disc.

***Ambonoides caraguata* OPITZ nov.sp. (Figs 63, 111, 112, 146, 175)**

Holotype: ♀. Rio Caraguatá, M. Grosso, Brasil, XII:8: 1953, 21°48'; 52°27', 400 m, F. Plaumann (FMNH).

Paratypes: Two specimens. Brazil, Rio Caraguatá: 17-VIII-1953, 21°48' 52°27', Fritz Plaumann (FMNH, 1); *idem*, 31-VIII-1953, 21°48' 52°27', F. Plaumann (WOPC, 1).

Diagnosis: The members of this species resemble superficially those of *Ambonoides retinoides*. However, in *A. caraguata* specimens the legs are bicolored, whereas in specimens of *retinoides* the legs are entirely black.

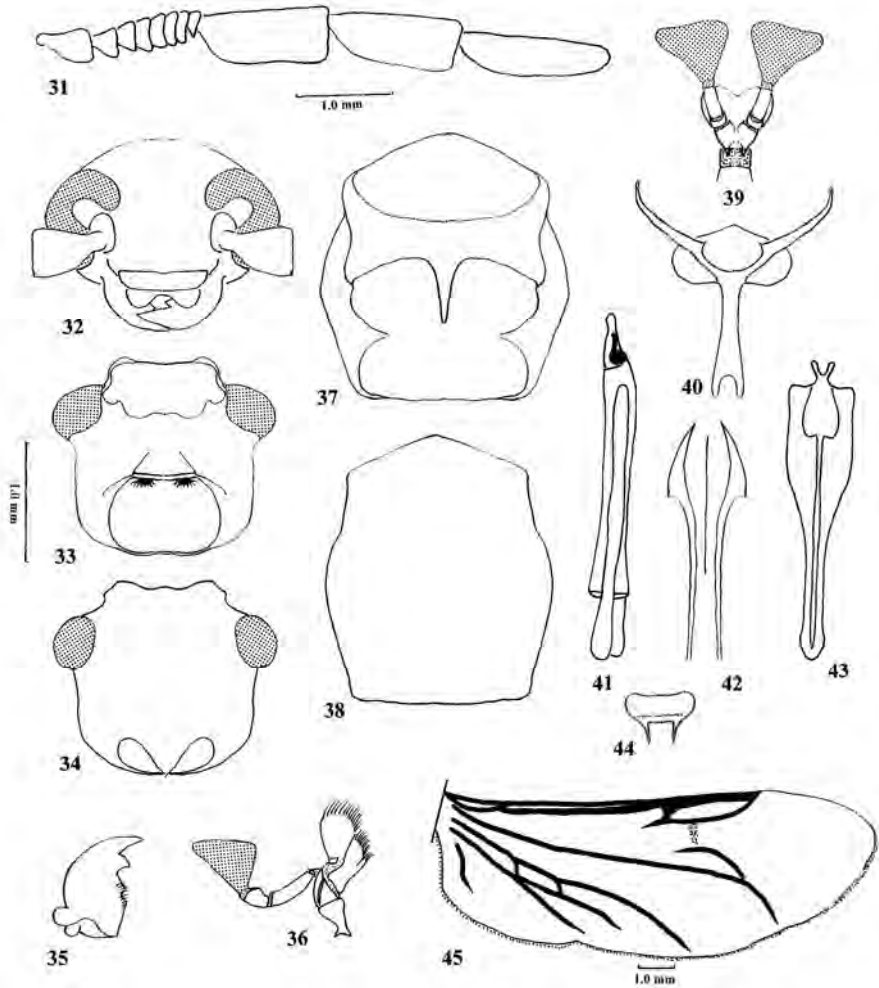
Description: **Size:** Length 7.0 mm; width 2.0 mm. **Form:** As in Fig. 146. **Color:** Cranium mostly black, lower frons and clypeus flavotestaceous; pronotum mostly black, upper sides, anterior margin, and small anterior wedged-shaped macula flavotestaceous; elytral disc mostly black, with midelytral flavotestaceous fascia, humeral angle faintly testaceous. **Head:** Antennal capitulum very long (Fig. 63), each capitular antennomeres nearly as long as combined length funicular antennomeres; antennal carina very prominent; EW/FW 10/15. **Thorax:** Pronotal anterior margin not projected at middle, sides of disc depressed; side margin of disc rounded; PW/PL 38/38; elytra rectangular, sides sharply deflexed; EL/EW 165/33. **Abdomen:** Male pygidium not incised at distal margin; aedeagus as in Figs. 111, 112, tegminal lobes acuminate, phallic apex particularly elongate.

Natural history: Specimens were collected during August.

Variation: **Size:** length 6.0-7.0 mm; width 1.5-2.0 mm. The elytra may be entirely black, or flavotestaceous in elytral basal half and black in remainder.

Distribution (Fig. 175): This species is known only from the type locality.

Etymology: The trivial name, *caraguata*, constitutes a noun in apposition and refers to the type locality.



Figs 31-45: Morphological organs of *Platynoptera lyciformis*. (31) Antenna, male; (32) Head, frontal view; (33) Head, ventral view; (34) Head, dorsal view; (35) Mandible; (36) Maxilla; (37) Pronotum, ventral view; (38) Pronotum, dorsal view; (39) Labium; (40) Metendosternite; (41) Phallus; (42) Spicular fork; (43) Tegmen; (44) Labrum; (45) Metathoracic wing.

***Artoadenus* OPITZ, new genus**

Type species: *Artoadenus dius* OPITZ, new species. By present designation.

Diagnosis: Within Platynopterinae only in the male members of *Artoadenus* and *Platynoptera* do we find a glandular pit on the metatibiae (Fig. 100). However, *Artoadenus* specimens may be distinguished from specimens of *Platynoptera* by the

shape of the terminal palpomeres of the maxilla and labium. In *Artoadenus* these palpomeres are subdigitiform whereas in *Platynoptera* they are strongly securiform.

Description: Size: Length 10.0-16.0 mm; width 5.0-7.0. Form: Elytra oval, posterior angle broadly rounded (Fig. 147). — Integumental color: Antenna black; mandible black, other mouthparts flavotestaceous, maxillary and labial terminal palpomeres black; cranium mostly black, epicranium narrowly flavotestaceous, lower frons flavotestaceous; pronotum bicolorous, mostly flavotestaceous, disc with two paralateral black streaks; elytra unicolorous or bicolorous, when unicolorous flavotestaceous, when bicolorous black regions usually at elytral apical third, flavotestaceous in remainder, rarely with two black fasciae; legs mostly black, posterior facies flavotestaceous; pterothorax mostly flavotestaceous; abdomen black. Vestiture: Integument highly setose, funicular antennomeres densely setose, cranium and pronotum densely vested with decumbent setae, elytra densely vested with short secondary setae and fewer primary setae that become more prominent along epipleural and sutural margins; legs highly setose. Head: Cranial setose punctation small; eyes bulging, finely faceted and deeply broadly incised along frontal margin; antenna (Fig. 64) capitate, inserted at level of eye incision (= ocular notch); antennal carina very prominent, comprised of 11 antennomeres, scape very robust, pedicel rotund, funicular antennomeres transverse, capitulum very long, about 5 times longer than length of other antennomeres combined, anterior margin of capitular antennomeres undulated; labrum deeply incised, transverse tormal process horizontal and contiguous; mandible robust; maxilla well developed, terminal palpomere subsecuriform; labium well developed, terminal palpomere subsecuriform; gula triangular. Thorax: Pronotum with incipient trichobothrium, transverse, side margins rounded, anterior margin linear, prebasal depression feebly developed, dorsolateral carina not extended to anterior margin of pronotum, carina joins pronotal hem at pronotal posterior angle; elytra trapezoidal, increasingly widened to rounded posterior angles, discal carinae faintly visible, 1° and 2° elytral setae present; mesoscutellum triangular; protibial anterior margin spinous; ungues with denticle; tibial spur formula 0-1-1; tarsal pulvillar formula 3-3-3; glandular pit on male metatibia. Abdomen: Six visible sternites; pygidium rounded distally in males. Male genitalia (Figs 113, 114): Aedeagus short, tegmen feebly sclerotized, lobate distally, fimbriate; phallus well sclerotized; spicular fork comprised of two narrow plates that connect at proximal fourth, intraspiracular plate narrow and long.

Distribution: The members of this genus are known from México, Panamá, Venezuela, French Guiana, and Guyana.

Etymology: The generic epithet is a compound name stemming from the Latin *artus* (= limb) and the Greek *aden* (= gland). I refer to the glandular pit on the male metatibia.

***Artoadenus dius* OPITZ nov.sp. (Figs 64, 113, 114, 147, 175)**

Holotype: ♂. Panama, Pnma. Prov. K 8-13 El Llano-Carti Rd, 10-13 May 1996, Wappes Huether, & Morris (FSCA). **Paratypes:** Three specimens. Panamá: Panamá: 7-11 km El Llano/Carti Rd., 7-V-1999, Morris/Wappes (JEW, 1); Canal Zone: Barro Colorado Island, 3-VIII-1978, R.B. & L.S. Kimsey (UCDC, 1). Venezuela: Tachira: La Morita, 8-14-IV-72, A. D'Ascoli, A. Montague, J. Salcedo (WFBM, 1).

Diagnosis: The metatibial glandular pit is prominent in the males of *Artoadenus* and *Platynoptera*. But, specimens of *A. dius* have subsecuriform terminal palpomeres, whereas *Platynoptera* specimens have securiform terminal palpomeres.

Description: Size: Length 12.0 mm; width 6.0 mm. Form: As in Fig. 147. Color: Cranium bicolorous, upper frons and region behind eyes black, remainder flavotestaceous; pronotum mostly flavotestaceous, disc with two lateral black lines; mesoscutellum flavotestaceous; elytral disc mostly flavotestaceous, posterior third black. Head: Antennal capitulum very long (Fig. 64), each capitular antennomere longer than combined length of scape, pedicel, and funicle; antennal carina very prominent; EW/FW 20/20. Thorax: Pronotal anterior margin not projected at middle; side margin of disc slightly rounded in posterior third; PW/PL 100/85; elytra moderately flared; EL/EW 180/55. Abdomen: Male pygidium not incised at distal margin; aedeagus as in Figs. 113, 114.

Variation: Size: length 12.0-15.0 mm; width 6.0-8.0 mm. The elytral disc may be entirely flavotestaceous, or mostly black with the basal margin and middle fascia flavotestaceous.

Natural history: Specimens were collected during April, May, and August. The specimen from Venezuela was collected at 300 m.

Distribution (Fig. 175): Known from Panamá and Venezuela.

Etymology: The trivial name *dius* (= between) is a Greek adjective. I refer to the superficial similarities among specimens of *Artoadenus*, *Platynoptera*, and *Tarandocerus*.

***Artoadenus regina* OPITZ nov.sp.(Figs 65, 115, 116, 148, 175)**

Holotype: ♂. Guyane (Régina) (French Guiana), Montagne de Kaw Pk., 37.5, 5.XII.2004, J. A. Cerda. A second label reads: á vue en forêt (FSCA). **Paratypes:** Two specimens. Guyana, Regina, Kaw Mountain Park, 2-IX-1999, J. A. Cerda (WOPC, 1); *idem*, 10-X-2001, J. A. Cerda (WOPC, 1).

Diagnosis: The elytral color pattern, as depicted in Fig. 148, will distinguish the members of this species from congeners.

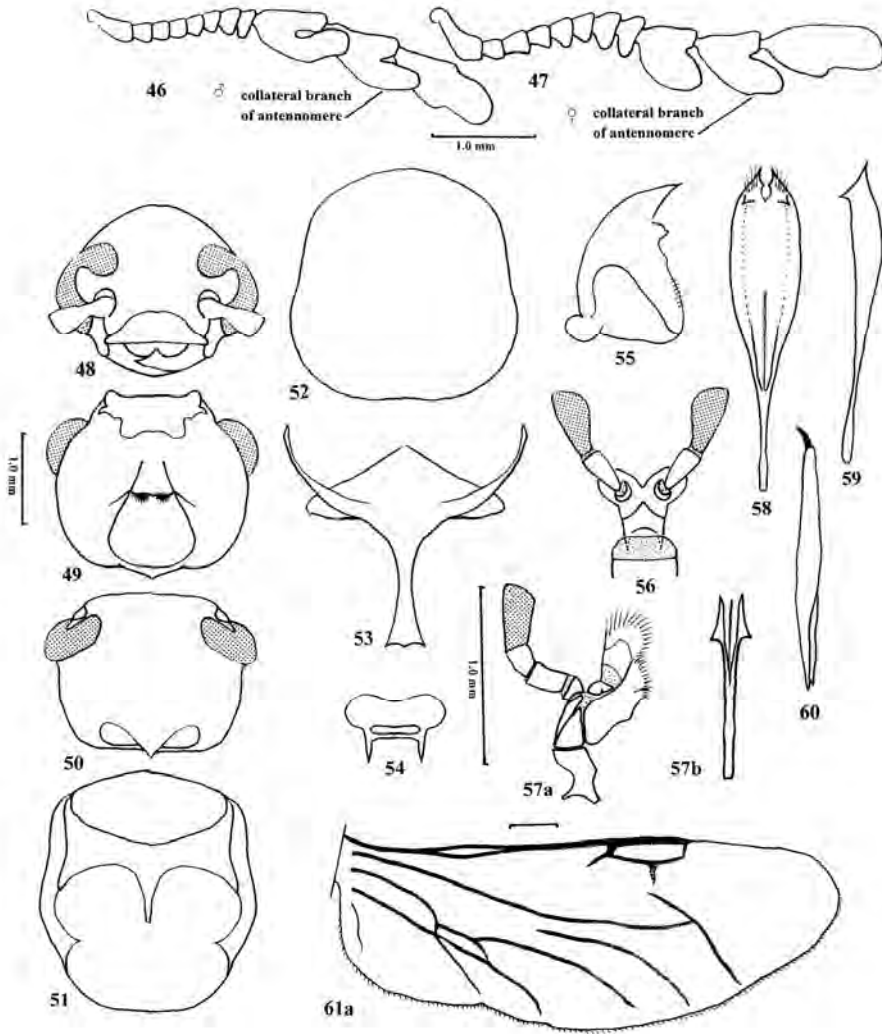
Description: Size: Length 10.0 mm; width 4.0 mm. Form: As in Fig. 148. Color: Cranium bicolorous, cranial venter and region behind eyes flavotestaceous, remainder black; pronotum mostly black, sides flavotestaceous; mesoscutellum brown; elytral disc mostly black, with flavotestaceous fascia. Head: Antennal capitulum very long (Fig. 65), each capitular antennomeres longer than combined length of funicle; antennal carina very prominent; EW/FW 18/18. Thorax: Pronotal anterior margin not projected at middle; side margin of disc slightly rounded; PW/PL 60/55; elytra moderately flared; EL/EW 230/50. Abdomen: Male pygidium not incised at distal margin; aedeagus as in Figs. 115, 116.

Variation: Size: length 10.0-12.0 mm; width 4.0-5.0 mm. The pronotal disc may show a narrow flavotestaceous line that may extend to the cranial vertex.

Natural history: Specimens were collected during October, November, and December.

Distribution (Fig. 175): Known from French Guiana.

Etymology: The trivial name *regina* constitutes a noun in apposition and refers to the type locality.



Figs 46-61a: Morphological organs of *Tarandocerus lycoides*. (46) Antenna, male; (47) Antenna, female; (48) Head, frontal view; (49) Head, ventral view; (50) Head, dorsal view; (51) Pronotum, ventral view; (52) Pronotum, dorsal view; (53) Metendosternite; (54) Labrum; (55) Mandible; (56) Labium; (57a) Maxilla; (57b) Spicular fork; (58) Tegmen, ventral view; (59) Tegmen, lateral view; (60) Phallus; (61a) Metathoracic wing.

***Artoadenus similis* OPITZ, nov.sp. (Figs. 82, 133, 134, 149, 174)**

H o l o t y p e : ♂. México: Jalisco, Puerto Los Mazos, 9 mi NW Autlan, VIII-28-1970, M. S. & J. S. Wasbauer (WFBM).

D i a g n o s i s : This is the only member of *Artoadenus* that is distributed in Middle America.

D e s c r i p t i o n : Size: Length 14.0 mm; width 6.0 mm. Form: As in Fig. 149. Color: Cranium mostly black, vertex with small flavotestaceous streak; pronotum mostly flavotestaceous, disc with two paralateral black streaks; mesoscutellum flavotestaceous; elytra bicolorous, humeral margin brown, disc mostly black, with wide flavotestaceous fascia. Head: Antennal capitulum long (Fig. 82), each capitular antennomere longer than combined length of funicular antennomeres; antennal carina very prominent; EW/FW 23/25. Thorax: Pronotal anterior margin not projected at middle, side margin of disc parallel in anterior two-thirds; PW/PL 92/87; elytral disc strongly explanate at sides, carina not present; EL/EW 390/120. Abdomen: Male pygidium not incised at distal margin; aedeagus (Figs. 133, 134); phallic apex very large.

N a t u r a l h i s t o r y : The holotype was collected in August.

D i s t r i b u t i o n (Fig. 174): Known only from the type locality.

E t y m o l o g y : The trivial name *similus* stems from *similis* (= like), is a Latin adjective. I refer to the shared superficial similarity between the members of this species and congeners.

***Aspitonis* OPITZ nov.gen.**

T y p e s p e c i e s : *Aspitonis gramilis* OPITZ, new species. By present designation.

D i a g n o s i s : Within Platynopterae only in members of *Aspitonis* are the funicular antennomeres subquadrate and moderately setose (Fig. 93).

D e s c r i p t i o n : Size: Length 5.5-9.0 mm; width 1.7-2.0. Form: Elytra rectangular, posterior angle narrowly rounded. — Integumental color: Antenna black; mandible black, other mouthparts flavotestaceous, maxillary and labial terminal palpomeres brown; cranium bicolorous, may be mostly black with lower frons and venter flavotestaceous, rarely mostly red; pronotum bicolorous, sides and disc narrowly black and remainder flavotestaceous, rarely mostly red; elytra unicolorous, flavotestaceous, red, or black; legs black; pterothorax and abdomen black. Vestiture: Integument highly setose, funicular antennomeres slightly setose, cranium and pronotum densely vested with decumbent setae, elytra densely vested with short 2° setae and fewer 1° setae that become more prominent along epipleural and sutural margins; legs highly setose. Head: Cranial setose punctation cribrate; eyes bulging, finely faceted and deeply broadly incised along frontal margin; antenna (Fig. 66) capitate, inserted at level of eye incision (= ocular notch); antennal carina very prominent, comprised of 11 antennomeres, scape very robust, pedicel rotund, funicular antennomeres subquadrate, capitulum very long, about 3 times longer than length of other antennomeres combined, anterior margin of capitular antennomeres undulated; labrum deeply incised; mandible robust; maxilla well developed, terminal palpomere subsecuriform; labium well developed, terminal palpomere subsecuriform; gula triangular. Thorax: Pronotum (Figs 95) with incipient trichothorium (Fig. 94), transverse, oblong, or quadrate, side margins with tubercle, anterior margin linear, prebasal depression feebly developed, dorsolateral carina not extended to anterior margin of pronotum, joins pronotal hem at pronotal posterior angle; elytra rectangular, posterior angles gradually round, discal carinae faintly visible; mesoscutellum quadrate; protibial anterior margin not spinous; ungues without denticle; tibial spur formula 0-2-2; tarsal pulvillar formula 3-3-3; glandular pit not present on male metatibia.

Abdomen: Six visible sternites; pygidium usually rounded distally in males and females; rarely incised in males. **Male genitalia** (Figs 117, 118): Aedeagus short, tegmen feebly sclerotized, lobate distally; phallus more sclerotized; spicular fork comprised of two narrow plates that connect at posterior apex, intraspicular plate narrow and long.

Distribution: The members of this genus range from México to Panamá.

Etymology: The generic epithet is a Greek compound name derived from *aspis* (= shield) and *tonus* (= stretching). I refer to the pronotal lateral expansion resulting from a well-developed tubercle.

***Aspitionis alarutinis* OPITZ, nov.sp. (Figs. 66, 93-95, 117, 118, 150, 173)**

Holotype: ♀. Costa Rica, Puntarenas, Monteverde, Feb 21 1987, E. Giesbert (FSCA).

Diagnosis: The elytral disc is bright red. This characteristic will distinguish the members of this species from congeners.

Description: **Size:** Length 8.0 mm; width 2.5 mm. **Form:** As in Fig. 150. **Color:** Cranium black, clypeus testaceous; pronotum mostly red, upper sides and short line at midbase testaceous; mesoscutellum black; elytra bright red. **Head:** Antennal capitulum very long (Fig. 66), each capitular antennomere longer than combined length of scape, pedicel, and funicle (Fig. 93); antennal carina very prominent; EW/FW 11/17. **Thorax:** Pronotal anterior margin not projected at middle, side margin of disc with well-developed tubercle; PW/PL 48/45; elytral disc strongly deflexed at sides, elytral carina faintly visible; EL/EW 190/35. **Abdomen:** Male pygidium incised distally; aedeagus (Figs. 117, 118) slightly sclerotized; tegminal lobes acuminate.

Natural history: The holotype was collected during February.

Distribution (Fig. 173): Known only from the type locality.

Etymology: The specific epithet *alarutinis* is a Latin compound name derived from *ala* (= wing) and *rutilus* (= red). I refer to the red coloration of the elytra.

***Aspitionis chiapas* Opitz, nov.sp. (Figs. 119, 120, 151, 173)**

Holotype: ♂. 16 mi. E. Teopisca, Chis. Mex. V.14, 1969, H. Howden (CMNC).

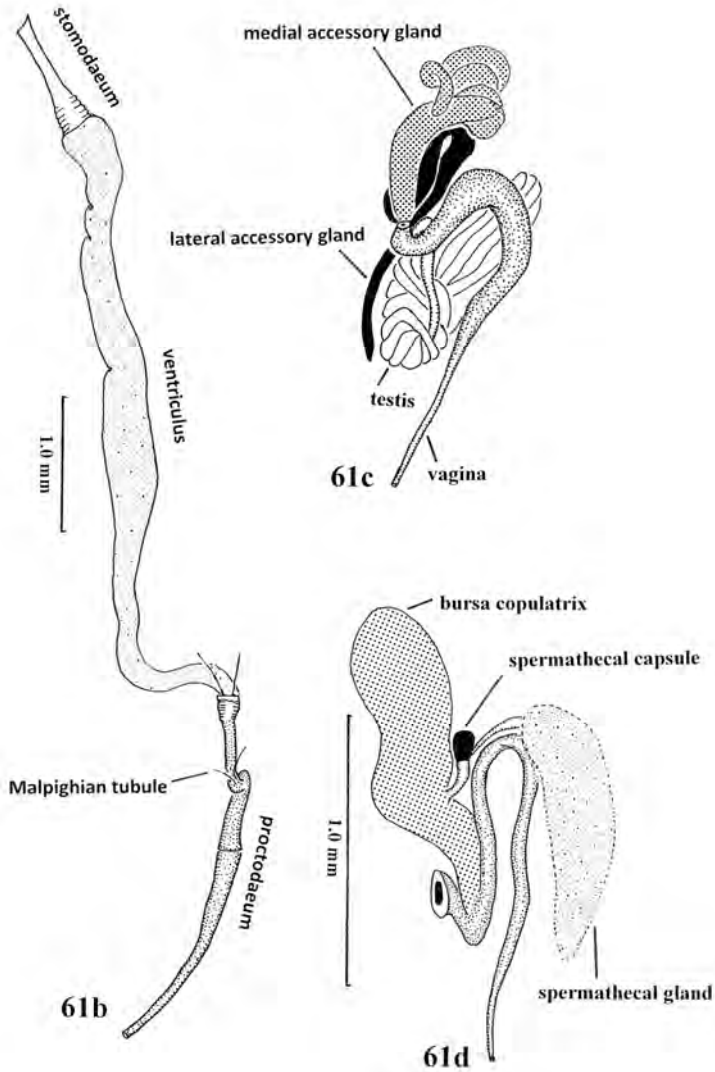
Diagnosis: The elytral disc is completely black. This characteristic will distinguish the members of this species from congeners.

Description: **Size:** Length 5.5 mm; width 1.8 mm. **Form:** As in Fig. 151. **Color:** Cranium black, lower frons and clypeus yellow; pronotum mostly black, upper sides reddish; mesoscutellum black; elytra black. **Head:** Antennal capitulum not available; antennal carina very prominent; EW/FW 10/13. **Thorax:** Pronotal anterior margin not projected at middle, side margin without tubercle; form elongate; PW/PL 30/35; elytral disc strongly deflexed at sides, elytral carina absent; EL/EW 140/30. **Abdomen:** Male pygidium not incised distally; aedeagus (Figs. 119, 120) slightly sclerotized; tegminal lobes acuminate and fimbriate.

Natural history: The holotype was collected in May.

Distribution (Fig. 173): Known only from the type locality.

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



Figs 61b-61d: Internal organs of *Tarandocerus lycoides*. (61b) Alimentary canal. (61c) male reproductive organs. (61d) Female reproductive organs.

***Aspionis graminis* OPITZ nov.sp. (Figs. 67, 152, 173)**

H o l o t y p e : ♀. Panama: Chiriquí: Bambito, 1585 m, 7 Jan. 1988, MacDonald & Shiefer (MEMU). **P a r a t y p e s :** One specimen. Panamá: Chiriquí: Bambito, 1585 m, 7-I-1988, MacDonald & Shiefer (WOPC).

D i a g n o s i s : The elytral disc is mostly flavotestaceous. This characteristic will distinguish the members of this species from congeners.

Description: Size: Length 5.5 mm; width 1.6 mm. Form: As in Fig. 152. Color: Cranium mostly black, lower frons and venter flavotestaceous; pronotum mostly flavotestaceous, upper sides and short line at midbase black; mesoscutellum black; elytral disc mostly flavotestaceous, epipleural and sutural margins partly dark brown. Head: Antennal capitulum very long (Fig. 67), each capitular antennomere as long as combined length of scape, pedicel, and funicle; antennal carina very prominent; EW/FW 10/12. Thorax: Pronotal anterior margin not projected at middle, side margin of disc with well-developed tubercle; PW/PL 33/30; elytral disc strongly deflexed at sides, with 3 faintly developed carina; EL/EW 130/20. Abdomen: Female pygidium not incised at distal margin.

Variation: Size: length 7.0-8.5 mm; width 1.6-2.0.0 mm.

Natural history: Specimens were collected from the type locality during January, at 1585 m.

Distribution (Fig. 173): Known only from western Panamá.

Etymology: The specific epithet *graminis* (= grass) is a Latin noun. I refer to the straw-colored elytra.

***Aspitionis undulicornis* OPITZ nov.sp. (Figs. 68, 121, 122, 153, 174)**

Holotype: ♂. Mexico, Chis. Hwy. 190, 10 mi. SE San Cristobal de las Casas, 7400'. A second label reads: 25 May 1983, C.W. & L. O'Brien 7 G.B. Marshall (FSCA).

Diagnosis: The pronotum is mostly red and is without the midbasal dark line. This characteristic will distinguish the members of this species from congeners.

Description: Size: Length 5.5 mm; width 1.5 mm. Form: As in Fig.153. Color: Cranium mostly red, region near antennal base and behind eyes narrowly black; pronotum mostly red, lower sides black; mesoscutellum yellow; elytral disc red. Head: Antennal capitulum very long (Fig. 68), each capitular antennomere as long as combined length of scape, pedicel, and funicle; antennal carina very prominent; EW/FW 9/15. Thorax: Pronotal anterior margin not projected at middle, side margin of disc with shallow tubercle; PW/PL 34/34; elytral disc strongly deflexed at sides, carina not present; EL/EW 138/28. Abdomen: Male pygidium not incised at distal margin; aedeagus as in Figs. 121, 122.

Natural history: The holotype was collected during May, at 2256 m.

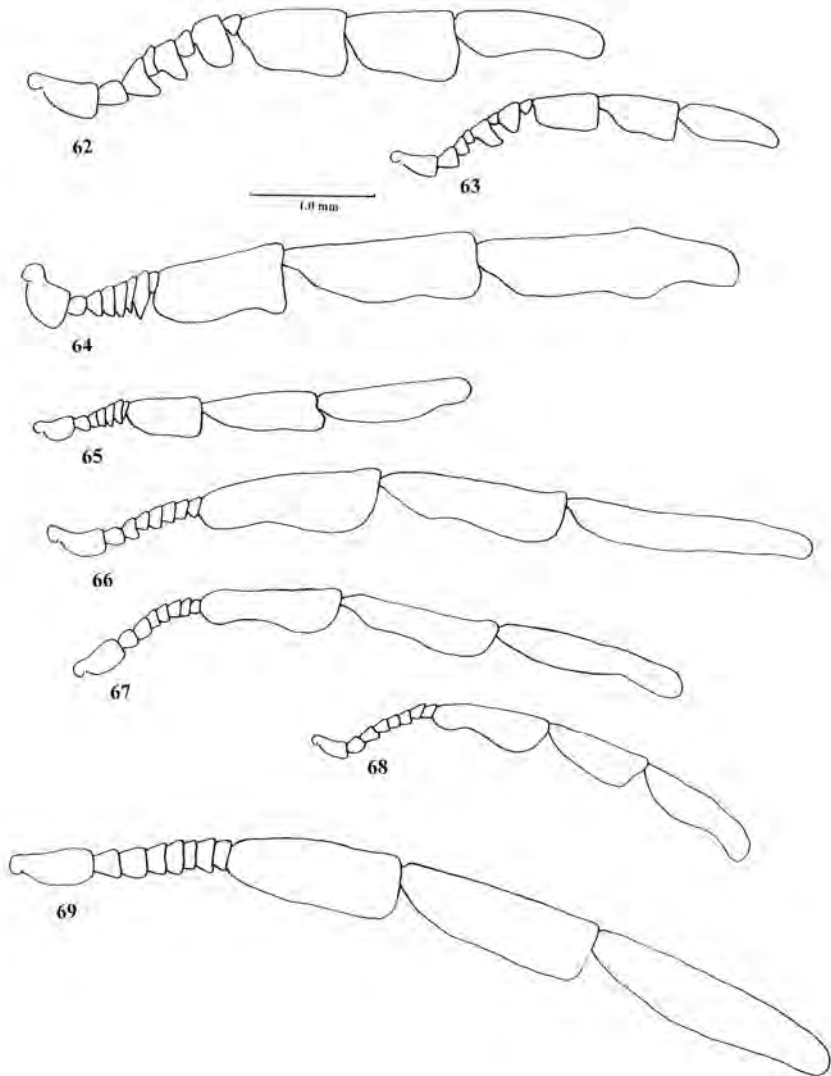
Distribution (Fig. 174): Known only from southeastern México.

Etymology: The specific epithet *undulicornis* is a Latin compound name derived from *unda* (= wave) and *cornu* (= horn). I refer to the undulation of the anterior margin of antennomere 9.

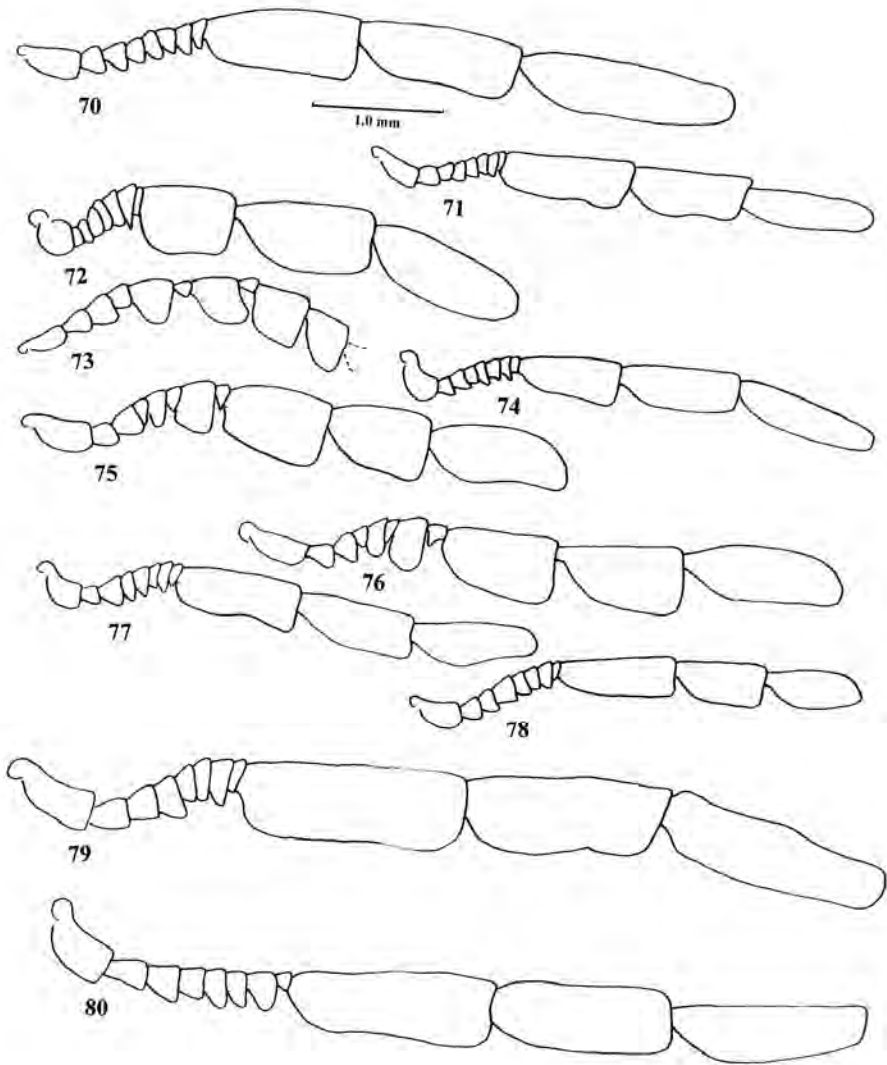
***Isoforma* OPITZ nov.gen.**

Type species: *Isoforma biguttula* OPITZ, new species. By present designation.

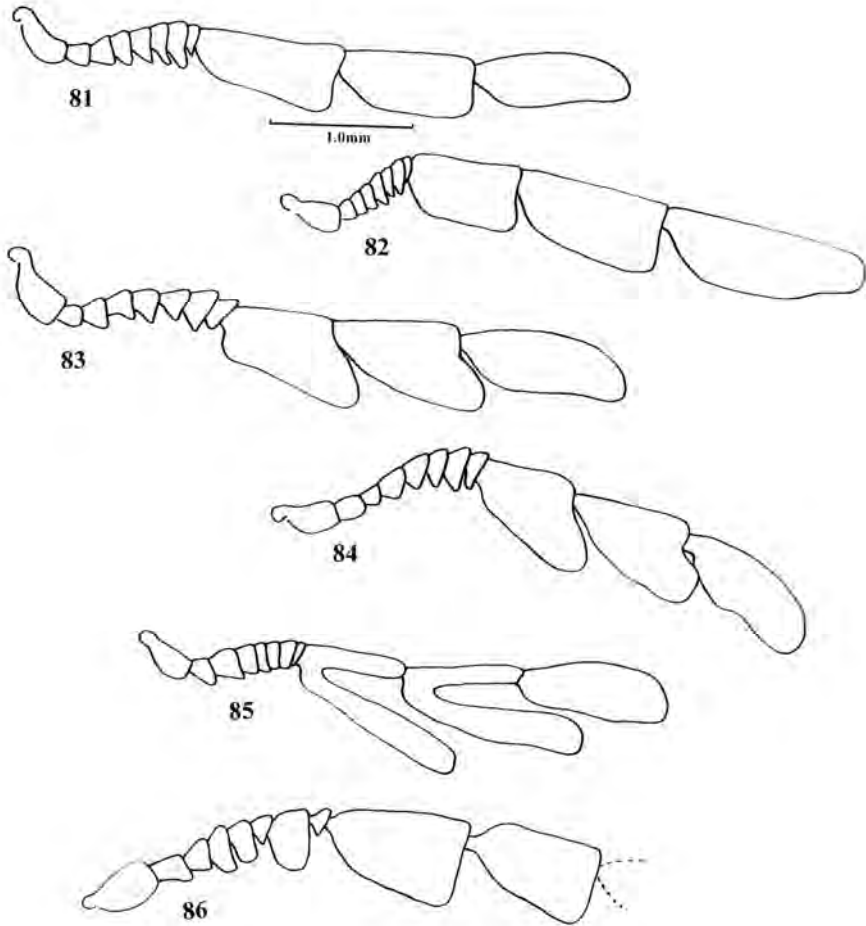
Diagnosis: The members of *Isoforma* are distinguishable from superficially similar specimens of *Artoadenus* by the shape of the terminal palpomeres; in *Isoforma* they are securiform whereas in *Artoadenus* they are subsecuriform.



Figs 62-69: Antennae. (62) *Ambonoides retinoides*, male; (63) *A. caraguata*, female; (64) *Artoadenus dius*, male; (65) *A. regina*, male; (66) *Aspionis alarutinis*, male; (67) *A. graminis*, female; (68) *A. undulicornis*, male; (69) *Isoforma biguttula*, male.



Figs 70-80: Antennae. (70) *Isoforma fritilla*, female; (71) *I. goryi*, female; (72) *Isoforma planata*, female; (73) *Pilosirus brunoi*, male; (74) *Isoforma subgilva*, female; (75) *Pilosirus amazonicus*, female; (76) *P. fasciatus*, female; (77) *Platynoptera carti*, male; (78) *P. flavohumeralis*, male; (79) *P. humeralis*, male; (80) *P. lyciformis*, male.



Figs 81-86: Antennae. (81) *Platynoptera ochreata*, female; (82) *Artoadenus similis*, male; (83) *Tarandocerus auratus*, male; (84) *T. mexicanus*, male; (85) *T. testaceiceps*, male; (86) *Pilosirus versus*, female.

Description: Size: Length 10.0-15.0 mm; width 4.0-8.0. Form: Elytra trapezoidal, widely flared in posterior half. — Integumental color: Antenna black; mandible black, other mouthparts flavotestaceous, maxillary and labial terminal palpomeres may be black; cranium mostly black, region behind eyes and cranial venter flavotestaceous or brown; pronotum bicolorous or unicolorous, when bicolorous mostly black, disc with two paralaralateral black streaks, flavotestaceous in remainder, when unicolorous flavotestaceous; elytra bicolorous, usually mostly black and with flavotestaceous fascia, sometimes half black and half flavotestaceous; legs black or flavotestaceous, sometimes black and flavotestaceous. Vestiture: Integument highly setose, funicular antennomeres densely setose, cranium and pronotum densely vested with decumbent setae, elytra densely

vested with short 2° setae and fewer 1° setae that become more prominent along epipleural and sutural margins; legs highly setose. **Head** (Figs 17-19): Cranial setose punctation small; eyes bulging, finely faceted and deeply broadly incised along frontal margin; antenna (Fig. 16) capitate, inserted at level of eye incision (= ocular notch); antennal carina very prominent, comprised of 11 antennomeres, scape very robust, pedicel rotund, funicular antennomeres transverse, capitulum very long, about 3 times longer than length of other antennomeres combined; labrum (Fig. 21) broadly incised, transverse tormal process horizontal and contiguous; mandible (Fig. 20) robust, penicillus well developed; maxilla (Fig. 28) well developed, terminal palpomere securiform; labium (Fig. 27) well developed, terminal palpomere securiform; gula (Fig. 18) slightly triangular. **Thorax** (Figs 22, 23): Pronotum with incipient trichobothrium, transverse, rarely quadrate, side margins rounded at middle, anterior margin linear, prebasal depression feebly developed, dorsolateral carina not extended to anterior margin of pronotum, carina joins pronotal hem at pronotal posterior angle; elytra trapezoidal, increasingly widened to rounded posterior angles, discal carinae present or not, usually faintly visible, 1° and 2° elytral setae present; mesoscutellum quadrate; protibial anterior margin spinous; ungues with denticle; tibial spur formula 0-1-1; tarsal pulvillar formula 3-3-3; metathoracic wing as in Fig. 30; metendosternite (Fig. 29) with furcal lamina; glandular pit not present on male metatibia. **Abdomen**: Six visible sternites; pygidium rounded distally in males. **Male genitalia** (Figs 24, 25): Aedeagus short, tegmen feebly sclerotized, lobate distally, phallobasic rod long and broad; phallus well sclerotized; spicular fork (Fig. 26) comprised of two narrow plates that connect at middle, intraspicular plate narrow and long. **Female genitalia**: Ovipositor short; dorsal and ventral laminae unilobed.

Distribution: The members of this genus are known from México, Guyana, French Guiana, and Brazil.

Etymology: The generic epithet is a compound name stemming from the Latin *forma* (= form) and the Greek *isos* (= equal). I refer to the similar body form among the species of this genus.

***Isoforma biguttula* OPITZ nov.sp. (Figs 24-26, 69, 123, 124, 154, 175)**

Holotype: ♂. Teffe (Ega), Amazonas (Brazil), M. De Mathan, 1st Trimester, 1879 (MNHN).

Diagnosis: The holotype has the black elytral macula extended to the anterior third of the elytral disc. No other available specimens of this genus have this characteristic. Also, only in the available specimen of this species is the cranium entirely testaceous.

Description: **Size**: Length 9.0 mm; width 4.0 mm. **Form**: As in Fig. 154. **Color**: Cranium flavotestaceous; pronotum flavotestaceous; elytral disc mostly black, basal third flavotestaceous. **Head**: Antennal capitulum very long (Fig. 69), each capitular antennomere longer than funicle; antennal carina very prominent; EW/FW 15/30. **Thorax**: Pronotal anterior margin linear, not projected at middle; side margins of disc rounded at middle; PW/PL 70/50; elytra conspicuously flared, discal carinae faintly developed; EL/EW 245/125. **Abdomen**: Male pygidium not incised at distal margin; aedeagus (Figs. 123, 124) short; tegminal lobes uncinatate; phallobasic rod long and broad.

Distribution (Fig. 175): Known only from the type locality.

Etymology: The trivial name *biguttula* is a Latin adjective derived from the prefix *bi-* (= two) and *gutta* (= spot). I refer to the two black spots on the elytral disc.

***Isoforma fritilla* OPITZ nov.sp. (Figs 70, 155, 175)**

H o l o t y p e : ♀. Piste de Belizon pk 12, 1 Marz 1987, Guyane (French Guiana), piégeage lumineux, Henri Cevaer (FSCA).

D i a g n o s i s : The holotype has two testaceous fascias on the elytral disc. To date, this is unique in the genus.

D e s c r i p t i o n : S i z e : Length 15.0 mm; width 7.0 mm. F o r m : As in Fig. 155. C o l o r : Cranium mostly testaceous, epicranium and venter brown; pronotum mostly black, upper sides of disc testaceous; elytral disc mostly black, with basal and medial testaceous fasciae. H e a d : Antennal capitulum very long (Fig. 70), each capitular antennomere longer than funicle; antennal carina very prominent; EW/FW 25/35. T h o r a x : Pronotal anterior margin linear, not projected at middle; side margins of disc rounded at middle; PW/PL 108/85; elytra conspicuously flared; discal carinae faintly developed; EL/EW 400/110. A b d o m e n : Female pygidium not incised at distal margin.

N a t u r a l h i s t o r y : The holotype was collected in March.

D i s t r i b u t i o n (Fig. 175): Known only from the type locality.

E t y m o l o g y : The trivial name *fritilla* is a Latin adjective derived from *fritillus* (= spotted). I refer to the black macula on the elytral disc.

***Isoforma goryi* (LAPORTE) (Figs 16-23, 27-30, 71, 156, 175)**

Enoplium goryi LAPORTE, 1836: 54.

H o l o t y p e : Gender not known. Cayenne (French Guiana) (MIZT). KLUG 1842: 395 (*Enoplium*). SPINOLA 1844: 65 (*Platynoptera*). DESMAREST 1852: 270 (*Platynoptera*) SCHENKLING 1906: 311 (*Platynoptera*). CORPORAAL 1950: 273 (*Platynoptera*). EKIS 1975: 52 (*Platynoptera*).

D i a g n o s i s : There are 17 spines on the anterior margin of the protibia; among congeners, only in specimens of this species are there more than ten.

D e s c r i p t i o n : S i z e : Length 15.0 mm; width 8.0 mm. F o r m : As in Fig. 156. C o l o r : Cranium mostly black, with flavotestaceous line behind eyes; pronotum mostly black, upper sides flavotestaceous; elytral disc mostly black, with midelytral flavotestaceous fascia, the humeral angle may be flavotestaceous. H e a d : Antennal capitulum very long (Fig. 71), each capitular antennomere as long as funicle; antennal carina very prominent; EW/FW 22/35. T h o r a x : Pronotal anterior margin linear, not projected at middle; side margins of disc rounded at middle; PW/PL 100/80; elytra conspicuously flared; disc with 4 discal carinae; EL/EW 200/140. A b d o m e n : Female pygidium not incised at distal margin.

N a t u r a l h i s t o r y : One specimen was collected in August.

V a r i a t i o n : S i z e : length 10.0-15.0 mm; width 4.0-8.0 mm. The flavotestaceous macula on the humeral angle varies in expression.

D i s t r i b u t i o n (Fig. 175): In addition to the type, I examined 2 specimens from: F r e n c h G u i a n a, Region de Petit-Saut fleuve Sinnamary, 4.VIII.1994, ex. Larva, G. Tavakilian. Specimens are deposited in MNHN and WOPC.

***Isoforma planata* OPITZ nov.sp. (Figs 72, 157, 174)**

H o l o t y p e : ♀. Mexico, Chiapas, Laguna Belgica, 16 km NW Ocozocoautla, 970 m, 7-VI-1990, H. & A. Howden (CMNC).

D i a g n o s i s : Within *Isoforma* only in the members of this species is the 9th antennomere subquadrate.

D e s c r i p t i o n : Size: Length 12.0 mm; width 7.0 mm. Form: As in Fig. 157. Color: Cranium mostly black, vertex with narrow testaceous streak; pronotum mostly flavotestaceous, with two paralaralateral black lines; elytra bicolorous, basal half testaceous, distal half black. Head: Antennal capitulum very long (Fig. 72), each capitular antennomere longer than funicle; antennal carina very prominent; frons as wide as eyes; EW/FW 20/20. Thorax: Pronotal anterior margin linear, not projected at middle; side margins of disc rounded at middle, quadrate; PW/PL 75/75; elytra conspicuously flared; discal carinae not present; EL/EW 320/120. Abdomen: Female pygidium not incised at distal margin.

N a t u r a l h i s t o r y : The holotype was collected during June, at 970 m.

D i s t r i b u t i o n (Fig. 174): Known only from the type locality.

E t y m o l o g y : The trivial name *planata* is a Greek adjective derived from *platys* (= wide). I refer to the extensive width of the elytra.

***Isoforma plauta* OPITZ nov.sp. (Figs 158, 175)**

H o l o t y p e : ♀. Santa Teresa-ES, Brasil, XII-1964, C. & T. Elias (DZUP).

D i a g n o s i s : The anterior third of the elytral disc is entirely black. To date, this is unique in the genus.

D e s c r i p t i o n : Size: Length 17.0 mm; width 10.0 mm. Form: As in Fig. 158. Color: Cranium black; pronotum mostly black, upper sides of disc and midline flavotestaceous; elytral disc mostly black, with medial flavotestaceous fascia. Head: Antennal capitulum very long, each capitular antennomere longer than funicle; antennal carina very prominent; EW/FW 20/22. Thorax: Pronotum transverse; anterior margin linear, not projected at middle; side margins of disc rounded; with two shallow depressions near base; PW/PL 90/78; elytra conspicuously flared; discal carinae faintly developed; EL/EW 400/140. Abdomen: Female pygidium not incised at distal margin.

N a t u r a l h i s t o r y : The holotype was collected in December.

D i s t r i b u t i o n (Fig. 175): Known only from the type locality.

E t y m o l o g y : The trivial name *plauta* is a Greek adjective derived from *platys* (= flat). I refer to the body form of these beetles.

***Isoforma subgilva* OPITZ nov.sp. (Figs 74, 159, 175)**

H o l o t y p e : ♀. St. Paulo d' Olivencia (Brazil), M. de Mathan, Juin-Juillet 1883 (MNHN).

D i a g n o s i s : Within *Isoforma* only in the members of this species is the mostly flavotestaceous pronotum adorned with two very proximate vertical, centrally located, black lines.

D e s c r i p t i o n : Size: Length 12.0 mm; width 6.0 mm. Form: As in Fig. 159. Color: Cranium dark testaceous; pronotum mostly flavotestaceous, with two slightly separated paralaralateral dark brown lines; elytral bicolorous, basal half testaceous, distal half black. Head: Antennal capitulum very long (Fig. 74), each capitular antennomere longer than funicle; antennal carina very prominent; frons slightly wider than eyes; EW/FW 23/26. Thorax: Pronotal anterior margin linear, not projected at middle; side margins of disc

rounded at middle; PW/PL 82/68; elytra moderately flared; discal carinae slightly developed; EL/EW 290/95. Abdomen: Female pygidium not incised at distal margin.

Natural history: The holotype was collected within a June-July time frame.

Distribution (Fig. 175): Known only from the type locality.

Etymology: The trivial name *subgilva* is a Latin adjective derived from prefix -*sub* (= less than) and *gilvus* (= yellow). I refer to the elytral color.

***Pilosirus* OPITZ, 1997**

Pilosirus OPITZ, 1997: 54. Type species: *Pilosirus brunoi* OPITZ, 1997: 54. By original designation.

Diagnosis: Within Platynopterinae only in members of *Pilosirus* (Fig. 73) and *Ambonoides* (Fig. 62) is the 7th antennomere disproportionately large. But, in *Pilosirus* specimens the pronotal disc is evenly convex whereas in *Ambonoides* specimens the pronotal disc is up-curved and flanged at the sides.

Description: *Pilosirus* and its type species were adequately described and illustrated in OPITZ (1997: 54).

***Pilosirus amazonicus* OPITZ, nov.sp. (Figs. 75, 141, 160)**

Holotype: ♀. Amazon (Brazil), Bates (BMNH).

Diagnosis: Distinguishable from superficially similar specimens of *Pilosirus versus* by having a more obtuse pronotal tubercle (compare Figs. 141, 142).

Description: Size: Length 7.0 mm; width 1.8 mm. Form: As in Fig. 160. Color: Cranium mostly black, region behind eyes slightly flavotestaceous, gula flavotestaceous; pronotum mostly black, venter and upper sides flavotestaceous; mesoscutellum black; elytra black. Head: Antennal capitulum long (Fig. 75), each capitular antennomere not as long as combined length of scape, pedicel, and funicle; antennal carina very prominent; EW/FW 10/15. Thorax: Pronotal anterior margin not projected at middle, side margin of disc with obtuse tubercle; PW/PL 43/43; elytral disc not strongly deflexed at sides, carina not present; EL/EW 145/35. Abdomen: Male pygidium not incised at distal margin.

Distribution: Known only from Amazonia, Brazil.

Etymology: The trivial name, *amazonicus*, constituted a name in apposition and refers to the type locality.

***Pilosirus fasciatus* OPITZ, nov.sp. (Figs. 76, 161, 175)**

Holotype: ♀. Bolivia: Santa Cruz, Amboro Rd., above Achira Campo, 5-5800', 9-11/X/2004, Morris & Wappes (MNKM).

Diagnosis: Distinguishable from superficially similar specimens of *Pilosirus brunoi* by having a smaller antennomere 5 (compare Figs. 73, 76)

Description: Size: Length 7.0 mm; width 2.0 mm. Form: As in Fig. 161. Color: Cranium black; pronotum mostly black, upper sides flavotestaceous; mesoscutellum black; elytra mostly black, humeral angle and mid-elytral fascia flavotestaceous. Head: Antennal capitulum long (Fig. 76), each capitular antennomere not as long as combined length of funicular antennomeres; antennal carina very prominent; EW/FW 10/13.

Thorax: Pronotal anterior margin not projected at middle, side margin of disc with obtuse tubercle; PW/PL 40/40; elytral disc not strongly deflexed at sides, carina not present; EL/EW 170/35. **Abdomen:** Female pygidium not incised at distal margin.

Natural history: The holotype was collected in October, at an altitude ranging from 1524 to 1768 m.

Distribution (Fig. 175): Known only from the type locality.

Etymology: The trivial name *fasciatus*, is a Latin noun. I refer to the fascia on the elytral disc.

***Pilosirus versus* OPITZ, nov.sp. (Figs. 86, 142, 162, 175)**

Holotype: ♀. Serra de Baturite, Ceara (Brazil), Gounelle, 1. 1895 (MNHN).

Diagnosis: Distinguishable from superficially similar specimens of *Pilosirus amazonicus* by having much narrower flavotestaceous lines on the pronotal disc. Also, the pronotal tubercle is more acute than it is in *amazonicus* specimens (compare Figs. 141, 142).

Description: **Size:** Length 7.0 mm; width 2.0 mm. **Form:** As in Fig. 162. **Color:** Cranium mostly black, clypeus and cranial venter flavotestaceous; pronotum mostly black, upper sides narrowly flavotestaceous; mesoscutellum black; elytra black. **Head:** Antennal capitulum long (Fig. 86), each capitular antennomere not as long as combined length of funicular antennomeres; antennal carina very prominent; EW/FW 12/15. **Thorax:** Pronotal anterior margin not projected at middle, side margin of disc with subacute tubercle; PW/PL 45/45; elytral disc not strongly deflexed at sides, carina not present; EL/EW 160/30. **Abdomen:** Female pygidium not incised at distal margin.

Distribution (Fig. 175): Known only from the type locality.

Etymology: The trivial name, *versus* (= line), is a Latin noun. I refer to the narrow flavotestaceous line on the pronotal disc.

***Platynoptera* CHEVROLAT, 1834**

Platynoptera CHEVROLAT, 1834: No. 18

Type species: *Platynoptera lyciformis* CHEVROLAT, 1834: No. 18, table 30, 292. Designated by CORPORAAL 1950: 273. SPINOLA 1841: 75; 1844: 62. LACORDAIRE, 1857: 477. DESMAREST 1852: 269. SCHENKLING 1903: 103. The genus *Platynoptera*, as defined in CORPORAAL (1950: 273), contains several non-congeneric species and it is not possible to determine which references listed by Corporaal refer to *Platynoptera* as now defined. Moreover, several species have been misidentified. Therefore, the reader should note that generic references listed by Corporaal may not refer to the genus *Platynoptera*.

Diagnosis: Within Platynopterinae only the members of *Platynoptera* have the maxillary and labial terminal palpomeres strongly securiform.

Description: **Size:** Length 10.0-18.0 mm; width 4.5-10.0. **Form:** Elytra trapezoidal, posterior angle broadly rounded. **Integumental color:** Antenna always black; mouthparts unicolorous or bicolorous, when bicolorous terminal palpomeres black, other portions flavotestaceous, when unicolorous, flavotestaceous or black; cranium mostly black, epicranium and gular region may be flavotestaceous; pronotum bicolorous, flavotestaceous at upper sides and black at lower sides, disc may show broad black macula, or two black lines; elytra mostly black with flavotestaceous markings, rarely all flavotesta-

ceous or all black; legs black; pterothorax and abdomen black. **Vestiture:** Integument highly setose, funicular antennomeres densely setose, cranium and pronotum densely vested with decumbent setae, elytra densely vested with short 2° setae and fewer 1° setae that become more prominent along epipleural and sutural margins; legs highly setose. **Head** (Figs. 32-34, 97): Cranial setose punctation small; eyes bulging, finely faceted and deeply broadly incised along frontal margin; antenna (Fig. 31) capitate, inserted at level of eye incision (= ocular notch); antennal carina very prominent, comprised of 11 antennomeres, scape very robust, pedicel triangular, funicular antennomeres transverse, capitulum very long, about three times longer than length of other antennomeres combined, antennomeres 9 and 10 rectangular; labrum (Fig. 44) not deeply incised, transverse normal process horizontal and contiguous; mandible (Fig. 35) robust, dens well developed, penicillus reduced; maxilla (Fig. 36) well developed, terminal palpomere strongly securiform, laterolacinia present; labium (Fig. 39) well developed, terminal palpomere strongly securiform; gula (Fig. 33) broadly triangular. **Thorax** (Figs. 37, 38): Pronotum with incipient trichobothrium (Fig. 102), usually elongate, rarely quadrate, indented at sides or not, side margins with shallow tubercle, anterior margin projecting at middle or not, prebasal depression feebly developed, dorsolateral carina not extended to anterior margin of pronotum, carina joins pronotal hem at pronotal posterior angle; elytra trapezoidal, increasingly widened to rounded posterior angles, with discal carinae; mesoscutellum subglobose; protibial anterior margin spinous (Fig. 98); ungues with denticle (Fig. 101); tibial spur formula 0-1-1; tarsal pulvillar formula 3-3-3; metathoracic wing as in Fig. 45; metendosternite (Fig. 40) with furcal lamina; glandular pit on male metatibia (Figs. 99, 100). **Abdomen:** Six visible sternites; pygidium rounded distally in both sexes. **Male genitalia** (Figs. 41, 43): Aedeagus short, tegmen slightly sclerotized, lobate distally, fimbriate, phallus well sclerotized; spicular fork (Fig. 42) comprised of two narrow plates that do not connect distally, intraspicular plate narrow and long. **Female genitalia:** Ovipositor short; dorsal and ventral laminae unilobed.

D i s t r i b u t i o n : The members of this genus range from México to Brazil.

***Platynoptera ampliata* (KLUG) (Fig. 167)**

H o l o t y p e : Gender not known. Brasilien (Brazil). (NHMB). Schenkling, 1903: 103; 1906: 311.

D i a g n o s i s : This is the only member of *Platynoptera* whose elytral disc is entirely or almost entirely black; there may be a faintly visible pale spot at the center of the disc.

D e s c r i p t i o n : **Size:** Length 16.0 mm; width 8.0 mm. **Form:** As in Fig. 167. **Color:** Cranium black, vertex with narrow flavotestaceous streak, labrum flavotestaceous; pronotum bicolorous, sides and front flavotestaceous, disc black; elytra mostly black, with two faintly visible maculae at the middle of disc. **Head:** Antennal capitulum long, each capitular antennomere longer than combined length of funicular antennomeres; antennal carina very prominent; EW/FW 45/45. **Thorax:** Pronotum quadrate, flared at sides, anterior margin projected at middle, side margin of disc rounded; PW/PL 160/160; elytra strongly flared at sides, disc with 4 carina; EL/EW 780/220. **Abdomen:** Female pygidium not incised at distal margin.

V a r i a t i o n : Size: length 12.0-16.0 mm; width 6.0-8.0 mm. In one specimen the elytral disc is entirely black.

Distribution: I examined two specimens from: Brazil, Minas, Caraça. Specimens are deposited in NHMB, MNHN, WOPC.

***Platynoptera carti* OPITZ, nov.sp. (Figs. 77, 125, 126, 163, 175)**

Holotype: ♂. Panama: Pma Pr. Llano-Carti Rd. km 9, El. 350 m, 26-Apr.1986, H. Stockwell (MIUP).

Diagnosis: This is the only member of *Platynoptera* in which the basal third of the sutural margin is distinctly black.

Description: Size: Length 9.5.0 mm; width 3.5 mm. Form: As in Fig. 163. Color: Cranium mostly black, vertex with small flavotestaceous streak; cranial venter flavotestaceous; clypeus flavotestaceous; pronotum bicolorous, mostly flavotestaceous, lower sides narrowly black; disc with two narrow black lines; mesoscutellum flavotestaceous; elytra bicolorous, mostly flavotestaceous, black in distal third and along basal third of sutural margin. Head: Antennal capitulum long (Fig. 77), each capitular antennomere longer than combined length of funicular antennomeres; antennal carina very prominent; EW/FW 18/22. Thorax: Pronotum elongate, anterior margin not projected at middle, side margin of disc with shallow tubercle; PW/PL 57/64; elytral not strongly explanate at sides, carina faintly visible; EL/EW 240/67. Abdomen: Male pygidium not incised at distal margin; aedeagus (Figs. 125, 126); phallic apex notably small.

Natural history: The holotype was collected during April, at 350 m.

Distribution (Fig. 175): Known only from the type locality.

Etymology: The trivial name, *carti*, constitutes a noun in apposition and refers to the type locality.

***Platynoptera flavohumeralis* OPITZ, nov.sp. (Figs. 78, 127, 128, 164, 175)**

Holotype: ♂. Brésil, Prov. Mato Grosso, P. Germain, 1986 (MNHN). **Paratypes:** One specimen. Peru: Yurimaguas, Chambireyacú, Juin-Aout, 1885, M. de Mathan (WOPC).

Diagnosis: This is the only member of *Platynoptera* that has a broad flavotestaceous streak that extends backwards from the humeral angle.

Description: Size: Length 12.0 mm; width 4.0 mm. Form: As in Fig. 164. Color: Cranium mostly black, vertex with small flavotestaceous streak; clypeus flavotestaceous; pronotum bicolorous, lower sides and center of disc black, upper sides and triangular portion extending back from anterior margin flavotestaceous; mesoscutellum black; elytra bicolorous, mostly black, flavotestaceous behind humerus, with postmedial flavotestaceous fascia. Head: Antennal capitulum long (Fig. 78), basal capitular antennomere longer than combined length of funicular antennomeres; antennal carina very prominent; EW/FW 20/20. Thorax: Pronotum elongate, anterior margin not projected at middle, side margin of disc with shallow tubercle; PW/PL 60/70; elytral not strongly explanate at sides, carina faintly visible; EL/EW 270/70. Abdomen: Male pygidium not incised at distal margin; Aedeagus (Figs. 127, 128); phallic apex subacuminate.

Natural history: The holotype was collected in a time frame between June and October.

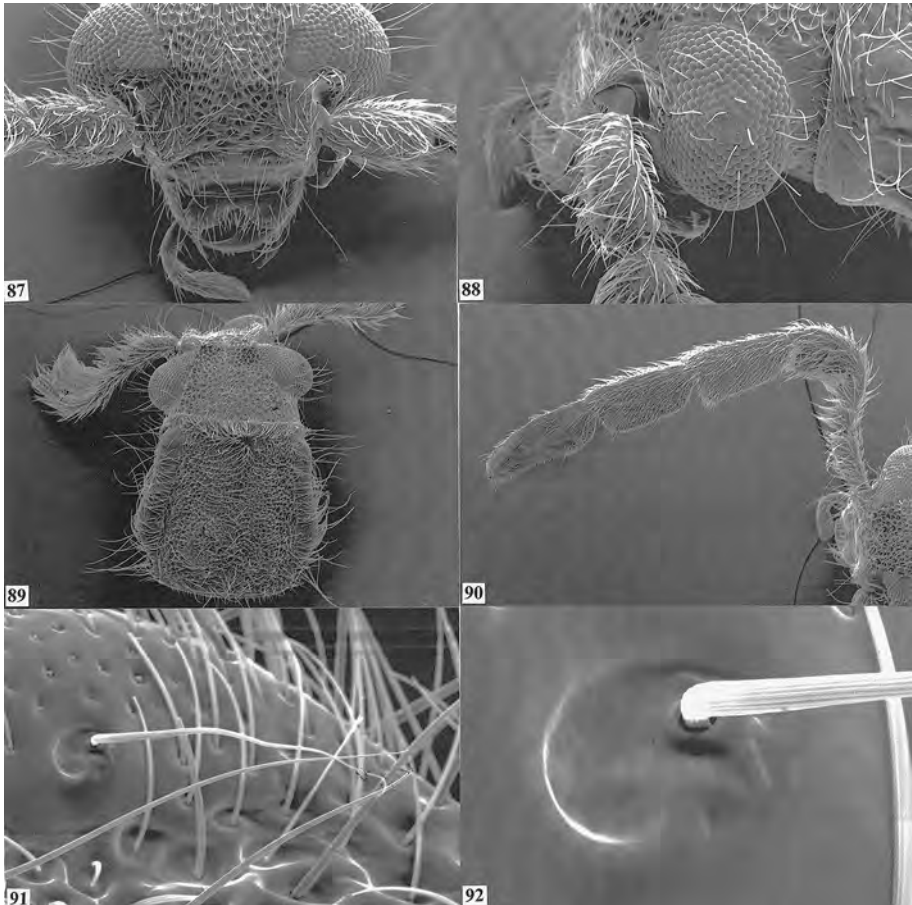
Distribution (Fig. 175): Known from Peru and Brazil.

E t y m o l o g y : The trivial name *flavohumeralis*, is a Latin compound name that stems from *flavus* (= yellow) and *humerus* (= shoulder). I refer to the color of the elytral humerus.

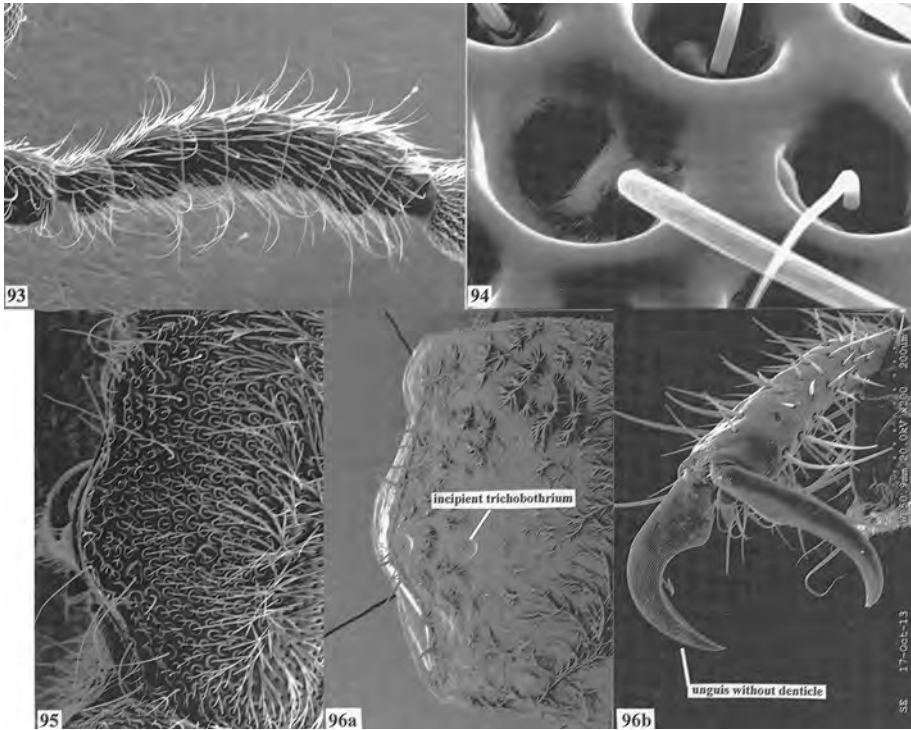
***Platynoptera humeralis* PIC, 1933 (Figs 79, 129, 130, 165, 175)**

Platynoptera humeralis PIC, 1933: 17. H o l o t y p e ♂. Faro, Amazonas (Brazil), Háhnel (MNHN). CORPORAAL, 1950: 273.

D i a g n o s i s : Within *Platynoptera*, only in specimens of this species is there a slight flavotestaceous streak that extends backwards from the humeral angle.



Figs 87-92: Morphological organs of *Ambonoides retinoides* (87) Head, frontal view; (88) Head, lateral view. (89) Forebody, dorsal view. (90) Antenna. (91-92) Incipient trichobothria on the pronotal discs.



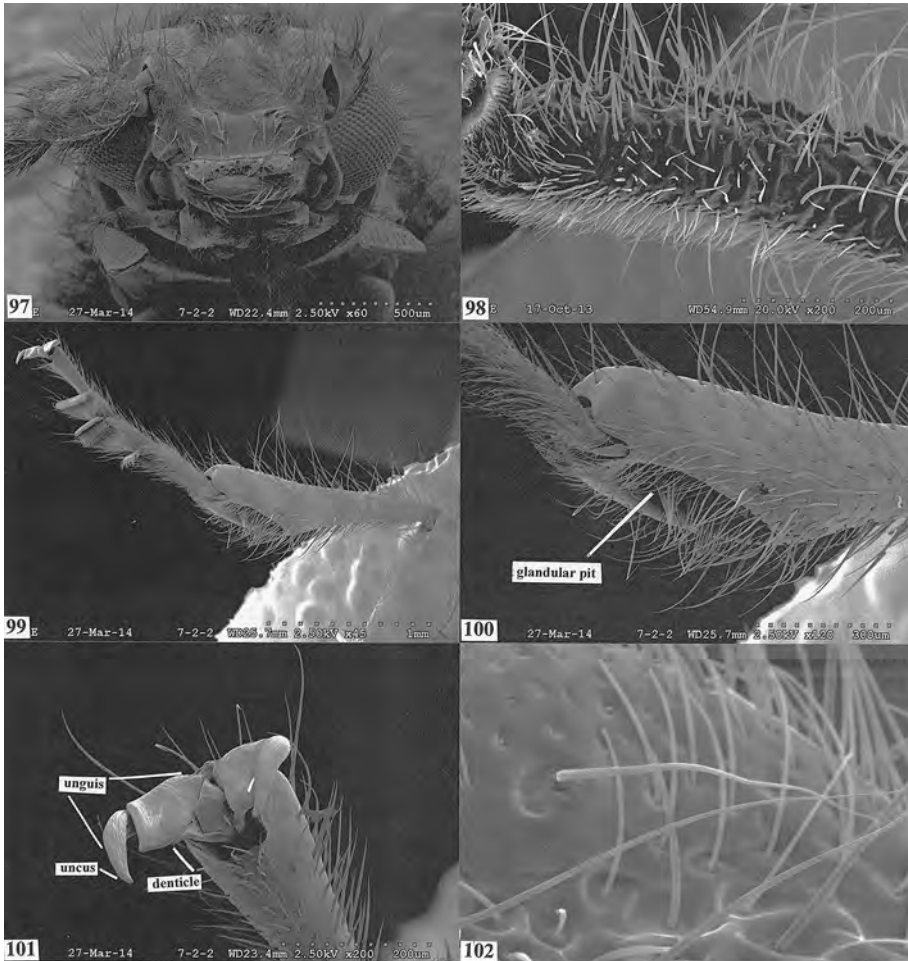
Figs 93-96b: Morphological organs of *Aspitionis alarutinis* (93-95), *Pilosirus brunnoi* (96a), *Tarandocerus lycoides* (96b). (93) Antennal funicle; (94) Insipient trichobothrium on the pronotal disc; (95) Pronotal disc; (96a) Pronotal disc; (96b) Metatarsal unguitractor.

Description: Size: Length 10.0 mm; width 4.0 mm. Form: As in Fig. 165. Color: Cranium mostly dark brown, vertex with small narrow flavotestaceous line; pronotum mostly black, upper sides and anterior margin flavotestaceous; elytral disc mostly black, with small narrow flavotestaceous streak at humeral angle. Head: Antennal capitulum very long (Fig. 79), each capitular antennomere as long as combined length of scape, pedicel, and funicle; antennal carina very prominent; EW/FW 25/10. Thorax: Pronotal anterior margin not projected at middle, sides of disc slightly depressed; side margin of disc with shallow tubercle; PW/PL 60/65; elytra only slightly flared; disc without discal carinae; EL/EW 235/57. Abdomen: Male pygidium not incised at distal margin; aedeagus as in Figs. 129, 130.

Variation: Size: length 10.0-11.0 mm; width 4.0-4.5 mm. The dark macula on the pronotal disc may extend to the anterior margin of the pronotum. In a second specimen, the elytral disc shows a midelytral flavotestaceous fascia.

Natural history: A specimen was collected in February.

Distribution (Fig. 175): In addition to the types I examined 1 specimen. **Peru**, Madre de Dios, Rio Tambonata Res., 30 km SW Maldonato, 15-20-II-1982, swept bark, 280 m, N.E. Stork. Specimens are deposited in BMNH and MNHN.

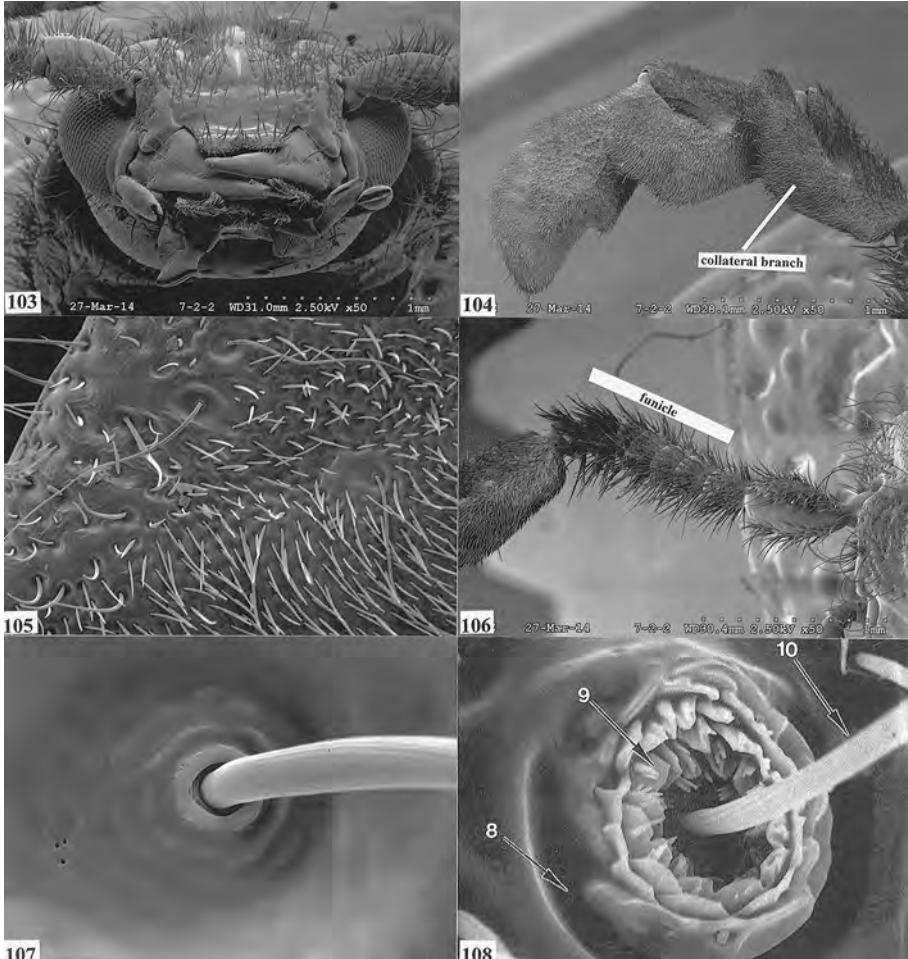


Figs 97-102: Morphological organs of *Platynoptera lyciformis*. (97) Head, frontal view; (98) Protibia; (99) Metathoracic leg; (100) Male metathoracic leg showing glandular pit; (101) Metatarsus; (102) Pronotal disc showing incipient trichobothrium.

***Platynoptera lyciformis* CHEVROLAT (Figs 31-45, 80, 131, 132, 166, 175)**

Platynoptera lyciformis CHEVROLAT, 1834: Nr. 18, table 30, 292. Lectotype ♀. Here designated. Brasilia (Brazil) (MNHN). LACORDAIRE 1857: 477. SCHENKLING 1903: 103; 1906: 311. Paralectotypes: One specimen. Bresil (Brazil) (MNHN).

Diagnosis: Four elytral carinae are very prominent on the elytral disc of *Platynoptera lyciformis* and *P. ampliata*. But, specimens of *lyciformis* have a broad testaceous fascia on the elytral disc, which is not the case in *ampliata* specimens.



Figs 103-108: Morphological organs of *Tarandocerus lycoides* (103-107) and *Plocamocera coactilis* (108). (103) Head, frontal view; (104) Antennal capitulum; (105) Pronotal disc; (106) Antennal funicle; (107) Pronotal disc showing insipient trichobothrium; (108) Pronotal trichobothrium (8 bothrium, 9 trabaculae, 10 trich).

Description: Size: Length 15.0 mm; width 8.0 mm. Form: As in Fig. 166. Color: Cranium mostly black, vertex with small narrow testaceous line; pronotum mostly black, upper sides and anterior wedged-shaped macula testaceous; elytral disc mostly black, with midelytral testaceous fascia. Head: Antennal capitulum very long (Fig. 80), basal capitular antennomere as long as combined length of scape, pedicel, and funicle; antennal carina very prominent; EW/FW 25/20. Thorax: Pronotal anterior margin projected at middle, sides of disc depressed; side margin of disc rounded at middle; PW/PL 80/85; elytra conspicuously flared; disc with 4 prominent discal carinae; EL/EW 180/55. Abdomen: Male pygidium not incised at distal margin; aedeagus as in Figs. 131, 132.

Variation: Size: length 13.0-15.0 mm; width 7.0-8.0 mm. The anterior dark macula on the elytral disc varies in expression.

Distribution (Fig. 175): In addition to the types I examined 5 specimens. Brazil, Rio de Janeiro, P Germain, 1883; Nova Teutonia, I-1966, Fritz Plaumann; GB, 9-IX-1968, Corcovado, S.A.F. Specimens are deposited in MHNG, MNHN, and WOPC.

***Platynoptera ochreata* OPITZ, nov.sp. (Figs. 81, 168, 173)**

Holotype: ♀. Costa Rica: Puntarenas Prov. nr. Buenos Aires, 18-VI-1976, D.H. Habeck (WFBM).

Diagnosis: This is the only member of *Platynoptera* whose elytral disc is entirely flavotestaceous.

Description: Size: Length 13.0 mm; width 4.0 mm. Form: As in Fig. 168. Color: Cranium mostly black, frons and vertex with narrow flavotestaceous streak, clypeus flavotestaceous; pronotum bicolorous, lower sides infuscated, disc with two linear infuscations; elytra flavotestaceous, slightly infuscated at base of sutural margin. Head: Antennal capitulum long (Fig. 81), basal capitular antennomere longer than combined length of funicular antennomeres; antennal carina very prominent; EW/FW 20/15. Thorax: Pronotal anterior margin not projected at middle, side margin of disc with shallow tubercle; PW/PL 70/80; elytral moderately explanate at sides, disc with 3 carina; EL/EW 340/95. Abdomen: Female pygidium not incised at distal margin.

Natural history: The holotype was collected in June.

Distribution (Fig. 173): Known only from the type locality.

Etymology: The trivial name, *ochreata* Greek stems from *ochros* (= pale yellow). I refer to the color of the elytral disc.

***Tarandocerus* CHEVROLAT**

Tarandocerus CHEVROLAT, 1876: 7.

Type species: *Platynoptera lycoides* SPINOLA, 1844: 67. By present designation.

Diagnosis: Within Platynopterinae only members of *Tarandocerus* have a collateral branch on antennomeres 9 and 10 (Figs. 46, 47).

Description: Size: Length 9.0-19.0 mm; width 4.5-8.0. Form: Elytra trapezoidal, posterior half of elytra may be flared, elytral posterior angle broadly rounded. Integumental color: Antenna always black; mandible black, other mouthparts flavotestaceous to light brown; cranium mostly black, epicranium narrowly flavotestaceous, cranium rarely with narrowly flavotestaceous frons; pronotum unicolorous or bicolorous, rarely tricolorous, when unicolorous flavotestaceous, when bicolorous upper sides flavotestaceous and at lower sides and disc black, black disc region may show narrow or broad flavotestaceous line, lower sides rarely red, pronotal venter flavotestaceous or brown; elytra mostly black or mostly flavotestaceous, black regions may have bluish tinge; legs entirely black or black in distal third and decreasingly flavotestaceous from profemur to metafemur; pterothorax and abdomen black. Vestiture: Integument highly setose, funicular antennomeres densely setose, cranium and pronotum densely vested with decumbent setae, elytra densely vested with short 2° setae and fewer 1° setae that become more prominent along epipleural and sutural margins; legs highly setose. Head

(Figs. 48-50, 103): Cranial setose punctation small; frons roughly sculptured; eyes bulging, finely faceted and deeply broadly incised along frontal margin; antenna (Figs. 46, 47, 104, 106) capitate, inserted at level of eye incision (= ocular notch); antennal carina very prominent, comprised of 11 antennomeres, scape very robust, pedicel subquadrate, funicular antennomeres transverse, capitulum very long, about a third times longer than length of other antennomeres combined, antennomeres 9 and 10 with collateral branches, branches more prominent in males (Fig. 46) than in females (Fig. 47); labrum (Fig. 54) not deeply incised, transverse tormal process horizontal and contiguous; mandible (Fig. 55) robust, dens well developed, penicillus reduced; maxilla (Fig. 57a) well developed, terminal palpomere subsecuriform, laterolacinia present; labium (Fig. 56) well developed, terminal palpomere subsecuriform; gula (Fig. 49) triangular. **Thorax** (Figs. 51, 52, 105): Pronotum with incipient trichobothrium (Fig. 107), quadrate or elongate, side margins rounded at middle, anterior margin linear, prebasal depression feebly developed, dorsolateral carina not extended to anterior margin of pronotum, carina joins pronotal hem at pronotal posterior angle; elytra trapezoidal, sometimes increasingly widened to rounded posterior angles, with discal carinae; mesoscutellum quadrate; protibial anterior margin spinous; unguis without denticle (Fig. 96b); tibial spur formula 0-1-1; tarsal pulvillar formula 3-3-3; metathoracic wing as in Fig. 61a; metendosternite (Fig. 53) with furcal lamina. **Abdomen**: Six visible sternites; pygidium rounded distally in both sexes, rarely incised in male. **Male genitalia** (Figs. 58, 59, 60): Aedeagus short, tegmen well or feebly sclerotized, lobate distally, fimbriate, phallus well sclerotized; spicular fork (Fig. 57b) comprised of two narrow plates that connect at proximal fourth, intraspicular plate narrow and long. **Female genitalia**: Ovipositor short; dorsal and ventral laminae trilobed. **Alimentary canal** (Fig. 61b): Proventriculus moderately developed; ventriculus narrow, papillae poorly developed; 4 cryptonephridial Malpighian tubules. **Male mesodermal reproductive organs** (Fig. 61c): Two pairs of accessory glands; testis comprised of more than 40 follicles. **Female mesodermal reproductive organs** (Fig. 61d): Spermathecal capsule well sclerotized; spermathecal gland attached to base of capsule; bursa copulatrix saccular.

D i s t r i b u t i o n : The members of this genus range from México to Argentina.

***Tarandocerus auratus* OPITZ nov.sp. (Figs 83, 135, 136, 169, 174)**

H o l o t y p e : ♂. Paso del Macho, Mexico, Hoege (MNHN). **P a r a t y p e s** : Five specimens. **México**: Veracruz: Paso del Macho (MNHN, 2; WOPC, 1). México (MNHN, 2).

D i a g n o s i s : Within *Tarandocerus* there are two species, *T. auratus* and *T. mexicanus*, whose members have the pronotal disc densely covered with gold-colored setae. But, in *T. auratus* specimens the basal third of the pronotal disc is only infuscated, whereas in specimens of *T. mexicanus* the basal third of the elytral disc is completely black.

D e s c r i p t i o n : **Size**: Length 19.0 mm; width 8.0 mm. **Form**: As in Fig. 169. **Color**: Cranium mostly dark brown, vertex with a slightly visible flavotestaceous streak; pronotum flavotestaceous, vested with gold-colored setae; elytra bicolored, anterior third infuscated, posterior third of disc black, with very broad middle flavotestaceous fascia. **Head**: Basal antennomere of antennal capitulum (Fig. 83) as long as combined length of funicular antennomeres, antennomeres 9 and 10 with short collateral branch; antennal carina very prominent; EW/FW 25/33. **Thorax**: Pronotal anterior margin not projected at middle; side margin of disc slightly rounded at middle; PW/PL 105/115; elytra conspi-

cuously flared; disc with 3 prominent discal carinae; EL/EW 420/130. Abdomen: Male pygidium not incised at distal margin; aedeagus as in Figs. 135, 136; tegmen well sclerotized.

V a r i a t i o n : Size: Length 16.0-19.0 mm; width 6.0-8.0 mm. The black infuscation behind the humeral margin varies in expression. It is completely missing in one specimen.

D i s t r i b u t i o n (Fig. 174): This species is known only from México. Specimens are deposited in MNHN and WOPC

***Tarandocerus lycoides* (SPINOLA), 1844 (Figs. 46-61a, 96b, 103-107, 170, 176)**

Platynoptera lycoides SPINOLA, 1844: 67. Lectotype. ♂. Here designated. CARTHAGÈNE (Colombia) (MNHN). New Combination. IMHOFF, 1956: plate 6, figure 32 (*Enoplium*). LACORDAIRE, 1857: 477 (*Platynoptera*). DESMAREST, 1852: plate 18, figure 3 (*Platynoptera*). KIRSCH, 1865: 93 (*Platynoptera*). SCHENKLING, 1903: 103 (*Platynoptera*); 1906: 311 (*Platynoptera*). HEYNE & TASCHENBERG, 1908: plate 26, fig. 24 (*Platynoptera*). JACOB, 1940: 216 (*Platynoptera*).

Platynoptera arcuatefasciata PIC, 1955a: 231. New Synonymy. Rio Juntas (Brazil), Garlepp. (MNHN).

Platynoptera basifasciata PIC, 1955a: 231. New Synonymy. Rio Juntas (Brazil), Garlepp. (MNHN).

Platynoptera boliviana PIC, 1955a: 232. New Synonymy. Bolivia (MNHN).

Platynoptera breveapicalis PIC, 1950: 8. New Synonymy. Argentina, Tucuman. (MNHN).

Platynoptera dilateapicalis PIC, 1955a: 231. New Synonymy. Rio Juntas (Brazil), Garlepp. (MNHN).

Platynoptera externenotata PIC, 1955a: 231. New Synonymy. La Merced, Chanchamayo (Peru), 1902. (MNHN).

Platynoptera mathani PIC, 1955b: 8. New Synonymy. Colombia (MNHN)

Platynoptera pectoralis SCHENKLING, 1900: 401. New Synonymy. GOYAS (Brazil) (2 syntypes) (SDEI). SCHENKLING, 1903: 103; 1906: 311. CORPORAAL, 1950: 273.

Platynoptera peruviana PIC, 1950: 7. New Synonymy. La Merced, Chanchamayo (Peru), 1902 (3 Syntypes) (MNHN). CORPORAAL, 1950: 273.

Platynoptera simplex SCHENKLING, 1900: 402. New Synonymy. GOYAS (Brazil) (Holotype) (SDEI). CORPORAAL, 1950: 273. SCHENKLING, 1903: 103; 1906: 311.

Platynoptera suturalis SCHENKLING, 1898: 367. New Synonymy. Bolivia (Holotype) (SDEI).

Platynoptera tucumanensis SCHENKLING, 1908: 703. New Synonymy. Argentina, Prov. Tucuman, Tapia 600 m, C.A. Baer, 3-4 1903 (2 syntypes) (SDEI). SCHENKLING, 1903: 103; 1906: 311. CORPORAAL, 1950: 273. SOLERVICENS, 2008: 593.

N o t e s : The abundance of synonyms expresses the great variety of elytral color among the members of this species. The extent of widening of the elytra is also variable. But the male genitalic characteristics show that the variations in color and elytral form, the descriptive basis for the junior synonyms, fall within the morphologic range of *Tarandocerus lycoides* (Spinola).

P a r a l e c t o t y p e s : One specimen from Colombia (MNHN). In his description of this species SPINOLA (1844: 69) notes, in great detail, the variation in elytral color. This suggests that he had more than one specimen before him at the time the description was made. I, Ekis (now OPITZ) (1975: 51) did not find any specimens of *Platynoptera lycoides* in the Spinola collection. However, two specimens with a Spinola-type of label were found in the Paris Museum collection. I believe that these specimen formed part of the syntypic series examined by Spinola.

D i a g n o s i s : The 8 spines on the anterior margin of the protibiae will distinguish

the members of this species from the superficially similar specimens of *Tarandocerus testaceiceps* PIC; which show no protibial spines.

Description: Size: Length 13.0 mm; width 6.0 mm. Form: As in Fig. 170. Color: Cranium mostly black, vertex with faintly visible narrow flavotestaceous line; pronotum mostly black, upper sides flavotestaceous; elytra bicolored, anterior half of disc flavotestaceous, posterior half dark blue. Head: Cranium transverse (Figs. 48-50); antennomeres of antennal capitulum (Figs. 46, 47) not as long as funicular antennomeres combined, antennomeres 9 and 10 with collateral branch; antennal carina very prominent; EW/FW 20/20. Thorax: Pronotal anterior margin not projected at middle (Figs. 51, 52); side margin of disc slightly rounded at middle; PW/PL 65/65; elytra moderately flared; disc with 4 prominent discal carinae; EL/EW 290/70. Abdomen: Male sixth visible sternite and male pygidium broadly incised at distal margin; aedeagus as in Figs. 58-60.

Variation: Size: length 12.0-13.0 mm; width 5.0-5.0 mm. The morphological variations are as follows: proportion of black to flavotestaceous on the elytral disc, dark portions on the elytral disc black or bluish, width of the posterior half of the elytra.

Natural history: Specimens of this species have been collected throughout the year, at altitudes ranging from 600 to 1829 m.

Distribution (Fig. 176): In addition to the types I examined 134 specimens. Colombia, Manizales; Valle de Cauca, 1898, M. de Mathan. Bolivia, Santa Cruz, 6-6 km SSE Buena Vista, F & F Hotel, 20-31-V-2003, Robin Clarke; *idem*, 4-5 km N Achira, Rd to Amboro, 21-22-X-2000, Morris & Wappes; La Paz, Sud Yungas, 4 km W. of Chulumán, Rio Cordoriri, 25-V-1989, P.J. Clausen; *idem*, 26-V-1989, 1585 m, P.J. Clausen; Santa Cruz, Agua Clara, 3-4 km NW, 12-X-2000, B.K. Dozier; Cochabamba, Cochabamba, 69 km W Villa Tunari, 15-IX-1992, 1829 m, E. Giesbert. Peru, La Merced, Chanchamayo, 1902; Paucartambo, J. Clermont. Venezuela, Distrito Federal, Pico de Avila, 29-VIII-1963, Carlos Bordon; Caracas. Brazil, Nova Teutonia, X-1971, F. Plaumann; Jatahy, Estado Goyas, 1895-1896, Ch. Pujol; Goyaz, Rio Verde, 1908, G.A. Baer; Mato Grosso, Rio Caraguatá, 11-1953, 21°48'S 52°27'W, Fritz Plaumann; Vila Velha, 28-IX-1969; Et. De Sao Paulo val du Rio Pardo, XII-1998, E. Gounelle; *idem*, Ilha Solteira, metropolitan area, 8-IV-1993, N.C. Noronha; Rio Juntas, Garlepp; Goyas. Argentina, Tablillas, Salta; Misiones, Dos de Mayo, 10-I-1989, J. Foerster; Chaco, X-1992, La Armonia; Salta, Vespucio, 5-XII-1947; *idem*, 20 km N La Caldera, El Ucumar, 780 m, 31-I-1982, H. & A. Howden; *idem*, Oran, km 27 Rio Arrayazal, Las Pavas, 1-6-X-1979, 600 m, R. Golbach; *idem*, Jujui, camino de cornisa, 11-III-1963, A. Willink; *idem*, Cerro Perales, 17-I-1948; *idem*, Rio Juramento, IX-1961, A. Luna Reyens; *idem*, La Caldera, 13-XI-1947, Duret; Tucuman; *idem*, Los Gómez, III-1949, O. Budin; *idem*, Alpachiri, VII-1946, R. Golbach; *idem*, Taff Lacavera, 28-XI-1951, R. Golbach; *idem*, Campamento Jacúlica, 22 km W Aguas Blancas, 15-VII-1971, C. Porter & L. Stange; El Ucumara, Salta Ruta 9, 7-XII-1985. Paraguay, Lep. Pte. Hayes, Puerto Galileo, 25°04'S 57°52'W. Specimens are deposited in FSCA, IMLA, JEWC, MNHN, WFBM, and WOPC.

***Tarandocerus mexicanus* (THOMSON), 1860 (Figs 84, 137, 138, 171, 173)**

Platynoptera mexicana THOMSON, 1860: 65.

Holotype. ♀. Mexicum (México) (MNHN). New combination. GORHAM, 1883: 183 (*Platynoptera*). SCHENKLING, 1903: 103 (*Platynoptera*); 1906: 311 (*Platynoptera*). CORPORAAL, 1950: 273 (*Platynoptera*).

D i a g n o s i s : Within *Tarandocerus* there are two species whose members have the pronotal disc densely covered with gold-colored setae. But, *T. mexicanus* specimens have the basal third of the elytral disc completely black, whereas in specimens of *T. auratus* the basal third of the disc is only infuscated.

D e s c r i p t i o n : Size: Length 14.0 mm; width 6.0 mm. Form: As in Fig. 171. Color: Cranium mostly black, upper frons with a slightly visible flavotestaceous streak; pronotum flavotestaceous, vested with gold-colored setae; elytra bicolored, anterior third and posterior third of disc mostly dark blue, with middle flavotestaceous fascia. Head: Basal antennomere of antennal capitulum (Fig. 84) not longer than combined length of funicular antennomeres, antennomeres 9 and 10 with short collateral branch; antennal carina very prominent; EW/FW 20/30. Thorax: Pronotal anterior margin not projected at middle; side margin of disc slightly rounded at middle; PW/PL 90/95; elytra conspicuously flared; disc with 3 prominent discal carinae; EL/EW 370/120. Abdomen: Male pygidium slightly incised at distal margin; aedeagus as in Figs. 137, 138; tegmen slightly sclerotized.

V a r i a t i o n s : Size: Length 12.0-14.0 mm; width 6.0-8.0 mm. Except for differences in body size these beetle are quite homogeneous.

N a t u r a l h i s t o r y : Specimens were collected during April, May, and June; one specimen at light and others at altitudes from 650 to 1829 m.

D i s t r i b u t i o n (Fig. 173): In addition to the holotype I examined 6 specimens. México, Chiapas, 3.2 km N Ocosingo, 23-VI-1985, Dan Heffern; Hidalgo, Molango, Otongo, 10-V-1980, light trap, 650 m, R. Terrón. Guatemala, Baja Verapaz, Cubulco, Champion; Zacapa, nr. San Lorenzo, 13-IV-1990, 1220-1829 m, J.E. Wappes. Honduras, Francisco Morazan, 23.8 km SSW Telanga, 3-VI-1993, R. Turnbow. Specimens are deposited in JEW, JNRC, MNHN, WFBM, and WOPC

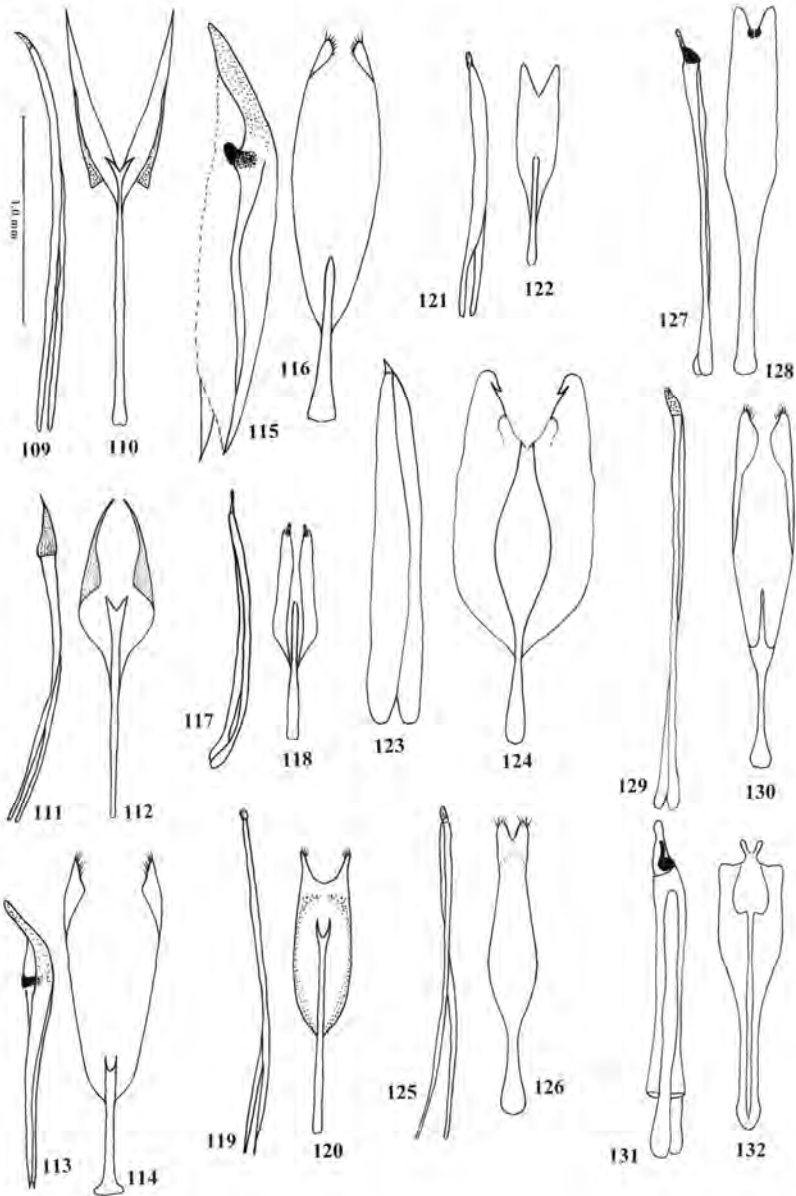
***Tarandocerus testaceiceps* (PIC), 1936 (Figs. 85, 139, 140, 172, 175)**

Platynoptera testaceiceps PIC, 1936: 6. Lectotype. ♂. Here designated. Brasilien (Brazil), Nova Teutonia, Fritz Plaumann (MNHN). New Combination. CORPORAAL, 1950: 273 (*Platynoptera*). Paralectotypes: One specimen from Brazil, Bahia, Cachimbo, 1890, Ch Pujol (MNHN).

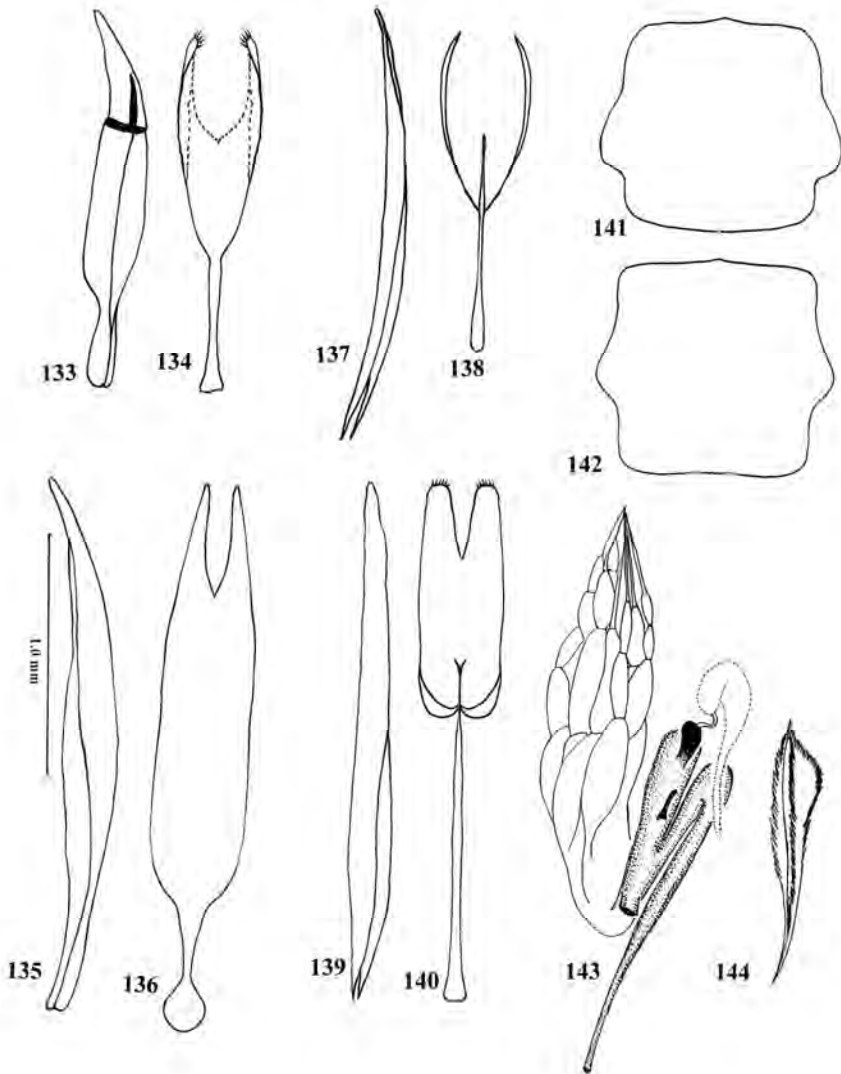
D i a g n o s i s : Absence of protibial spines in specimens of *Tarandocerus testaceiceps* will distinguish the members of this species from congeners.

D e s c r i p t i o n : Size: Length 12.0 mm; width 4.0 mm. Form: As in Fig. 172. Color: Cranium mostly flavotestaceous, black line behind eyes; pronotum mostly flavotestaceous, with two black lines on the pronotal disc; elytra bicolored, anterior half of disc flavotestaceous, posterior half black. Head: Antennal capitulum (Fig. 85) longer than combined length of scape, pedicel, and funicle, antennomeres 9 and 10 with collateral branch; antennal carina very prominent; EW/FW 23/28. Thorax: Pronotal anterior margin not projected at middle; side margin of disc slightly rounded at middle; PW/PL 75/80; elytra conspicuously flared; disc with 4 prominent discal carinae; EL/EW 330/90. Abdomen: Male pygidium not incised at distal margin; aedeagus as in Figs. 139, 140; ventral surface of tegminal lobe with prominent spine.

V a r i a t i o n : Size: Length 10.0-16.0 mm; width 3.5-8.0 mm. The proportion of black to flavotestaceous varies on the elytral disc.



Figs 109-132: Aedeagi. (109) *Ambonoides retinoides* phallus; (110) *A. retinoides* tegmen; (111) *A. caraguata* phallus; (112) *A. caraguata* tegmen; (113) *Artoadenus dius* phallus; (114) *A. dius* tegmen; (115) *A. regina* phallus; (116) *A. regina* tegmen; (117) *Aspitonis alarutinis* phallus; (118) *A. alarutinis* tegmen; (119) *A. chiapas* phallus; (120) *A. chiapas* tegmen; (121) *A. undulicornis* phallus; (122) *A. undulicornis* tegmen; (123) *Isoforma biguttula* phallus; (124) *I. biguttula* tegmen; (125) *Platynoptera carti* phallus; (126) *P. carti* tegmen; (127) *P. flavohumeralis* phallus; (128) *P. flavohumeralis* tegmen; (129) *P. humeralis* phallus; (130) *P. humeralis* tegmen; (131) *P. lyciformis* phallus; (132) *P. lyciformis* tegmen.



Figs 133-144: Aedeagi (133-140), Pronota (141-142), and Female mesodermal female reproductive organs (143-144). (133) *Artoadenus similis* phallus; (134) *A. similis* tegmen; (135) *Tarandocerus auratus* phallus; (136) *T. auratus* tegmen; (137) *T. mexicanus* phallus; (138) *T. mexicanus* tegmen; (139) *T. testaceiceps* phallus; (140) *T. testaceiceps* tegmen; (141) *Pilosirus amazonicus*; (142) *P. versus*; (143) *Ambonoides retinoides* female internal reproductive organs; (144) *A. retinoides* bursal plate.

Natural history: Specimens were collected in October and November.

Distribution (Fig. 175): In addition to the types I examined 12 specimens. Brazil, Santa Catarina, Nova Teutonia, 27°11'S 52°23'W, X-27-1944, F. Plaumann; Bahia, Cachimbo, 1890, Ch Pujol. Paraguay, Dr. Bohls; Caaguazu, 9-XI-1951, Forster. Specimens are deposited in AMNH, MNHN, NHMB, and WOPC.

Trichobothrial Development

SCHUH (1975: 2) and OPITZ (2004: 19) reviewed the literature pertaining to the distribution of trichobothria among Arthropods. In my publication, I focused on the development of this organ in the Epiphloeinae genus *Plocamocera* SPINOLA (Fig. 108). During subsequent research I found that fully developed trichobothria were present in all Epiphloeinae, and in a family-level study (OPITZ, 2010), I assessed the presence of this structure as one of the important apotopies of the subfamily.

Trichobothrial development comes in different forms among insects and spiders (OPITZ, 2004: 20). However, in all cases the consensus is that a trichobothrium is composed of a well-developed bothrium and elongated trich. To this definition I added the presence, in the bothrium, of a complex arrangement of trabiculae (Fig. 108). All three components, the bothrium, trich, and trabiculae, define the trichobothrium in Epiphloeinae. In members of Platynopterinae one finds the beginnings of trichobothrial construction (Fig. 92). A comparatively short trich is present but the trich is set into a shallow circular depression that has not evolved into a fully developed bothrium. Moreover, it appears that in most genera of Platynopterinae, there is only one pair of "incipient" trichobothrium. An advanced condition is found in *Pilosirus* (Fig. 96a) and *Tarandocerus* (Fig. 105) in which there is more than one pair of incipient trichobothrium. The progression from one incipient trichobothrium to two is used herein to help define evolutionary relationships among the taxa of Platynopterinae.

Zoogeographic Considerations

The known distribution of species of Platynopterinae is illustrated in 4 maps (Figs 73-76) and their occurrence in endemic clerofaunas is depicted in Table 2. These clerofaunas, essentially refugial forests, are defined in OPITZ (2005: 105), essentially represent an offshoot of the works of ERWIN & POGUE (1988: 181), LIEBHERR (1994: 847), and WHITEHEAD & BALL (1997: 396).

Considering the relatively few number of specimens that were available of most of the genera under consideration, an analysis of biogeography must be considered tentative. Nevertheless, a few comments are provided to begin some lines of thought that may be subsequently augmented when new data becomes available. When one examines Table 2 it becomes evident that the genera under study are widely distributed in the New World, with only *Ambonoides* and *Pilosirus* restricted to South America and *Aspitionis* limited to Middle America.

One may infer from this, and distributional evidence from large Peloniinae genera such as *Pelonium* SPINOLA and *Cregya* LÉCONTE, that the genera under study stem from a

fairly ancient South American ancestral fauna that was involved in multiple dispersions into refugial highlands of Middle America. The conjecture of a South American origin of the taxa under investigation assumes four independent northern dispersals involving *Artoadenus*, *Isoforma*, *Platynoptera*, and *Tarandocerus*. These dispersals would have occurred prior to the Miocene Andean orogeny and early closure of the Panamanian Portal about 25 million years ago (FORD 2006: 99; DONNELLY 1988: 25).

To date, the South American *Tarandocerus lycoides* SPINOLA, of which there were 134 specimens available, represents the most widely distributed species of Platynopterinae. As is undoubtedly true of members of other genera in Platynopterinae, *T. lycoides* representatives are strong fliers and are probably widely distributed in concert with distributional attributes of their Lycidae mimetic models.

Table 2. Distribution of species of *Ambonoides*, *Artoadenus*, *Aspitionis*, *Isoforma*, *Pilosirus*, *Platynoptera*, and *Tarandocerus* in areas of endemism (areas of endemism after OPITZ 2005: 112).

Areas of Endemism*	<i>Ambonoides</i>	<i>Artoadenus</i>	<i>Aspitionis</i>	<i>Isoforma</i>	<i>Pilosirus</i>	<i>Platynoptera</i>	<i>Tarandocerus</i>
Mexo-America		•	••			••	
Nuclear Central America							
Insular Central America		•	••			••	
SA-Cordillera Occidental							•+
SA-Cordillera Oriental							•+
SA-Guiana Highland		•		••			
SA-Amazon	•			•	•	••	•+
Basin							
SA-Altiplano Complex					••		•+
SA-Brazilian Highlands	•			••	•	•	•••

+Signifies distribution in multiple areas of endemism of species.

Phylogenetic interpretations

I used 21 characters whose states were organized into a matrix (Table 1) that involved two species of *Ambonoides*, three of *Artoadenus*, four of *Aspitionis*, six of *Isoforma*, four of *Pilosirus*, six of *Platynoptera*, and four of *Tarandocerus*. One character state involved the out-group genus *Apolopha* SPINOLA. One phylogenetic tree (L = 21, Ci = 90, Ri = 100) (Fig. 177) was generated by computer via NONA (GOLOBOFF 2003) in combination with Winclada version 1.00.08 (NIXON 2002).

In 2010 I presented a hypothesis of phylogeny for the subfamily Epiphloeinae with

nearly all subfamily lineages supported by a synapotypy (OPITZ 2010: 117). In that phylogenetic diagram Epiphloeinae is expressed as the sister group to the Tarsosteninae-Peloniinae-Enopliinae-Neorthopleurinae-Korynetinae lineage. The discovery that the seven genera of Peloniinae have incipient trichobothria enables me to resurrect the subfamily Platynopterinae and hypothesize that Platynopterinae is the sister taxon to Epiphloeinae. The synapotypies for Epiphloeinae are: furcal lamina absent, antenna inserted at the base of the antennal notch, and presence of a fully-formed pronotal trichobothria. An incipient trichobothrial development is the synapotypic characteristic that establishes the monophyly of Platynopterinae.

On the basis of the available evidence, in part gleaned from outgroup comparisons, we can speculate that the ancestor of the Platynopterinae taxa was characterized by a rectangular body form, capitate antennae whose funicular antennomeres were minimally setose, a pronotum that showed a pair of incipient trichobothria, and the tarsal spur formula was 2-2-2. From this putative South American ancestor (ancestor A) there evolved two lineages. In one of this lineage, which led to ancestor B, the epicranium and the pronotal disc became roughly sculptured and there was a loss of the protibial spurs. Ancestor B diversified into two lineages, one of which led to *Aspitionis* and the other to ancestor C. From the latter progenitor there evolved a lineage, in which the 7th antennomere became enlarged. Eventually ancestor C generated the South American genera *Ambonoides* and *Pilosirus*.

Ancestor A also evolved a lineage in which asetiferous punctation was lost and the tibial spur formula was reduced to 0-1-1. This line generated ancestor D which subsequently evolved into ancestor E and F. Progenitor E, characterized by the glandular pit of the metatibiae of males, generated the widespread genera *Platynoptera* and *Artoadenus*. The complementary stock led to ancestor F, in which the pronotal disc attained rows of setae and the phallic plates broadened. Ancestor F eventually generated the genera *Tarandocerus* and *Isoforma*.

Acknowledgments

I am very grateful to the curators noted in the section of "Repository of Specimens" for entrusting me with specimens in their charge. My thanks to John M. Leavengood, Jr. for his review of the manuscript. A special thanks to Roland Gerstmeier and Jean Michel Maes for their unfailing assistance with the German and Spanish translations of the abstract.

Zusammenfassung

Der Name der Unterfamilie Platynopterinae wird wieder eingeführt. Die Unterfamilie enthält sieben Gattungen. Die Merkmale der Gattung *Pilosirus* werden kurz diskutiert. Die Cleridengattungen *Platynoptera* CHEVROLAT und *Tarandocerus* CHEVROLAT werden erneut beschrieben sowie die neuen Gattungen *Ambonoides*, *Artoadenus*, *Aspitionis*, *Isoforma* und 21 neue Arten werden beschrieben. *Ambonoides* beinhaltet *A. retinoides* OPITZ nov.sp. und *A. caraguata* OPITZ nov.sp.; *Artoadenus* beinhaltet *A. dius* OPITZ nov.sp., *A. regina* OPITZ nov.sp., und *A. similis* OPITZ nov.sp.; *Aspitionis* includes *A. alarutinis* OPITZ nov.sp., *A. chiapas* OPITZ nov.sp., *A. graminis* OPITZ nov.sp., und *A. undulicornis* OPITZ nov.sp.; *Isoforma* beinhaltet *I. biguttula* OPITZ nov.sp., *I. fritilla* OPITZ nov.sp., *I. goryi* (LAPORTE), *I. planata* OPITZ nov.sp., *I. plauta* OPITZ nov.sp., und *I.*

subgilva OPITZ nov.sp.; *Pilosirus* includes *P. amazonicus* OPITZ nov.sp., *P. brunoii* OPITZ, *P. fasciatus* OPITZ nov.sp., and *P. versus* OPITZ nov.sp.; *Platynoptera* includes *P. ampliata* (KLUG), *P. carti* OPITZ nov.sp., *P. flavohumeralis* OPITZ nov.sp., *P. humeralis* PIC, *P. lyciformis* Chevrolat, and *P. ochreatea* OPITZ nov.sp.; und *Tarandocerus* beinhaltet *T. auratus* OPITZ nov.sp., *T. lycoides* SPINOLA; *T. mexicanus* (THOMSON), und *T. testaceiceps* PIC. 12 neue Synonyme werden designiert: *Tarandocerus lycoides* (= *Platynoptera arcuatefasciata* PIC, *P. basifasciata* PIC, *P. boliviana* PIC, *P. breveapicalis* PIC, *P. dilateapicalis* PIC, *P. externenotata* PIC, *P. mathani* PIC, *P. pectoralis* SCHENKLING, *P. peruviana* PIC, *P. simplex* SCHENKLING, und *P. tucumanensis* SCHENKLING). Lectotypen werden für *Platynoptera lyciformis* CHEVROLAT und für *Tarandocerus lycoides* (SPINOLA) bestimmt.

Das Vorkommen eines beginnenden Trichobothriums auf der Halsschildscheibe definiert die Monophylie der Gattungen des Platynopterinae. Die Körperform vieler dieser Buntkäfer ähnelt Vertretern der Familie Lycidae, die als Repräsentanten Bates'scher Mimikry gelten. 20 morphologische Merkmale wurden mit WINCLADA in Kombination mit NONA analysiert. Ein komplett aufgelöste Bäume konnten generiert werden. Es wird postuliert, dass der Vorfahre dieser Gattungen in Südamerika evolvierte, mit einer nachfolgenden Ausbreitung nach Zentralamerika hinein, nachdem die Panamabrücke etabliert war.

Diese Arbeit beinhaltet einen Schlüssel zu den Gattungen und Arten, 125 Strichzeichnungen, 23 rasterelektronen-mikroskopische Abbildungen, 29 farbige Habitusfotos, 4 Verbreitungskarten, 1 phylogenetischen Baum und eine kurze Diskussion zu Zoogeographie und Phylogenie.

Resumen

El nombre Platynopterinae es resucitado, contiene siete géneros. Los géneros de Cleridae *Platynoptera* y *Tarandocerus* son reescritos y los géneros nuevos *Ambonoides*, *Artoadenus*, *Aspitonis*, e *Isoforma* son descritos. *Pilosirus* es discutido brevemente. Veintiuna especies nuevas son descritas. *Ambonoides* incluye *A. retinoides* OPITZ nov.sp. y *A. caraguata* OPITZ nov.sp.; *Artoadenus* incluye *A. dius* OPITZ nov.sp., *A. regina* OPITZ nov.sp., y *A. similis* OPITZ nov.sp.; *Aspitonis* incluye *A. alarutinis* OPITZ nov.sp., *A. chiapas* OPITZ nov.sp., *A. graminis* OPITZ nov.sp., y *A. undulicornis* OPITZ nov.sp.; *Isoforma* incluye *I. biguttula* OPITZ nov.sp., *I. fritilla* OPITZ nov.sp., *I. goryi* (LAPORTE), *I. planata* OPITZ nov.sp., *I. plauta* OPITZ nov.sp. y *I. subgilva* OPITZ nov.sp.; *Pilosirus* incluye *P. amazonicus* OPITZ nov.sp., *P. brunoii* OPITZ, *P. fasciatus* OPITZ nov.sp., y *P. versus* OPITZ nov.sp.; *Platynoptera* incluye *P. ampliata* (KLUG), *P. carti* OPITZ nov.sp., *P. flavohumeralis* OPITZ nov.sp., *P. humeralis* PIC, *P. lyciformis* Chevrolat, y *P. ochreatea* OPITZ nov.sp.; y *Tarandocerus* incluye *T. auratus* OPITZ nov.sp., *T. lycoides* SPINOLA; *T. mexicanus* (THOMSON), y *T. testaceiceps* PIC. Doce sinonimias nuevas estan designadas: *Tarandocerus lycoides* (= *Platynoptera arcuatefasciata* PIC, *P. basifasciata* PIC, *P. boliviana* PIC, *P. breveapicalis* PIC, *P. dilateapicalis* PIC, *P. externenotata* PIC, *P. mathani* PIC, *P. pectoralis* SCHENKLING, *P. peruviana* PIC, *P. simplex* SCHENKLING, y *P. tucumanensis* SCHENKLING). Se seleccionan Lectotipos para *Platynoptera lyciformis* Chevrolat y para *Tarandocerus lycoides* (SPINOLA).

La presencia de una tricobotria incipiente sobre el disco pronotal define la monofilia del grupo de géneros de Platynopterinae. La forma general de la mayoría de las especies de este grupo se asemeja a los Lycidae, lo que creemos representa un mimetismo de tipo Batesiano. Veinte caracteres fueron analizados con WINCLADA, en combinación con NONA. Un árbol filogenéticos completamente resueltos fueron generados. Se define que el ancestro del grupo estudiado evoluciono en Suramérica con expansiones subsecuentes en Centroamérica, después del cierre del portal de Panamá.

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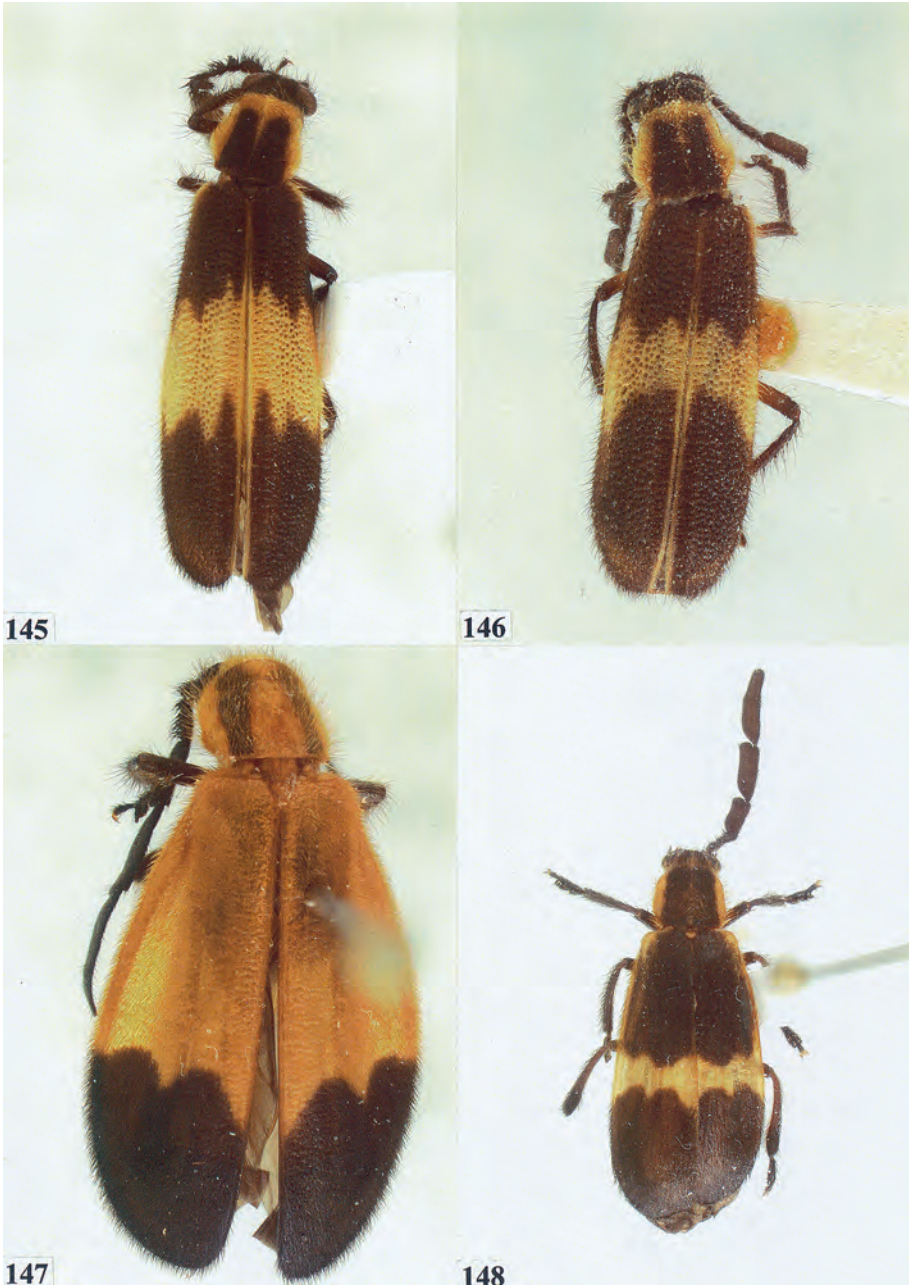
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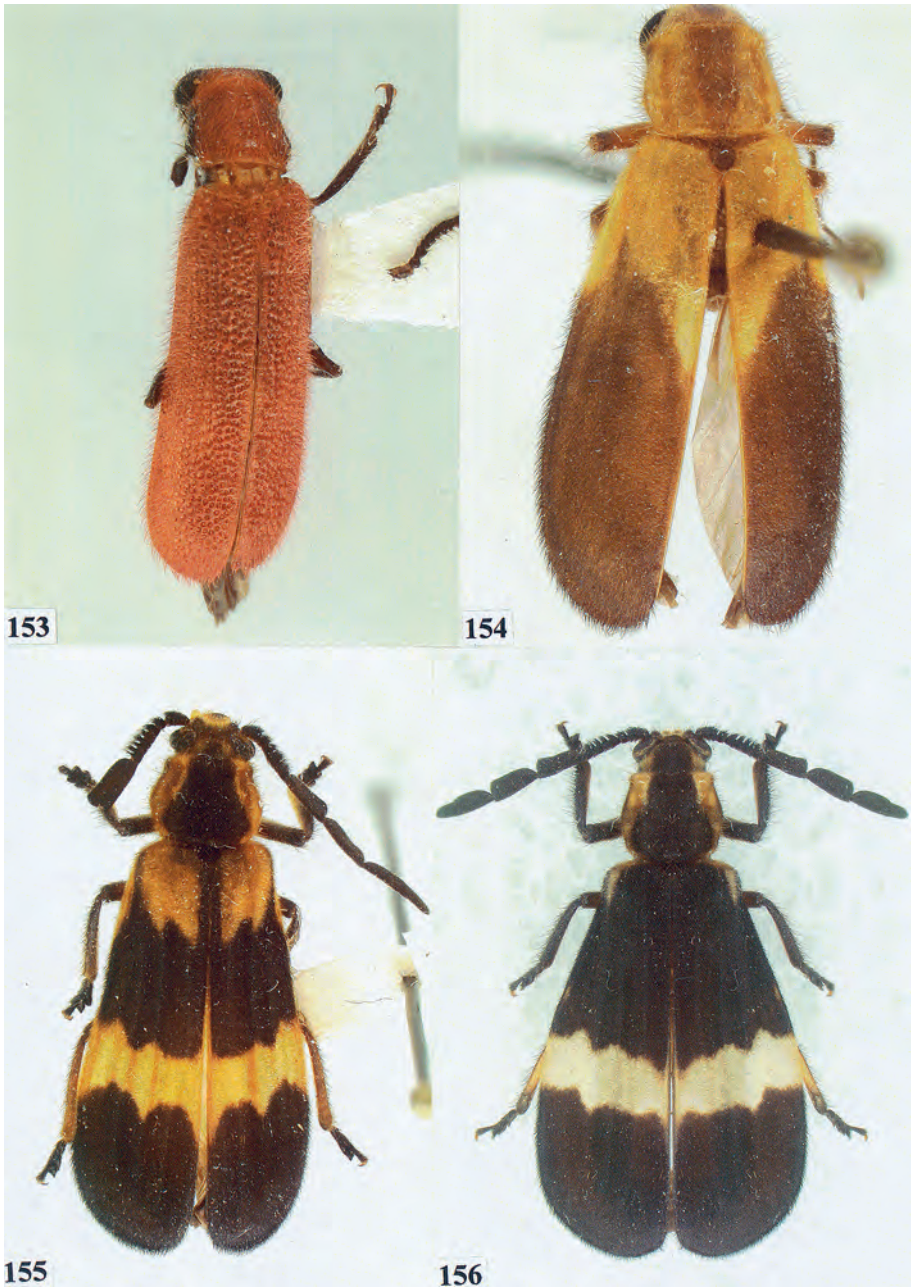
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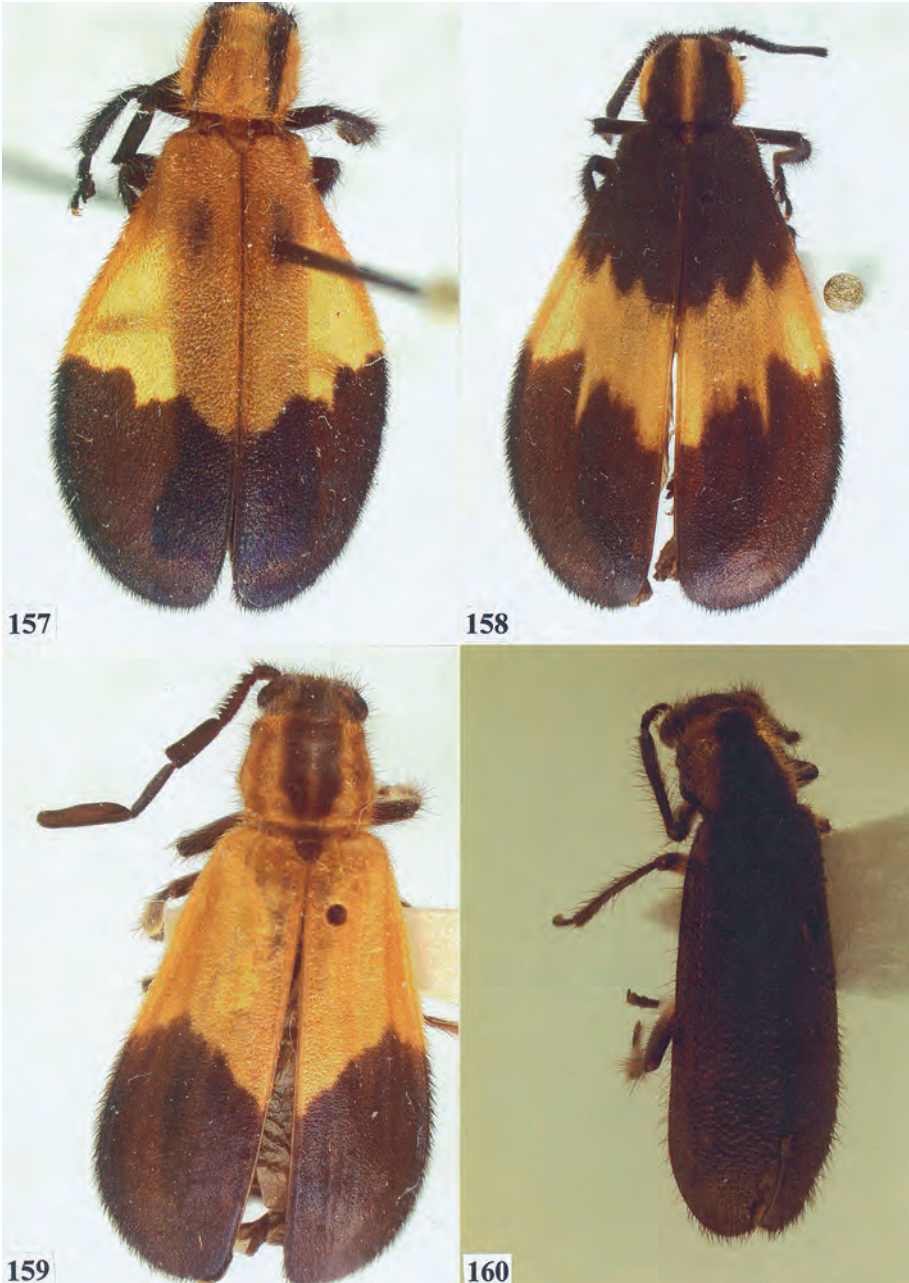
Figs 145-148: Habitus illustrations of (145) *Ambonoides retinoides*, holotype; (146) *A. caraguata*, holotype; (147) *Artoadenus dius*, holotype; (148) *A. regina*, holotype.



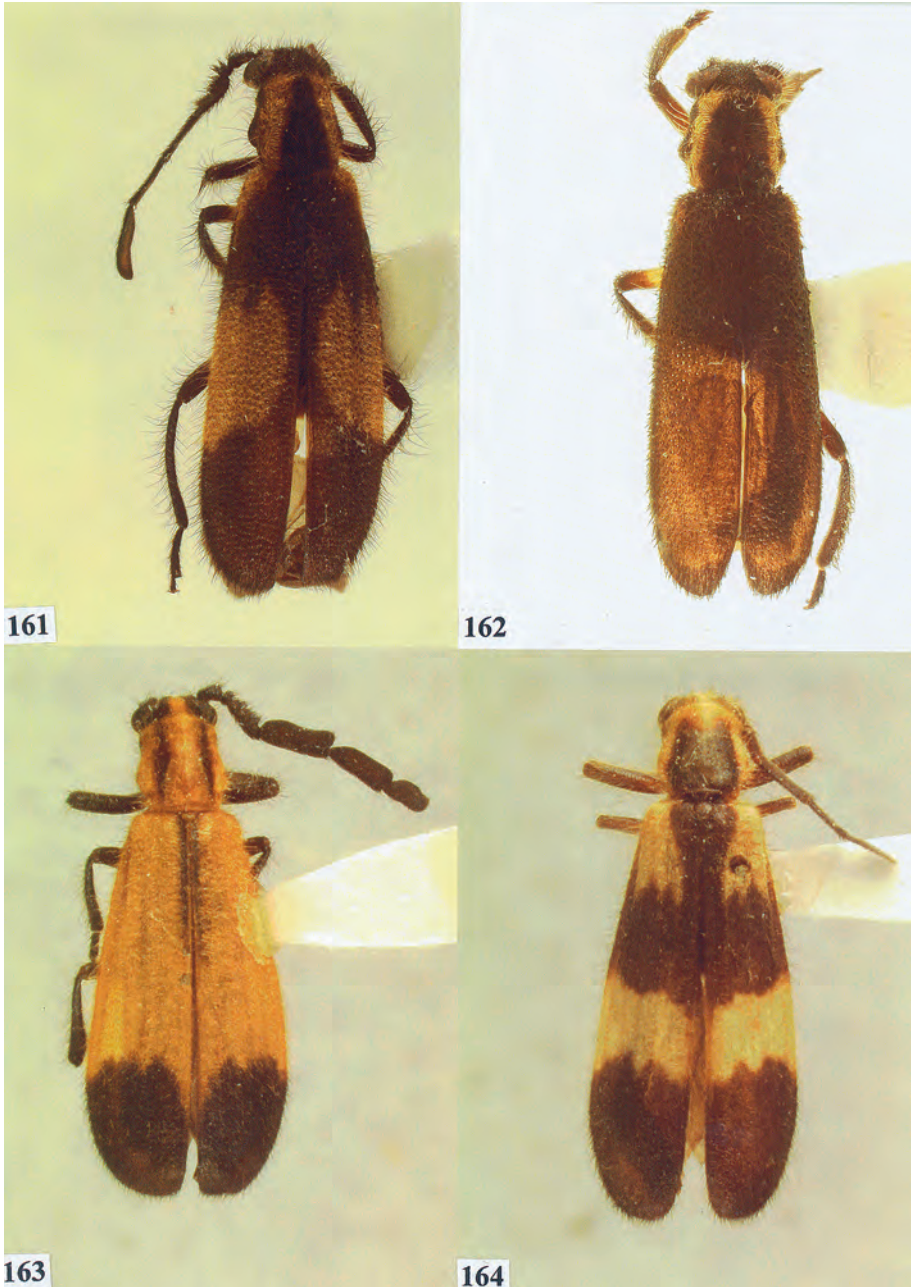
Figs 149-152: Habitus illustrations of (149) *Artoadenus similus*, holotype; (150) *Aspitonis alarutinis*, holotype; (151) *A. chiapas*, holotype; (152) *A. graminis*, holotype.



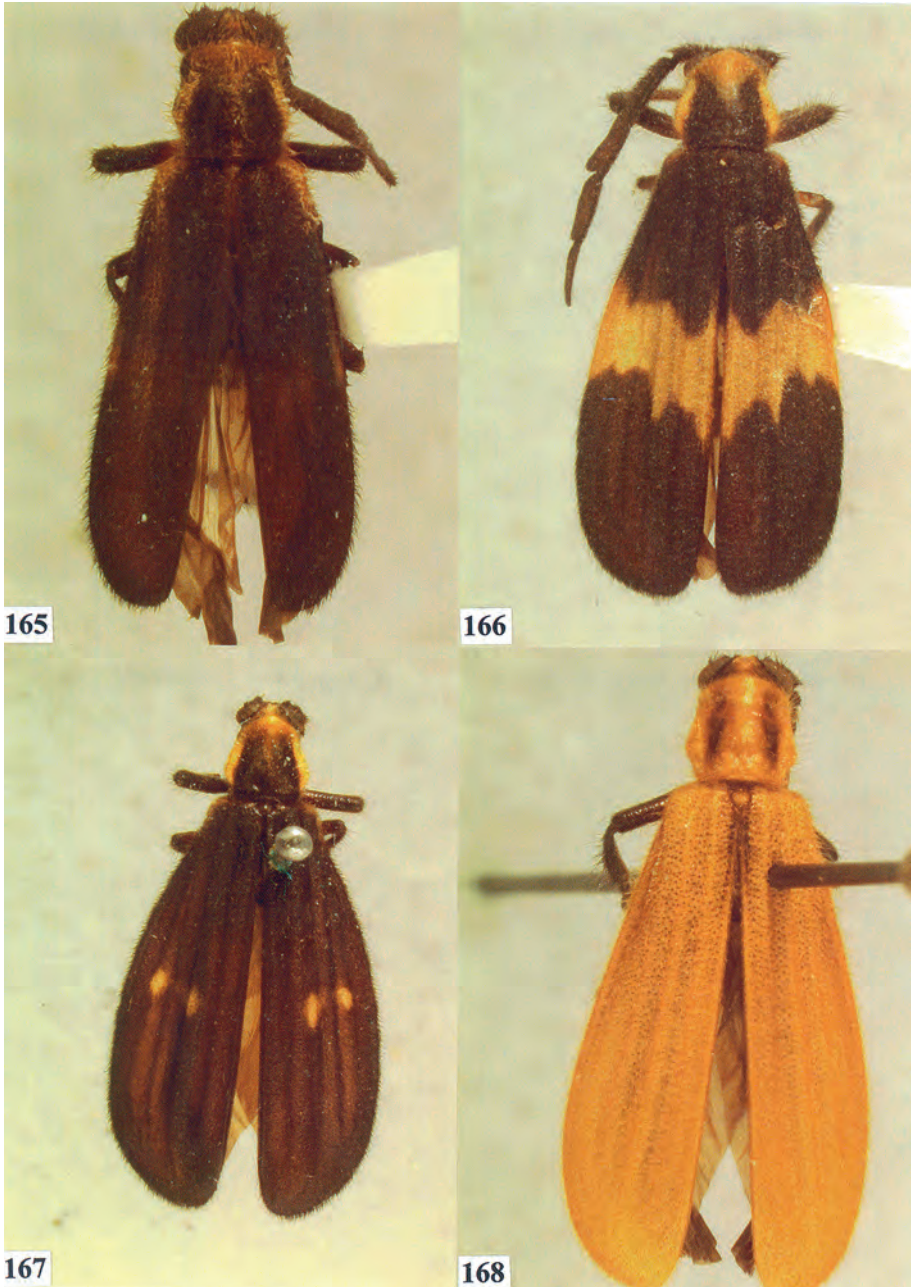
Figs 153-156: Habitus illustrations of (153) *Aspionis undulicornis*, holotype; (154) *Isoforma biguttula*, holotype; (155) *I. fritilla*, holotype; (156) *I. goryi*, non-type.



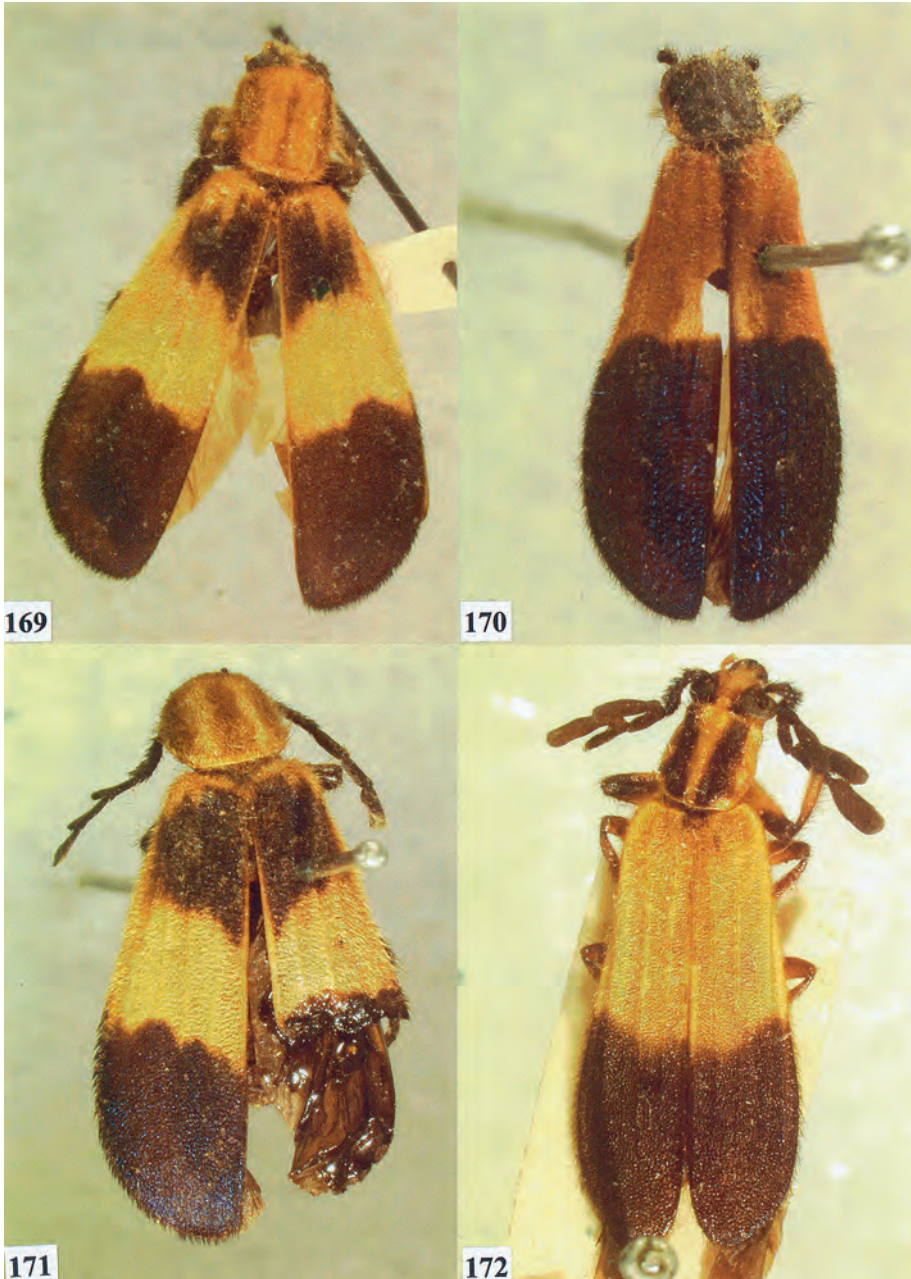
Figs 157-160: Habitus illustrations of (157) *Isoforma planata*, holotype; (158) *I. plauta*, holotype; (159) *I. subgilva*, holotype; (160) *Pilosirus amazonicus*, holotype.



Figs 161-164: Habitus illustrations of **(161)** *Pilosirus fasciatus*, holotype; **(162)** *P. versus*, holotype; **(163)** *Platynoptera carti*, holotype; **(164)** *Platynoptera flavohumeralis*, holotype.



Figs 165-168: Habitus illustrations of (165) *Platynoptera humeralis*, holotype; (166) *P. lyciformis*, lectotype; (167) *P. ampliata*, non-type; (168) *P. ochreata*, holotype.



Figs 169-172: Habitus illustrations of (169) *Tarandocerus auratus*, holotype; (170) *T. lycoides*, lectotype; (171) *T. mexicanus*, holotype; (172) *T. testaceiceps*, lectotype.

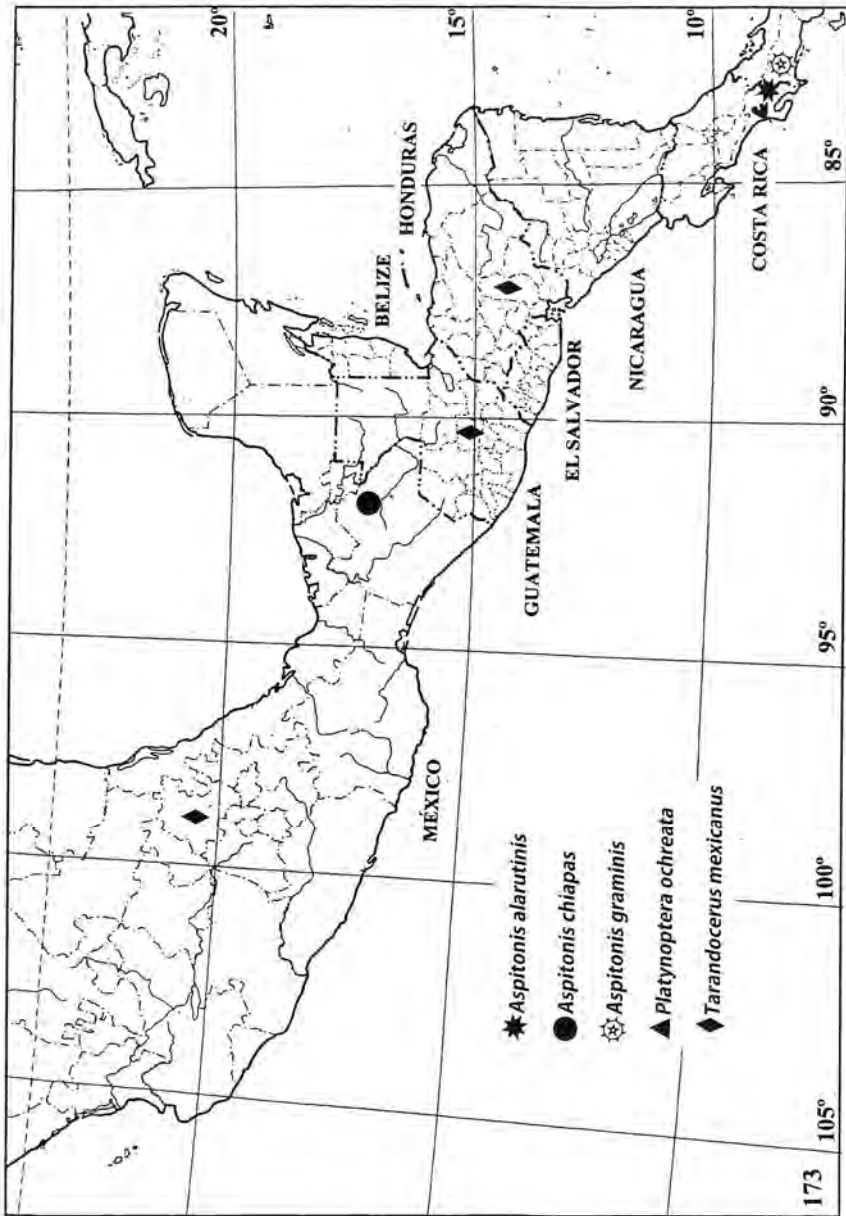


Fig. 173: Geographic distribution of species as noted.

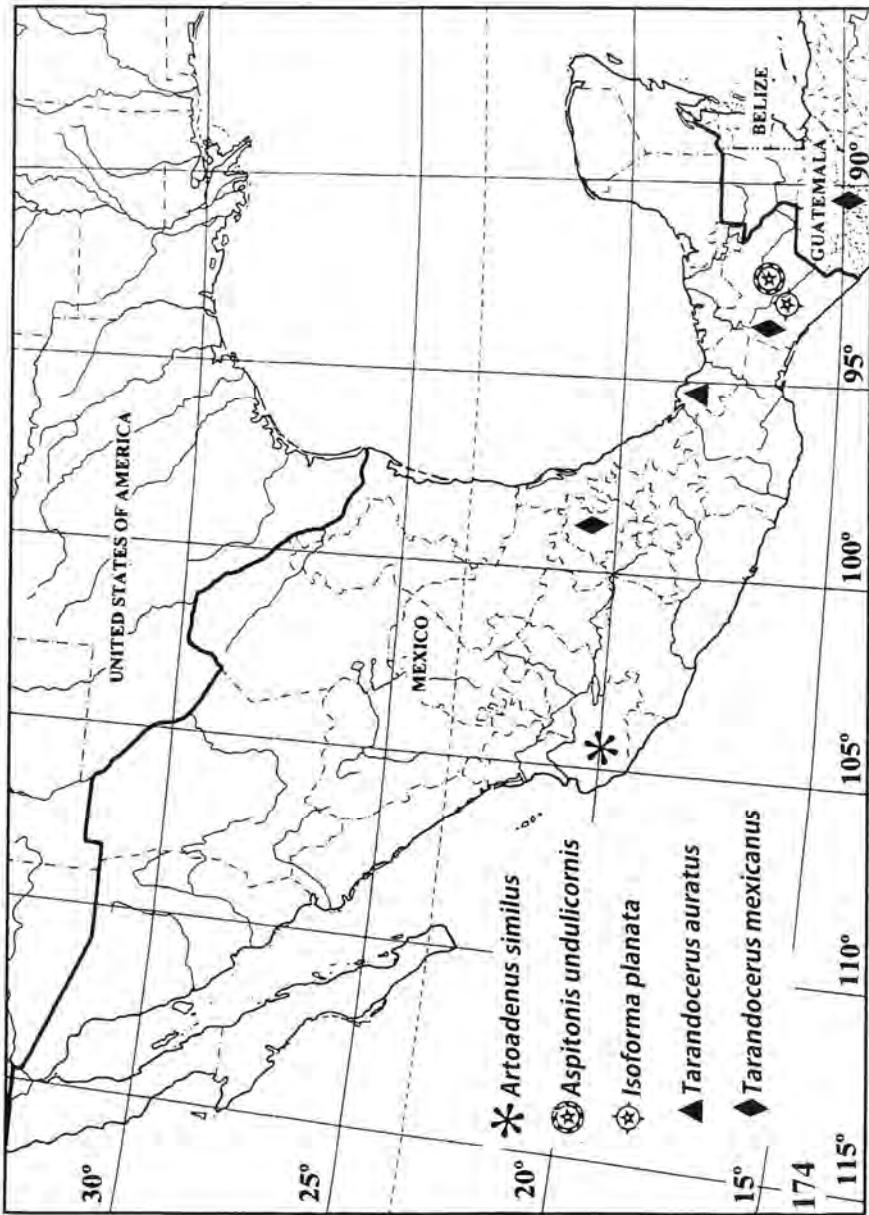


Fig. 174: Geographic distribution of species as noted.

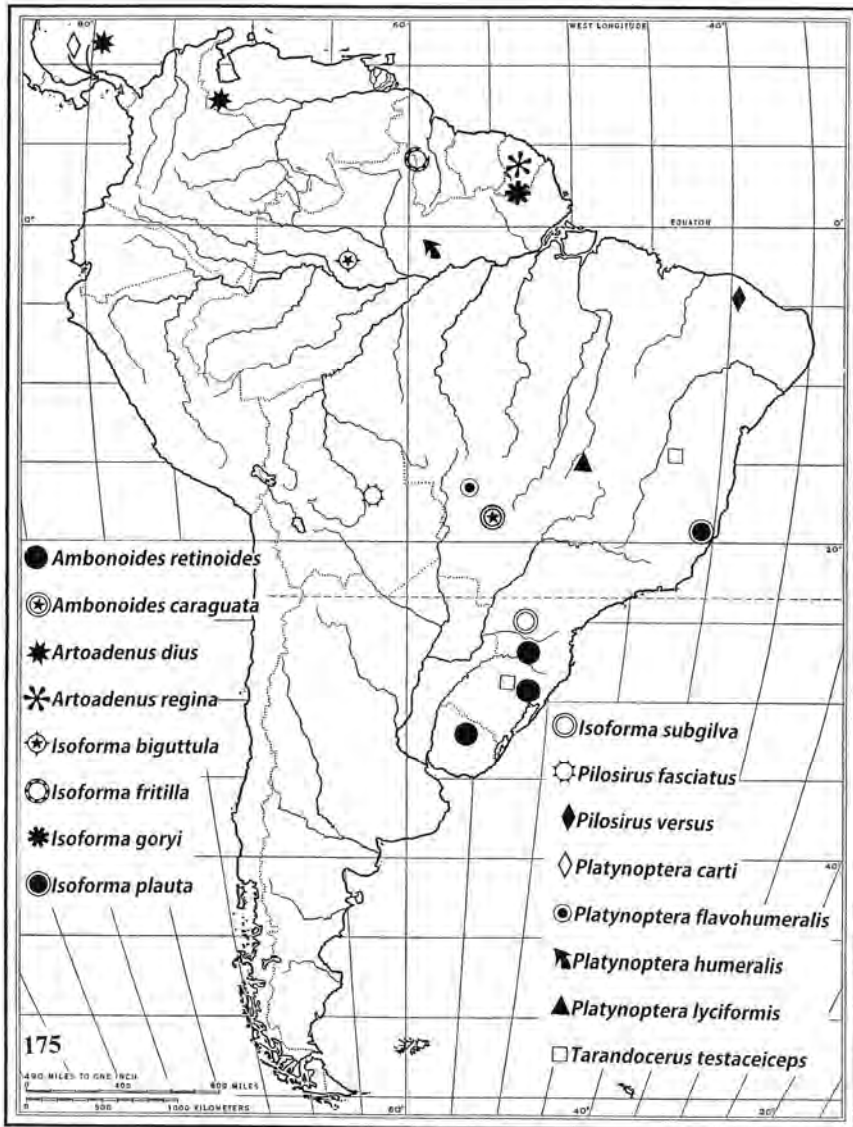


Fig. 175: Geographic distribution of species as noted.

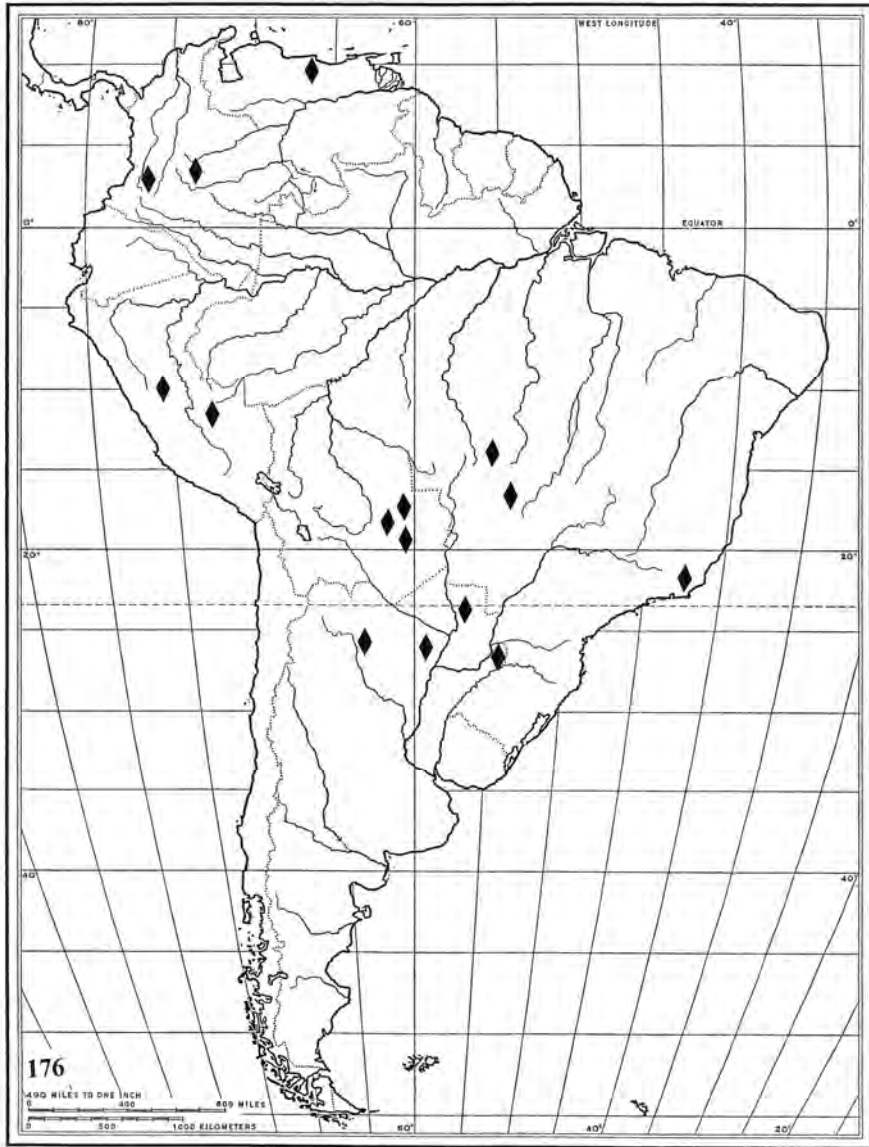


Fig. 176: Geographic distribution of *Tarandocerus lycoides*.

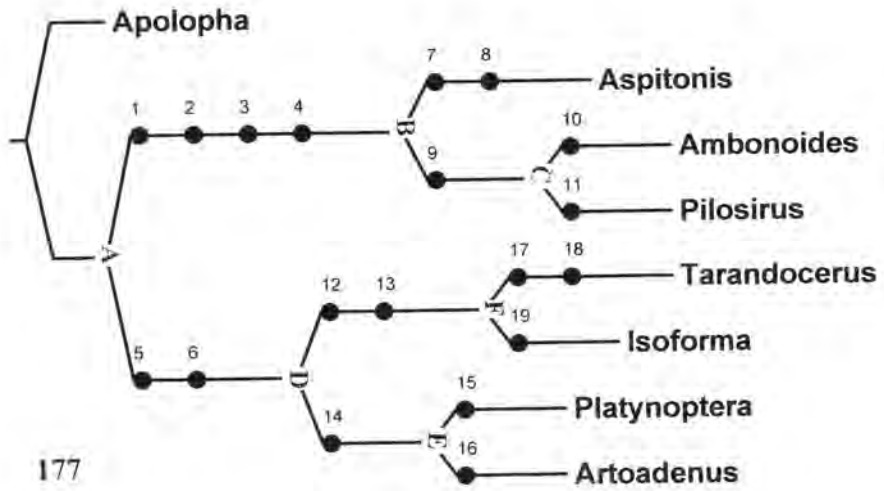


Fig. 177: Proposed phylogeny of genera of Platynopterinae.