

Systematic revision of the genera *Homalolinus* and *Ehomalolinus* (Coleoptera, Staphylinidae, Xantholinini)

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The genera *Homalolinus* Sharp, 1885 and *Ehomalolinus* Bierig, 1934 are revised, and a cladistic analysis, a key to the species, generic redescription, description of new species, and distributional records are included. According to the cladistic analysis, based on 57 characters from the external morphology and male genitalia, *Ehomalolinus* is paraphyletic in relation to *Homalolinus*; the former is thus proposed as a synonym of the latter. The monophyly of *Homalolinus* is based on 23 synapomorphies. Twenty species are described as new.

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Introduction

Homalolinus and *Ehomalolinus* (Fig. 1A,B) are distributed mainly in Central America. *Homalolinus* was erected by Sharp (1885), who commented on its similarity to *Heterolinus*, although very few distinguishing characters were indicated. *Heterolinus* was recently reviewed by Márquez (2001), who provided characters for its identification. *Ehomalolinus* was erected by Bierig (1934), who provided several characters to separate it from *Homalolinus*. However, because of their strong similarity and variation it is difficult to assign some species and specimens to one or the other genus. It is probable that these genera are sister groups and it is important to verify whether they are monophyletic or not.

Nine species of *Homalolinus* are currently known — *H. affinis* Sharp, 1885; *H. amazonicus* (Sharp, 1876); *H. apicalis* Sharp, 1885; *H. atronitens* Casey, 1906; *H. canaliculatus* (Erichson, 1839); *H. dilutus* Sharp, 1885; *H. flavipennis* (Erichson, 1839); *H. ruficollis* Bernhauer, 1929; *H. tripunctatus* Bierig, 1934 — as are four species of *Ehomalolinus*: *E. divisus* (Erichson, 1839); *E. mordax* Bierig, 1934; *E. punctipennis* Bierig, 1934; *E. sanguineus* (Sharp, 1885) (Herman 2001; Blackwelder 1944).

In this paper I describe 20 new species of *Homalolinus* and *Ehomalolinus* and establish the phylogeny within these genera. An identification key is provided.

Materials and methods

Specimens were obtained from the following institutions:

AMNH American Museum of Natural History, New York, USA (L. Herman Jr.)
BMNH Natural History Museum, London, UK (M. Brendell)

CAUVG Colección de Artrópodos, Universidad del Valle de Guatemala, Guatemala (E. Cano)
CISC California Insect Survey Collection, University of California, California, USA (C. Barr)
CNIN Colección Nacional de Insectos, Instituto de Biología, UNAM, México, D. F. México (S. Santiago)
CNC Canadian National Collection, Ottawa, Canada (A. Davies)
CZUG Centro de Estudios en Zoología, Universidad de Guadalajara, Zapopan, Jalisco, México (J. L. Navarrete-Heredia)
ECOSUR Colegio de la Frontera Sur, San Cristóbal de las Casas, Chiapas, México (A. Morón-Ríos)
FMNH Field Museum of Natural History, Chicago, USA (A. F. Newton Jr.)
IEXA Instituto de Ecología, A.C., Xalapa, Veracruz, México (L. Delgado)
IMECBIO Instituto Manantlán de Ecología y Conservación de la Biodiversidad, Universidad de Guadalajara, Autlán, Jalisco, México (E. García)
INBIO Instituto Nacional de Biodiversidad, Heredia, Costa Rica (A. Solís)
IRSNB Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium (D. Drugmand)
MACN Museo Argentino de Ciencias Naturales ‘Bernardino Rivadavia’, Buenos Aires, Argentina (A. Bachmann)
MEN Museo Entomológico Nicaragüense, León, Nicaragua (J. M. Maes)

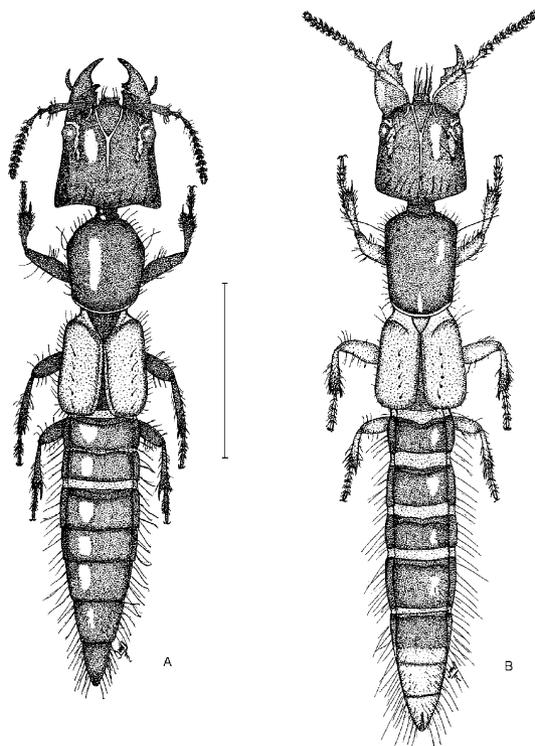


Fig. 1 A, B. Dorsal view: —A. *Homalolinus flavipennis*. —B. *Homalolinus divisis* (before *Ebomalolinus*). Scale = 5 mm.

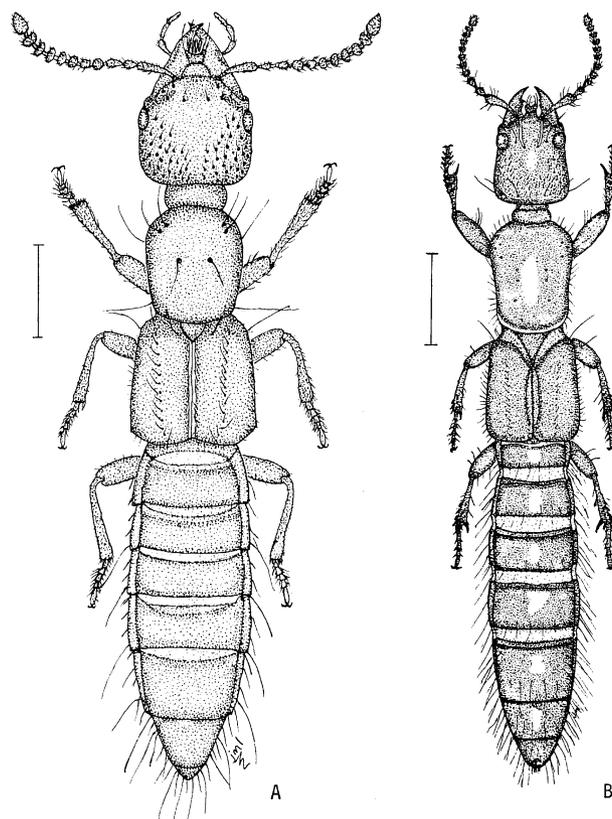


Fig. 2 A, B. Dorsal view: —A. *Atrecus macrocephalus* (Othiini; redrawing of Smetana 1982). —B. *Neohypnus* sp. (Xantholinini). Scale = 1 mm.

- MZFC Museo de Zoología ‘Alfonso L. Herrera’, Facultad de Ciencias, UNAM, México, D. F., México (J. Márquez)
- NMNH National Museum of Natural History, Washington DC, USA (D. G. Furth)
- QCAZ Museo de Zoología, Universidad Católica del Ecuador (G. Onore)
- SEMC Snow Entomological Museum Collection, Kansas, USA (R. Brooks)
- ZSMC Zoologische Staatssammlung, München, Germany (M. Baehr).

Live specimens were collected during 1999 and 2000 in México, Guatemala, Nicaragua, and Costa Rica. Drawings and measurements were made with an ocular micrometer attached to a stereoscopic microscope. Body length was measured along the dorsal midline, from the anterior margin of the head to the apex of the last abdominal segment on 10 specimens (or as many as were available). Sex was determined when possible.

Phylogenetic analysis was carried out using Nona version 2.0 (Goloboff 1993) and WinClada version 0.9.99 (Nixon 2000) to edit the cladograms. The search strategy used was heuristic search, multiple TBR + TBR, maximum trees to

keep (hold) = 1000 (number close to maximum capacity of the program and the topology of the cladograms resulting is stable), number of replications (mult = N) = 500 and starting trees per rep (hold/) = 10. Multistate characters 3, 9, 15, 16, 17, 26, 29, 34, and 39 were treated, *a posteriori*, as additive. Characters not observed or polymorphic were codified as ‘?’.

Character and states analysed are presented in Appendix 1. Bootstrap analysis was applied to the cladograms with 500 replications, number of search reps (mult * N) = 10, and starting trees per rep (hold/) = 10. *Atrecus macrocephalus* (Nordmann, Fig. 2A) belong to Othiini, which is considered by Smetana (1982) to be close to Xantholinini; *Neohypnus* sp. (Xantholinini, Fig. 2B) may be a basal genus (Márquez 2001). Both taxa were chosen as outgroups to root the cladograms.

Results and discussion

Cladistic analysis

Analysis of the data matrix (Table 1) led to 31 equally parsimonious cladograms, with 218 steps, a consistency index of

Table 1 Data matrix.

Species	Characters					
	1	111111112	222222223	333333334	444444445	5555555
	1234567890	1234567890	1234567890	1234567890	1234567890	1234567
<i>A. macrocephalus</i>	000000000	00000??700	0000000???	0000000000	0000000000	0000000
<i>Neohypnus</i> sp.	001000001	02210??700	0010000???	0001000000	0001110000	0100130
<i>H. aequatorialis</i> sp. nov.	1121112211	1021223334	1121121321	0213101121	1201111111	1001120
<i>H. affinis</i>	1121111211	1021223134	1121121112	0113101111	1111111111	1011121
<i>H. amazonicus</i>	1121112211	1021223334	1121121322	0213101121	0201110211	1001120
<i>H. apicalis</i>	0021111211	1111112133	2010101111	0202011011	0001110411	1011101
<i>H. apiciventris</i> sp. nov.	0021111211	1121112133	2010101111	1112011001	0001110411	1011111
<i>H. asiainae</i> sp. nov.	0021111211	0121112233	2010101321	0212011011	0001110011	1001120
<i>H. atronitens</i>	1121112211	1021223334	1121121212	0113101111	0201110211	1001000
<i>H. brevipennis</i> sp. nov.	0021112221	1111111133	2010101311	0212001001	1001111011	1011121
<i>H. canaliculatus</i>	1121112211	1021223334	1121121322	0213101121	0201110211	1001120
<i>H. confusus</i> sp. nov.	0021111211	1111111133	2010101311	1112001001	00011102??	???????
<i>H. difficilis</i> sp. nov.	0021111211	1121111133	2010101311	1212011011	?0?1112411	1011121
<i>H. dilutus</i>	1121111120	1021222111	1121111321	1213111101	0101110011	1001100
<i>H. divisus</i>	0021111211	0121112233	2010101311	1201001011	1001111?11	10?1???
<i>H. flavipennis</i>	1121112221	1021223234	1121111211	0213101111	1011111011	1011111
<i>H. gracilis</i> sp. nov.	0021111211	0121112133	2010101311	1202011011	1011110111	1011101
<i>H. grandis</i> sp. nov.	1121111121	1021221111	1121111221	0213111101	0101110011	1001120
<i>H. guerrorensis</i> sp. nov.	0021111211	0111113233	2010101211	1212011011	0001111111	1001020
<i>H. mexicanus</i> sp. nov.	1121112211	1021223334	1121121212	0112101111	0201110111	1001120
<i>H. minensis</i> sp. nov.	0021111211	1121111133	2010101311	1112001001	1011111111	1001122
<i>H. mordax</i>	0021112211	0121112133	2010101311	1202011001	0001111111	1011111
<i>H. neovulcanicus</i> sp. nov.	1121111211	1021223234	1121121222	0113111121	0001111211	1001100
<i>H. obsoletus</i> sp. nov.	0021111211	0121111122	2010101311	0201011011	0001111311	1011001
<i>H. planus</i> sp. nov.	1121112210	1021223334	1121121321	0213111121	0021111111	1001120
<i>H. punctipennis</i>	0021111211	1111112133	2010101111	1112011011	0001111211	1011111
<i>H. ruficollis</i>	1121112221	1021223334	1121121221	0213111121	1111110211	1101130
<i>H. rufopygus</i> sp. nov.	0021111211	0121112233	2010101321	1112001011	0001110211	1101120
<i>H. rufus</i> sp. nov.	1121111211	1021222133	1121111121	1212111111	0101110011	1001010
<i>H. sanguineus</i>	0021111211	0121112233	2010101311	1102011011	0001111111	1101120
<i>H. scutellaris</i> sp. nov.	0021111211	1121113222	2010101221	0211001011	1011111211	1011022
<i>H. setosus</i> sp. nov.	0021111221	1121212133	2020101111	1112001011	1011110411	1011121
<i>H. sharpi</i> sp. nov.	1121112221	1021223234	1121121211	0213101111	0101110211	1101130
<i>H. tlanchinolensis</i> sp. nov.	0021111221	1121111133	2010101211	1201001011	10111112??	???????
<i>H. tripunctatus</i>	1121112221	1021223334	1121121111	0213101121	11111112??	???????

0.42 and a retention index of 0.75. The strict consensus cladogram is represented in Fig. 6. In all the cladograms obtained, *Ebomalolinus* is paraphyletic and *Homalolinus* is monophyletic. Thus, I propose that they are synonyms.

Ebomalolinus was erected by Bierig (1934) as derived from *Homalolinus* and supported by some differences, but some of these differences are plesiomorphies; these include an oval-depressed body shape and obtuse angles formed by posterior corners of head (Fig. 1B). Bierig (1934) commented that *Ebomalolinus* has no ventral channels on the head, but that is incorrect; they are present, in varying degrees of development (Fig. 3F). Other characters mentioned by Bierig (1934) are not consistent within *Homalolinus* or *Ebomalolinus*.

The analysis shows that *Neohypnus* sp. is basal in relation to *Homalolinus* (Fig. 4, node 1); both genera share several characters because they are in the Xantholinini, which is probably a monophyletic group (Smetana 1982).

The monophyly of *Homalolinus* (with *Ebomalolinus* as its synonym) is based on 23 synapomorphies (Fig. 4, node 2). Relationships at the specific level are supported partially by synapomorphies. Typical species of *Homalolinus* are monophyletic (as mentioned above) and are supported by eight synapomorphies (Fig. 4, node 10), with *Homalolinus dilutus* plus *H. grandis* sp. nov. as sister species based on three synapomorphies (node 11).

The bootstrap analysis supports the following clades (Fig. 5): *Neohypnus* sp. plus *Homalolinus*; *Homalolinus*; typical

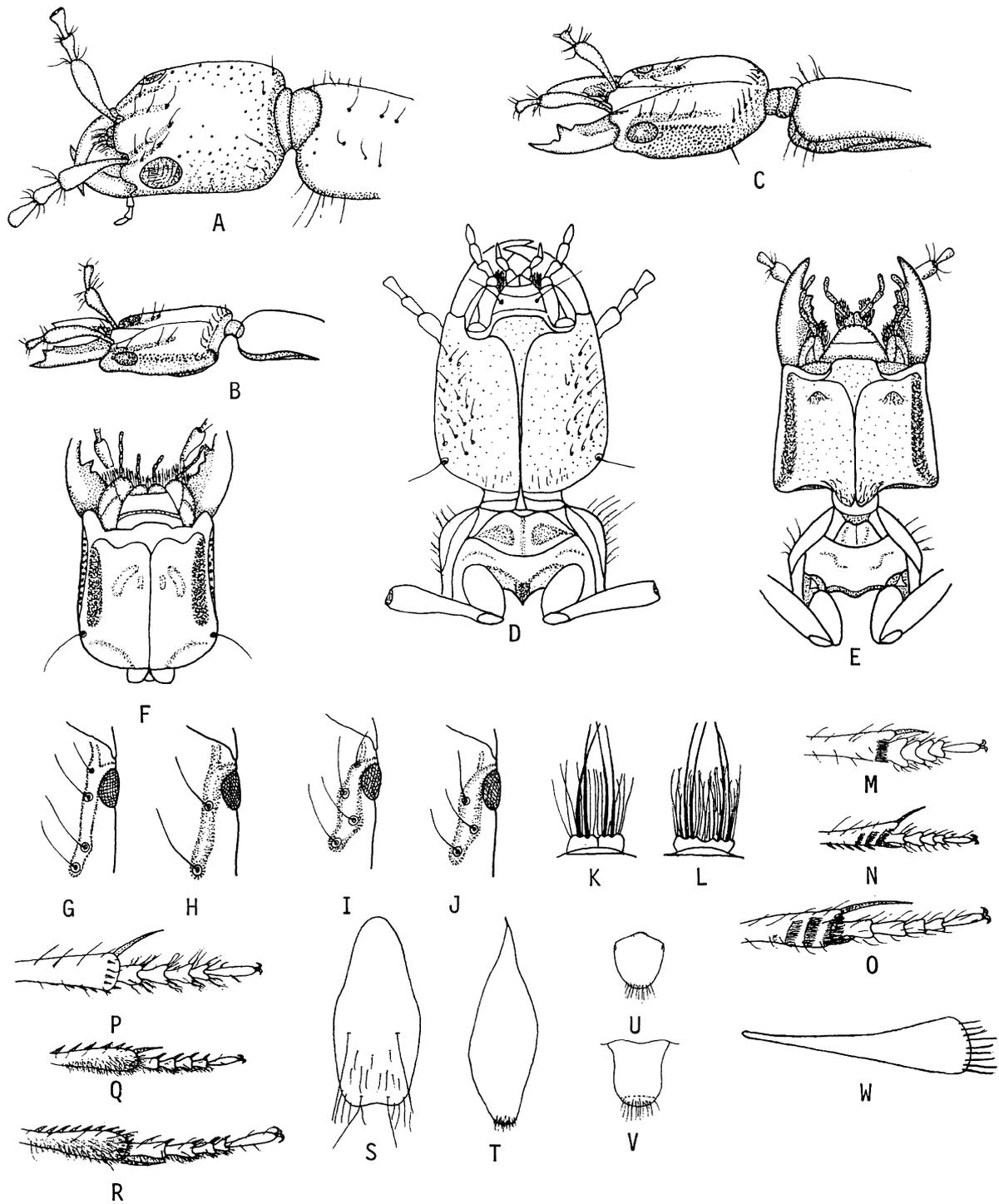


Fig. 3 A–W. Schematic lateral view: —A. *Neohypnus* sp. —B. *Homalolinus* spp. (typical). —C. *Homalolinus* spp. (before *Ebomalolinus*). Schematic ventral view of: —D. *Neohypnus* sp. —E. *Homalolinus* spp. (typical). —F. *Homalolinus* spp. (before *Ebomalolinus*). Scheme of right ocular channel with number and distribution of setae inside them: —G. *Homalolinus* spp. (typical). —H. *H. dilutus*. —I. *Homalolinus* spp. (before *Ebomalolinus*). —J. *H. obsoletus*. Labrum of: —K. *Homalolinus* spp. (before *Ebomalolinus*). —L. *Homalolinus* spp. (typical). Scheme of protibiae and tarsal segments of: —M. *A. macrocephalus*. —N. *Neohypnus* sp. —O. *Homalolinus* spp. Scheme of tibiae and tarsal segment of middle and third legs of: —P. *A. macrocephalus*. —Q. *Neohypnus* sp. —R. *Homalolinus* spp. Sternite of genital segment of: —S. *A. macrocephalus*. —T. *Homalolinus* spp. Tergite of genital segment of: —U. *A. macrocephalus*. —V. *Neohypnus* sp. —W. *Homalolinus* spp.

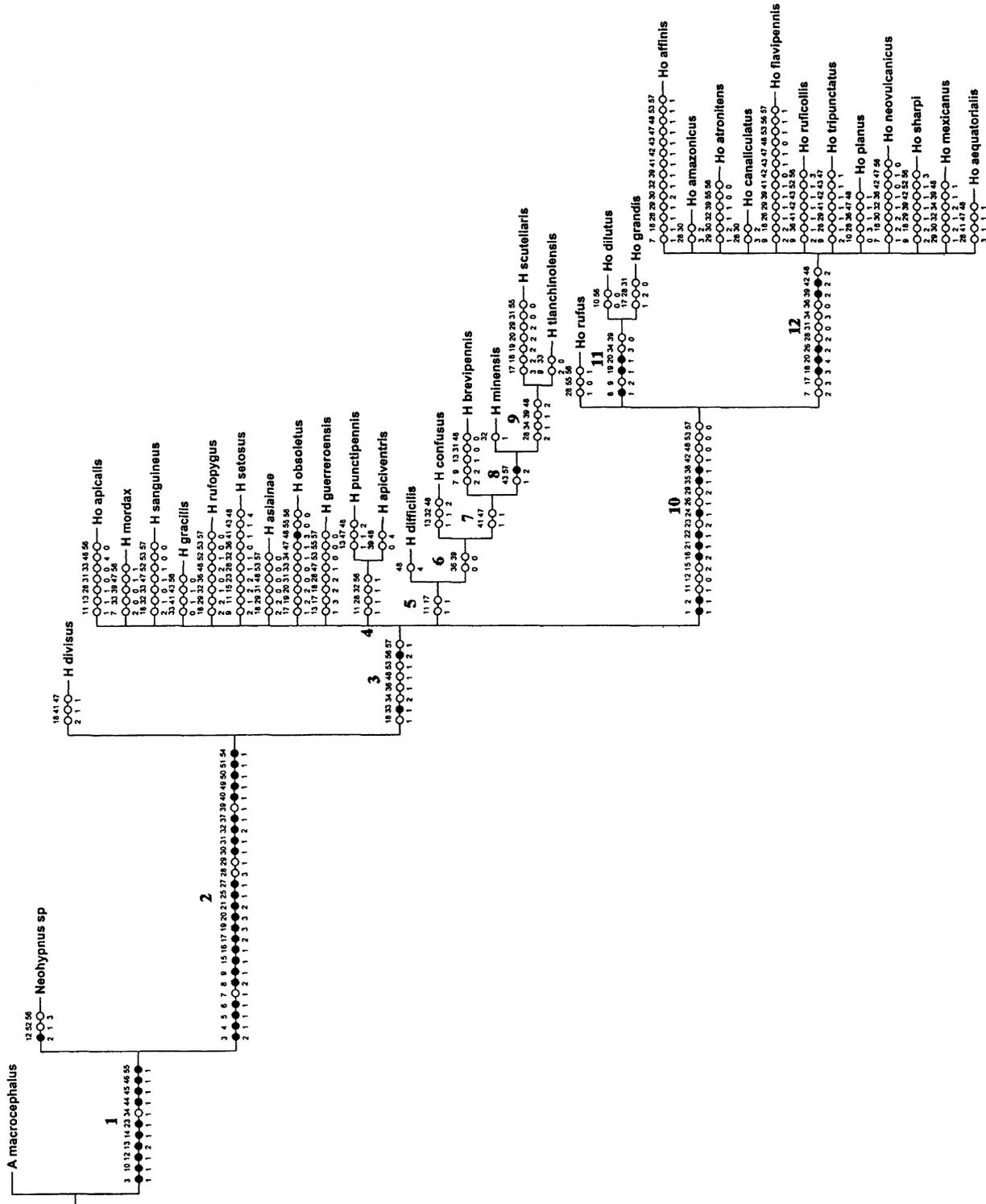


Fig. 4 Strict consensus cladogram of 31 equally parsimonious cladograms of *Homalolinus* (H) and *Ebomalolinus* (E) species (L = 284, CI = 32, RI = 62).

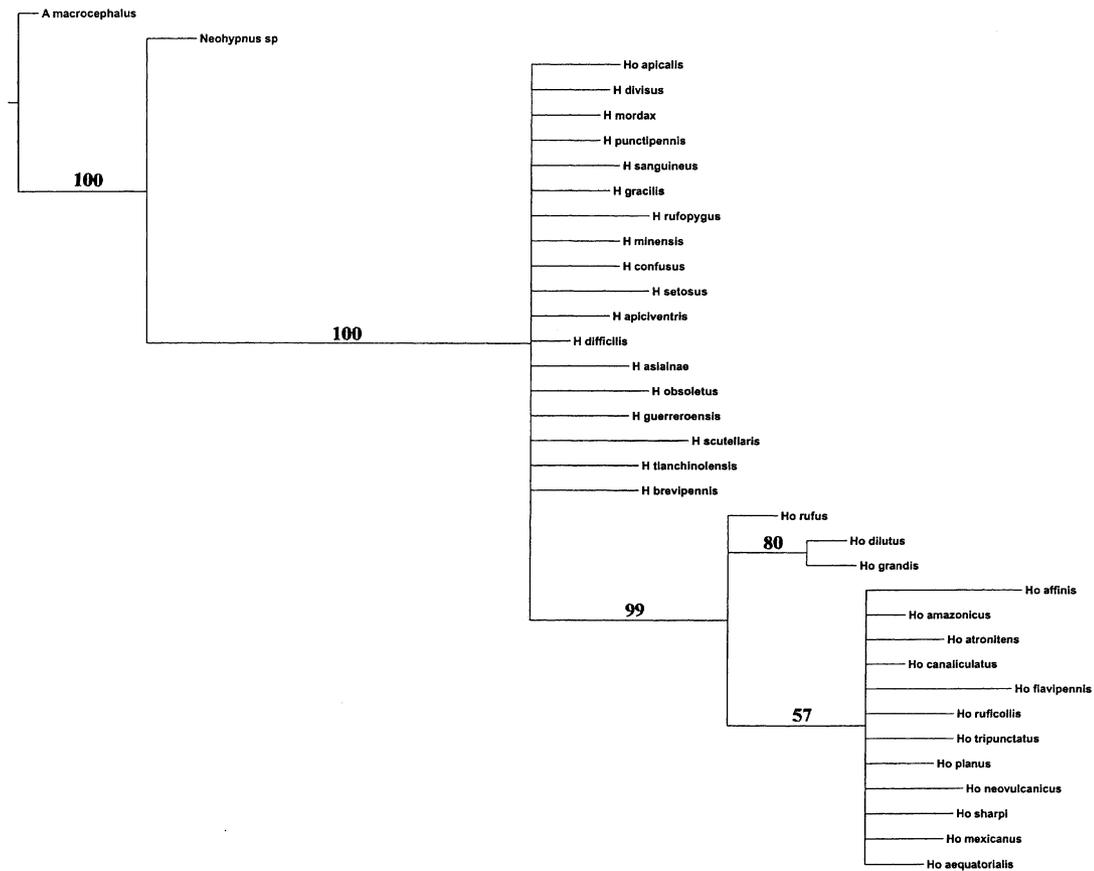


Fig. 5 Cladogram resulting from bootstrap analysis applied to phylogenetic hypothesis (numbers are percentages).

Homalolinus species; *H. dilutus* plus *H. grandis* sp. nov. and the remaining species together. The result is presented in Fig. 6, which includes the same bootstrap values of Fig. 5, plus values specific to other nodes.

Homalolinus divisus is a variable species (or perhaps several species of a complex), so some of its characteres had to be coded as non informative (?). *Homalolinus amazonicus* is proposed as a synonym of *H. canaliculatus* because they do not show any autapomorphy and they appear as sister taxa in all the cladograms.

Systematic treatment

Family STAPHYLINIDAE

Genus *Homalolinus* Sharp (Fig. 1A,B)

Homalolinus Sharp, 1885: 472. Type species: *Homalolinus canaliculatus* (Erichson, 1839) (subsequent designation by Casey 1906: 374).

Ebomalolinus Bierig, 1934: 16. Type species: *Ebomalolinus punctipennis* Bierig, 1934 (by original designation), syn. nov.

Diagnosis. Head with a Y-shaped groove along entire length; cephalic punctures reduced or absent; lateral borders of head forming a flat area with deep and dense punctures; with ocular and ventral channels; pronotum without central punctures.

Redescription. BODY: oval-depressed or depressed. HEAD: width of posterior margin 1.1–1.29 times that of anterior margin (except for *H. dilutus* and *H. planus* that are less than 1.1 times). Dorsal mesh microsculpture slightly visible to inconspicuous. Dorsal punctures fine and sparse, in some species combined with wide punctures distributed mainly near to Y-shaped groove and ocular channels. Labrum slightly or not convex at apex; each half with two large setae and seven to more than 10 short setae. Length of mandibles half that of head, each with one large tooth. Maxillary and labial palps similar in length and width to each other; maxillary segments 2–4 shorter than first antennomere (0.75–0.5 times). Antennae with first three segments longest and remainder almost subquadrate; first antennomere 1.7–2 times as long as next two combined; third 1.5–2 times as long

as second one. Frontal channels short. Antennal channels extend backward forming a Y-shaped groove along entire length of head. One ocular channel in each half of the head, shallow to very deep and narrow to wide; with two, three or four setae (rarely five) variably distributed; extends ventrally from eye only, or bifurcate ventrally and forward from eye; half as long as head length. Lateral border forming a flat and vertical area. Punctuation deep and wide and homogeneously distributed, or dense and deep on upper half (at eye level) and fine and sparse on lower half. Posterior border with transverse row of 4–8 long plus two short central setae. Posterior corners form an obtuse, right, acute or very acute angle; the width from one corner to the other 1.1–1.2 times as wide as the pronotum. Ventral face with punctures similar to dorsal face; some species with wide punctures near ventral channels. Two ventral longitudinal channels, each parallel to lateral borders, shallow to very deep, narrow to wide, with wrinkled and reflecting microsculpture or with punctures only; extend to posterior corners or not. Gular sutures fully united. With or without a pair of rounded carinae on ventral surface of the head, near to the ‘inside’ and anterior part of each channel. Gular area at neck level carinate or not, with or without different microsculpture as inside ventral channel. Ventral posterior corners with or without a long seta. NECK: 2–3.5 times narrower than head. PRONOTUM: anterior border convex at neck level. Lateral borders become slightly convex at anterior third or are parallel. Anterior margin 1.1–1.2 times wider than posterior margin. Without central punctures, with a puncture near to each anterior corner. Mesh microsculpture clearly visible to inconspicuous, shiny surface. Longitudinal midline slightly visible along entire pronotal length or near posterior border only. Upper line of pronotal hypomeron doubled at juncture with lower line, but not united. SCUTELLUM: four setae at apex and conspicuous microsculpture in the form of wavy lines. ELYTRA: as long as or slightly longer than pronotum (except for *H. brevipennis*). Elytral disc with fine and sparse, slightly to moderately conspicuous, punctuation. With long setae along entire borders and 4–10 long setae in longitudinal row

extending the length of elytron, or 1–4 central setae in row on posterior half, or without central setae (except *H. setosus*, which has setae on entire elytral disc in addition to row of setae). STERNUM: prosternum, mesosternum and metasternum with microsculpture evident as conspicuous wavy lines; prosternum not carinate; metasternum with a fine longitudinal channel on posterior area. LEGS: microsculpture as on thoracic sterna; first and middle legs similarly long, third shorter. Protibia very spiny, with three ctenidia and two spurs at apex. Tarsal segments of first legs slender, second and last segments long; first, third and fourth segments in descending order of length. Mesotibia and metatibia with apical ctenidium only and spurs as first tibiae. Last tarsal segment of middle and third legs longest; second, first, third and four segments in descending order of length. ABDOMEN: microsculpture as on thoracic sterna and legs; long and densely arranged setae at lateral and posterior borders. Sternite of male genital segment long, asymmetrical, angle of base acute; tergite slender and symmetrical. AEDEAGUS: pear-shaped or rounded (with basal bulb hypertrophy). Parameres symmetrical or asymmetrical, either left or right one longer; base placed between middle and apex of aedeagus. Parameres of variable length, but longer than median lobe. Internal sac usually conspicuous, reduced in some species.

Remarks. *Homalolinus* is closely related to *Heterolinus* Sharp, based on shared characters of: depressed body shape; very long antennae; second antennomere close to 2/3 the length of third antennomere; gular sutures fully united; posterior corners of head form an acute angle; wide head (more than 1.2 times width of pronotum); pronotum without central punctures; tergite of male genital segment long, with angle of base very acute (Márquez 2001).

Distribution. *Homalolinus* species have been recorded from Argentina, Bolivia, Brazil, Colombia, Ecuador, Peru, Panama, Costa Rica, Nicaragua, Honduras, Guatemala and México.

Key to species of *Homalolinus*

- 1 Head and pronotum depressed (Fig. 6A); ocular channels bifurcate ventrally and forward from eye (Fig. 6G,H); posterior corners form an acute or right angle (Fig. 1A); ventral face with pair of reduced to well developed carinae on anterior part (Fig. 6E, typical *Homalolinus*) 2
- 1' Head and pronotum oval-depressed (Fig. 6C); ocular channels extend ventrally from eye only (Fig. 6I,J); posterior corners form an obtuse angle (Fig. 1B); ventral face without pair of carinae on anterior part (Fig. 6F, previously *Ebomalolinus*) 15
- 2(1) Pronotum, elytra and abdomen red 3
- 2' Pronotum, elytra and abdomen not completely red 5
- 3(2) Posterior border of head with row of eight long setae (Fig. 1A); ocular channels with four long setae (Fig. 6) *H. rufus* sp. nov.

- 3' Posterior border of head with row of four long setae; ocular channels with two long setae (Fig. 6H) 4
- 4(3) Ventral posterior corners of head with a long seta (Fig. 6F); ocular channels moderately deep; ventral channels very narrow (Fig. 7C); aedeagus as in Fig. 7R..... *H. dilutus* Sharp
- 4' Ventral posterior corners of head without a long seta (Fig. 6E); ocular channels shallow; ventral channels moderately narrow (Fig. 7B); aedeagus as in Fig. 8G..... *H. grandis* sp. nov.
- 5(2) Pronotum and elytra red 6
- 5' Pronotum and elytra black, or pronotum red and elytra black, or pronotum black and elytra red. 7
- 6(5) Elytral disc without central setae; fifth visible abdominal segment with the anterior half black and posterior half red; aedeagus as in Fig. 8N..... *H. planus* sp. nov.
- 6' Elytral disc with row of four setae on central part; fifth visible abdominal segment completely red; aedeagus as in Fig. 8L..... *H. neovulcanicus* sp. nov.
- 7(5) Elytra red 8
- 7' Elytra black 11
- 8(7) Abdomen completely black (Fig. 1A); elytron with row of five setae on central part; aedeagus as in Fig. 8E *H. flavipennis* (Erichson)
- 8' Abdomen not completely black; elytron with row of less than five setae on central part; aedeagus different..... 9
- 9(8) Lateral areas of the head with deep and dense punctures in upper half and fine punctures in lower half (Fig. 6B); fifth visible abdominal segment red (male unknown)..... *H. tripunctatus* Bierig
- 9' Lateral areas of the head with deep and dense almost homogeneously distributed, punctures (Fig. 6C); fifth visible abdominal segment with black base black and red apex 10
- 10(9) Head with some punctures near Y-shaped groove and ocular channels; ocular channels wider than apex of first antennomere; ventral channels wide (Fig. 7A) and moderately deep; elytron with row of 3–4 setae on central part; aedeagus as in Fig. 7G..... *H. affinis* Sharp
- 10' Head with inconspicuous dorsal punctures; ocular channels narrower than first antennomere at its middle part; ventral channels very narrow (Fig. 7C) and deep; elytron without central setae; aedeagus as in Fig. 7F..... *H. aequatorialis* sp. nov.
- 11(7) Pronotum, scutellum, thoracic sterna and main part of legs red; aedeagus as in Fig. 8P..... *H. ruficollis* Bernhauer
- 11' Pronotum, scutellum, thoracic sterna and legs black; aedeagus different..... 12
- 12(11) Ventral channels very narrow (Fig. 7C) and deep; pronotum widest at anterior margin in comparison with posterior margin (more than 1.2 times); aedeagus as in Fig. 7M–O..... *H. canaliculatus* (Erichson)
- 12' Ventral channels moderately narrow (Fig. 7B) and deep; pronotum slightly widest at anterior margin in comparison with posterior margin (less than 1.2 times); aedeagus different 13
- 13(12) Lateral area of the head with deep and dense punctures in upper half and fine punctures in lower half (Fig. 6B); ocular channels as wide as the first antennomere at its middle part; elytron with row of three setae on central part (row rarely of one or two setae); aedeagus as in Fig. 8V *H. sharpi* sp. nov.
- 13' Lateral area of the head with dense punctures almost homogeneously distributed (Fig. 6C); ocular channels narrower than first antennomere at its middle part; elytron without central setae; aedeagus different 14
- 14(13) Fifth visible abdominal segment with black base and red apex; ventral channels with punctures inside; aedeagus as in Fig. 8I..... *H. mexicanus* sp. nov.
- 14' Fifth visible abdominal segment red; ventral channels with punctures combined with wrinkled texture; aedeagus as in Fig. 7K *H. atronitens* Casey
- 15(1) Elytra black or with anterior borders red and remainder black. 16
- 15' Elytra red 19
- 16(15) Pronotum and scutellum red..... 17
- 16' Pronotum and scutellum black..... 18
- 17(16) Elytra with anterior border red and remainder black; first four visible abdominal segments black, fifth segment with black base and red apex; aedeagus as in Fig. 8F..... *H. gracilis* sp. nov.
- 17' Elytra completely black; first four visible abdominal segments red, fifth and basal 2/3 of sixth black, apex of sixth red; aedeagus as in Fig. 7P..... *H. difficilis* sp. nov. (in part)
- 18(16) First antennomere almost twice as long as second and third combined, more dark than remainder; ocular channels moderately deep and wide; ventral channels moderately deep; aedeagus as in Fig. 8Q..... *H. rufopygus* sp. nov.
- 18' First antennomere almost 1.5 times as long as second and third combined, similar colour as remainder; ocular channels shallow and very wide; ventral channels shallow; male unknown *H. confusus* sp. nov.

19(15)	Pronotum red	20
19'	Pronotum black	28
20(19)	First four visible abdominal segments red.....	21
20'	First four visible abdominal segments black or dark brown.	24
21(20)	Abdomen completely red; ventral channels deep; elytron with row of 10 or more setae on central part; aedeagus as in Fig. 7J	<i>H. asiainae</i> sp. nov.
21'	Fifth and sixth visible abdominal segments (or the main part of last) black; ventral channels moderately deep; elytron with row of 5–7 setae on central part; aedeagus different from previous.....	22
22(21)	Ventral posterior corners of head without a long seta; head with inconspicuous ventral punctures; aedeagus as in Fig. 7H.....	<i>H. apicalis</i> Sharp
22'	Ventral posterior corners of head with a long seta; head with punctures visible near to ventral channels; aedeagus different	23
23(22)	Ocular channels shallow; ventral channels moderately wide (Fig. 7A); pronotum with anterior margin slightly wider than posterior margin (less than 1.1 times); aedeagus as in Fig. 7L.....	<i>H. apiciventrif</i> sp. nov.
23'	Ocular channels superficial; ventral channels narrow (Fig. 7C); pronotum with anterior margin wider than posterior margin (more than 1.1 times); aedeagus as in Fig. 7Q.....	<i>H. difficilis</i> sp. nov. (in part)
24(20)	Fifth visible abdominal segment completely black or completely red.....	25
24'	Fifth visible abdominal segment bicoloured; 1/3, 1/2 or 2/3 of base black and remainder red.....	26
25(24)	Fifth visible abdominal segment red; ocular channels with four long setae; ventral posterior corners of head with long setae (Fig. 6F); aedeagus as in Fig. 8O.....	<i>H. punctipennis</i> (Bierig)
25'	Fifth visible abdominal segment black; ocular channels with three long setae (Fig. 6J); ventral posterior corners of head without a long seta (Fig. 6E); aedeagus as in Fig. 8M.....	<i>H. obsoletus</i> sp. nov.
26(24)	Ocular channels deep; ventral channels moderately wide (Fig. 7B); head wider than pronotum (more than 1.2 times); aedeagus as in Fig. 8H.....	<i>H. guerreroensis</i> sp. nov.
26'	Ocular channels moderately deep; ventral channels narrow (Fig. 7C); head and pronotum with similar width (less than 1.2 times); aedeagus different.....	27
27(26)	Head with dorsal punctures slightly visible; ocular channels wide; pronotum less than 1.1 times wider at anterior margin than posterior margin; aedeagus as in Fig. 8K.....	<i>H. mordax</i> (Bierig)
27'	Head with dorsal punctures visible near to Y-shaped groove and ocular channels; ocular channels moderately wide; pronotum more than 1.1 times wider at anterior margin than posterior margin; aedeagus as in Fig. 8S.....	<i>H. sanguineus</i> Sharp
28(19)	Elytral disc with setae sparse in addition to the row of several setae on central part; abdomen with dense long setae; aedeagus as in Fig. 8U.....	<i>H. setosus</i> sp. nov.
28'	Elytral disc with row of several setae on central part only; abdomen with moderate long setae; aedeagus different ...	29
29(28)	Elytra shorter than pronotum (almost 3/4 length of latter); lateral borders of head slightly flat or almost convex; abdomen rufotestaceous; aedeagus as in Fig. 7L.....	<i>H. brevipennis</i> sp. nov.
29'	Elytra as long as or slightly longer than pronotum; lateral borders of head form a clear flat area; first four or five visible abdominal segments black; aedeagus different.....	30
30(29)	Fifth visible abdominal segment and base (1/3, 1/2 or 2/3) black and apex red.....	31
30'	Fifth visible abdominal segment completely black or completely red.....	32
31(30)	Ocular channels deep or moderately deep, as wide as the first antennomere at its middle part; head less than 1.2 times as wide as pronotum; scutellum red; aedeagus as in Fig. 8A,C or D.....	<i>H. divisus</i> (Erichson) (in part)
31'	Ocular channels shallow and wider than the first antennomere at its apex; head 1.2 times or more the width of pronotum; scutellum black; aedeagus as in Fig. 8J.....	<i>H. minensis</i> sp. nov.
32(30)	Fifth visible abdominal segment black; ventral channels narrow (Fig. 7C); scutellum red; aedeagus as in Fig. 8C.....	<i>H. divisus</i> (Erichson) (in part)
32'	Fifth visible abdominal segment red; ventral channels moderately narrow (Fig. 7B); scutellum black; aedeagus different	33
33(32)	Ocular channels with three setae (Fig. 6J); ventral posterior corners of head without a long seta; lateral areas of head with punctures slightly more dense at upper half than lower half; aedeagus as in Fig. 8T.....	<i>H. scutellaris</i> sp. nov.
33'	Ocular channels with four setae (Fig. 6I); ventral posterior corners of head with a long seta (Fig. 6F); lateral areas of head with punctures clearly more dense in upper than lower half (Fig. 6B); male unknown.....	<i>H. tlanchinolensis</i> sp. nov.

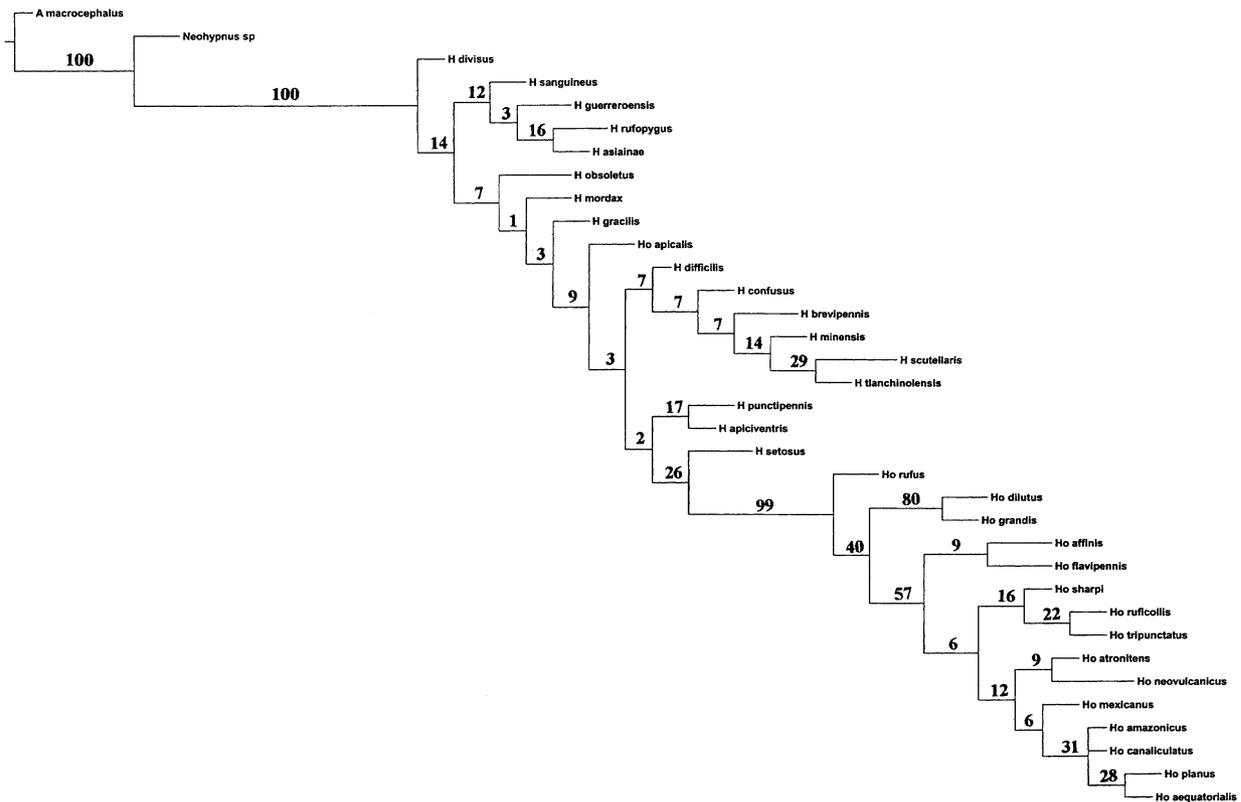


Fig. 6 Majority consensus cladogram resulting from bootstrap analysis applied to phylogenetic hypothesis (numbers are percentages).

The first 14 species below (listed in alphabetical order) share the following characters (some exceptions are indicated in the descriptions): depressed body; antennae reach middle part of the pronotum when directed behind; second antennomere almost half the length of the third; labrum slightly convex at apex, each half with two long setae and 10 or more short setae; maxillary palpal segments 2, 3 and 4 combined almost 0.75 times as long as first antennomere; eyes less than one-quarter the lateral length of head; ocular channels bifurcate ventrally and forward from eye, with four setae distributed as in Fig. 6G; posterior corners of head form right, acute or very acute angles; posterior border of head has transverse row of eight long setae; ventral channels deflected toward posterior corners of head; pair of ventral carinae on head; gular area near neck carinate and with wrinkled microsculpture as on interior of ventral channels; ventral posterior corners of head without a long seta; width of head 1.2 times or more that of the pronotum; neck more than 3.5 times narrower than head; elytra with fine, sparse punctuation.

***Homalolinus aequatorialis* sp. nov.**

Type. Holotype male. ECUADOR: Pichincha. I.85 Puerto Quito Legit: G. Onore (QCAZ).

Etymology. Based on the only locality from which this species is known, in Ecuador.

Diagnosis. Colour pattern similar to that of *H. affinis*, but with red scutellum and elytra; anterior half of fifth visible abdominal segment black and posterior half red; ocular channels very deep and narrow; lateral areas of head with deep and dense, almost homogeneously distributed, punctuation; elytra without central setae; aedeagal shape.

Description. Total body length 17.8 mm. Head, pronotum and first to fourth visible abdominal segments black; fifth visible abdominal segment with black basal half and red apical half; antennae, maxillary and labial palps, elytra, scutellum, thoracic sterna, legs, sixth visible abdominal segment to apex red. Head: mesh microsculpture visible; dorsally with fine, sparse punctures; ventrally with similar punctuation as dorsal surface; ocular channels very deep, as narrow as punctures inside; lateral areas with deep and dense, almost homogeneously distributed, punctuation; ventral channels very deep, narrow (almost 1/4 width of cephalic half), with moderate wrinkled and reflecting microsculpture. Pronotum: mesh microsculpture; few punctures visible; width of anterior margin

more than 1.2 times that of posterior margin; midline visible along almost entire length. Elytra without central setae. Aedeagus pear-shaped (Fig. 7F); parameres symmetrical.

Variation. Unknown.

Distribution. Known only from Ecuador.

***Homalolinus affinis* Sharp**

Homalolinus affinis Sharp, 1885: 473

Type material. Syntypes females: *Homalolinus affinis*. Type D. S. San Geronimo. Guatemala. Champion (in the card with the specimen)/Type/San Geronimo, Vera Paz. Champion/BCA Col. I.2. *Homalolinus affinis*, Sharp/Sharp Coll.1905–313/Syntype (1, BMNH). Purula, Guatemala. Champion/BCA Col. I.2. *Homalolinus affinis*, Sharp/Syntype (1, BMNH).

Material examined. GUATEMALA, Zacapa Prov., 20 km N Estancia de la Virgen, 24.vi.1993, J. Ashe & R. Brooks (6, SEMC; 1, MZFC; 1, CAUVG); El Progreso, 19.6 km N Estancia de la Virgen, Finca Las Iluciones, 24.vi.1993, R. Anderson (1, SEMC); Dpto. Zacapa 8 km NE San Lorenzo, 7.vii.1986, J. M. Campbell (2, CNC); Izabal, Sto. Tomás, Cerro San Gil, 27.iii.1998, (1, CAUVG); Baja Verapaz, 4 km S Purulhá, 2.vii.1993, J. S. Ashe, R. W. Brooks (1, SEMC); S. P. Yepocapa, Chimal., 27.iv.1948, R. L. Wenzel leg. (1, FMNH); Dpto. San Marcos between Sivinal and Unión Juárez (Chiapas) W slope Volcán Tacaná, Barranca Rio la Laja, 31.xii.1976, H. Frania D. Proctor (1, AMNH). MÉXICO, Chiapas, Unión Juárez, NE slope Volcan Tacaná (Guat) Rio de Finca Muxbal, 26.xii.1975, H. Frania (10, AMNH); Barranca Providencia, 15.xii.1975, H. Frania (1, AMNH); Volcan Tacaná, Rio de Finca Muxbal, 26.xii.1975, H. Frania (1, AMNH); Unión Juárez, 21.iv.1983, E. Barrera (1, CNIN); 6 mi E San Cristóbal de L. C., Chis. Mex., 9.v.1969, H. F. Howden (1, MZFC); 8 mi E San Cristobal de L. C. Chis., 19.v.1969, J. E. H. Martín (1, CNC); Chis., 10 mi SE San Cristóbal, 9.v.1969, H. J. Teskey (2, CNC); Chiapas, 6 km NW Tapalapa, 15.iii.1994 (1, ECOSUR); O. Gómez; 1.5 km W Chilil 16 km SE San Cristobal, 5.vi.1991, J. S. Ashe Coll. (1, SEMC); Tenejapa c. 30 mi ENE Tuxtla Gutiérrez, 29.xii.1972, H. Frania (2, AMNH).

Diagnosis. This species can be distinguished by its colour pattern, depressed body, moderately deep and narrow ocular channels, lateral areas of head with deep and dense, almost homogeneously distributed, punctuation, moderately deep and wide ventral channels, and aedeagal shape.

Redescription. Total body length 21.8 mm. Head, prothorax and first to fourth visible abdominal segments black; fifth visi-

ble abdominal segment with brown basal half and red apical half; elytra and sixth visible abdominal segment to apex red; antennae (except first segment), mandibles, maxillary and labial palps and legs (except tarsal segment) brown-red. Head: mesh microsculpture slightly visible; fine, sparse punctures, and wide punctures in middle part of Y-shaped groove, inside and behind ocular channels; ventral surface with denser punctures than dorsal surfaces, punctures distributed near to ventral channels; ocular channels moderately deep, as narrow as or less than first antennomere at its middle part; lateral areas with deep and dense, almost homogeneously distributed, punctuation; ventral channels moderately deep, wide (c. 1/3 the width of the cephalic half), with conspicuous wrinkled and reflecting microsculpture, combined with sparse punctures. Pronotum: mesh microsculpture; few punctures visible; width of anterior margin 1.1–1.2 times that of posterior margin; midline visible along almost entire length. Scutellum black. Left elytron with row of three setae and right one with two setae on posterior half. Aedeagus pear-shaped (Fig. 7G); parameres asymmetrical.

Variation. Total body length 14.4–22.8 mm (average 18.5 mm); middle part of Y-shaped groove with or without irregular lines; ocular channels deep to moderately deep; lateral areas of head with dense to very dense punctuation; posterior corners of head form an acute or very acute angle; ventral channels deep to moderately deep; ventral carinae of head conspicuous to moderately developed; elytron with row of 3–4 setae on posterior half; fifth visible abdominal segment varies in proportion of black/red coloration.

Distribution. Guatemala and south-east México.

***Homalolinus atronitens* Casey**

Homalolinus atronitens Casey, 1906: 374

Type material. *Holotype* male: Gua/Casey bequest 1925/Type USNM 48184 (orange label)/*Homalolinus atronitens* Csy (NMNH).

Material examined. NICARAGUA, Granada, Res. Biól. Volcán Mombacho, 2.ii.2000, J. Márquez col. (2, MZFC); Matagalpa, Fuente Pura, 10.iv.1994, Col. J. M. Maes & A. De La Fuente (1, MEN); 5 mi N. Estelí, Nic., 22.vii.1965, A. Raske (3, CNC). HONDURAS, Francisco Morazán, 7.6 km N Guaimaca, 26.vi.1994, J. Ashe, R. Brooks (1, SEMC). GUATEMALA, Jalapa, Mataquesuintla, 1.ix.1990, Alejandro Caronn (1, MZFC); Dpto. de Guatemala, Puerta Parada, 7.iii.1977, J. Schuster (1, CAUVG); Capetillo, G. C. Champion (1, AMNH); Quetzaltenango, 12.5 km SW Zunil, 21.vi.1993, J. Ashe, R. Brooks (1, SEMC); Mun. Yepocapa, Chimal, 27.iv.1948 (1, FMNH).

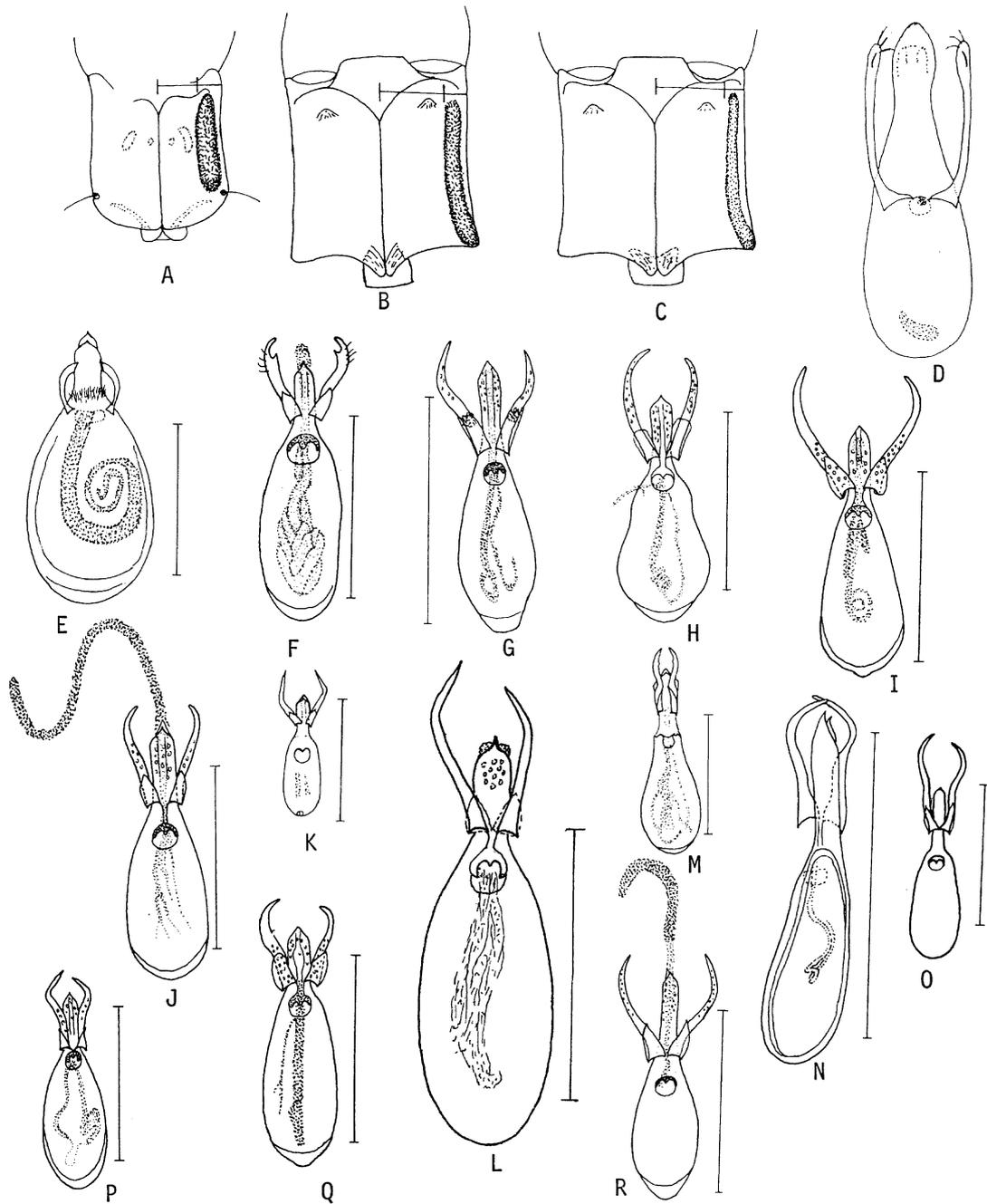


Fig. 7 A–R. Ventral view of head showing width of left longitudinal channel in relation to cephalic half: —A. wider than $1/3$. —B. between $1/4$ and $1/3$. —C. $1/4$ or less. Aedeagus (ventral view) of: —D. *A. macrocephalus*. —E. *Neobygnus* sp. —F. *H. aequatorialis*. —G. *H. affinis*. —H. *H. apicalis*. —I. *H. apiciventris*. —J. *H. asiainae*. —K. *H. atronitens*. —L. *H. brevipennis*. —M. *H. amazonicus* (holotype). —N. *H. canaliculatus* (lectotype, redrawing of Smetana 1977). —O. *H. canaliculatus* (of Costa Rica). —P. *H. difficilis* (form of black elytra). —Q. *H. difficilis* (form of red elytra). —R. *H. dilutus*. Scale = 1 mm.

Diagnosis. Abdomen black, except for the last two visible segments, which are red; ocular channels very deep and narrow; lateral areas of head with deep and dense, almost homogeneously distributed, punctuation; ventral channels shallow and wide; small aedeagus.

Redescription. Total body length 14.7 mm. Head, thorax and first to fourth visible abdominal segments shiny black; maxillary and labial palps, tarsal segments, posterior ventral angles of head, prosternum, fifth visible abdominal segment to apex red; antennae and legs red-brown. Head: mesh microsculpture slightly visible; with fine, sparse punctures; ventral surface with similar punctuation as dorsal surface; ocular channels very deep, as narrow as first antennomere at its base; lateral areas of head with deep and dense, almost homogeneously distributed, punctuation; ventral channels shallow, wide (almost 1/3 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture, combined with some wide punctures. Pronotum: mesh microsculpture; fine, sparse punctures; width of anterior margin 1.1–1.2 times that of posterior margin; midline visible near to posterior border only. Left elytron with one central seta and right one without central seta. Aedeagus pear-shaped (Fig. 7K); parameres symmetrical.

Variation. Total body length 13.1–19.3 mm (average 15.8 mm); some specimens with a few wide punctures behind ocular channels; wide punctures more conspicuous on ventral face (both inside and near to ventral channels) than dorsal face; in a few specimens lateral areas of head have more dense punctures in upper than lower half, but not to the same extent as in other species; posterior corners of head form an acute to very acute angle; ventral channels with variable width (1/3 to less than 1/4 width of cephalic half); ventral carinae slightly to well developed; right elytron or left elytron with one central seta, or without central seta.

Distribution. This species is recorded from Guatemala and, for the first time, from Honduras and Nicaragua.

***Homalolinus canaliculatus* (Erichson)**

Xantholinus canaliculatus Erichson, 1839: 307

Homalolinus canaliculatus Sharp, 1885: 472

Xantholinus amazonicus Sharp, 1876: 203, syn. nov.

Homalolinus amazonicus Blackwelder, 1944: 148

Type material. *Homalolinus canaliculatus*: Lectotype male (data taken from Smetana 1977): '5803'/*canaliculatus* Dej. Bogota Bug. (large green label)/Lectotype *Xantholinus canaliculatus* Erichs. A. Smetana des. 1977 (Museum für Naturkunde der Humboldt-Universität zu Berlin, Germany). *Homalolinus amazonicus*: Holotype male: Type (red label)/Ega (green label)/

S. America: Brazil/Sharp Coll.1905–313/*Xantholinus amazonicus* Type D. S. (BMNH).

Material examined. ARGENTINA, Gob. Misiones (1, MACN). BRAZIL, Squire, S. America, Sharp coll.1905–313 (1, BMNH; 1 FMNH); Ega (1, BMNH); Nova Teutonia. Brasilia, L. Fritz Plaumann (1, BMNH; 1, FMNH); Organ Mt. Brasil, Eteel Coll. (1, BMNH); Brasilia (1, FMNH); S. Paulo Umgbg. vs. Ribeirao Preto (2, FMNH); Para; Caninde, Rio Gurupi (1, FMNH; 1, MZFC); Sao Paulo (1, FMNH); Paraná, Guarapuava (1, CNC; 1, MZFC); Sta. Catharina, Pedropolis (1, IRSNB). BOLIVIA, Col. Paolo Betella. (Rio Azuayo)/Dpto. SC. Prov. Ichilo Loc. Parque Amberó (1, FMNH); Yuracarís Bolivié (1, IRSNB). PERU, Tambopata Prov. Madre de Dios Depto., Cuzco Amazonica, Maldonado Reserva (1, SEMC); Madre de Dios, Cocha Cashu Biol. Stn. Manu National Park (3, SEMC), Utcuyacu, Darma Department del Junin (8, AMNH); Peru 79.17 (2, BMNH); Tebas (1, IRSNB). COLOMBIA, Caracas (1, IRSNB); Bogota (2, BMNH); St. Fé de B. (1, BMNH); Cauca; San Andres (Tierradentro) 2, FMNH; Putomayo: Santa Rosa (Kofan Indian Village), Rio San Miguel 2, FMNH; Sta Cruz de la Tierra (1, IRSNB). COSTA RICA, Estac. Cacao, SW side Volcán Cacao Guanac. Prov. (1, INBIO); La Amistad, Sect. Altamira, Buenos Aires, Prov. Punta. (1, INBIO).

Diagnosis. This species is distinguished by the combination of the following characters: depressed body; ocular and ventral channels deep and narrow; body shiny black except for the last two visible abdominal segments; lateral areas of head with punctures almost homogeneously distributed; small aedeagus with symmetrical parameres.

Redescription. Total body length 14.6 mm. Coloration shiny black, except for the apical half of fifth visible abdominal segment to apex, which is red. Head: no visible punctures and microsculpture on dorsal surface; ventral surface with some wide punctures inside and near to ventral channels; ocular channels very deep, narrower than first antennomere at its middle part; lateral areas with deep and dense, almost homogeneously distributed, punctuation, less dense on upper half; ventral channels deep, very narrow (1/4 or less width of cephalic half), with punctures. Pronotum: few punctures visible; width of anterior margin more than 1.2 times that of posterior margin; midline visible along almost entire length. Elytron even, without row of setae on medial part. Aedeagus pear-shaped (Fig. 7M–O); parameres symmetrical.

Variation. Total body length 10.5–17.4 mm (average: 13.7 mm). Head: lateral areas with punctures dense to moderate;

posterior corners form an acute to very acute angle; carinae on ventral face finely developed; fifth visible abdominal segment completely red or with black basal half and red apical half; aedeagus with small variations, as in Fig. 7M–O.

Remarks. It was not possible to study type material of this species, but it has been adequately described in Smetana (1977) (Fig. 7N). *Homalolinus amazonicus* was described by Sharp (1876) as very similar to *H. canaliculatus*, but with the last two abdominal segments completely yellow. The aedeagus (Fig. 7M) of the holotype of *H. amazonicus* is slightly smaller than the aedeagus of *H. canaliculatus*. However, some specimens with the last two visible abdominal segments yellow (e.g. *H. amazonicus*) have a large aedeagus as in *H. canaliculatus*, while others with the fifth visible abdominal segment black basally and yellow apically (as in *H. canaliculatus*) have a small aedeagus similar to the holotype of *H. amazonicus*. No other morphological differences were observed. In addition, two specimens from Costa Rica have the typical characters of *H. canaliculatus*, but their aedeagi differ slightly (Fig. 7O). I propose *H. amazonicus* as synonym of *H. canaliculatus*.

Distribution. Argentina, Brazil, Bolivia (first record), Peru (first record), Colombia and Costa Rica (first record).

***Homalolinus dilutus* Sharp**

Homalolinus dilutus Sharp, 1885: 473

Type material. Lectotype female: *Homalolinus dilutus* Type D. S. Parada. México. Sallé (in the plaque with the specimen)/Type/BCA Col. I.2. *Homalolinus dilutus*, Sharp/Sharp Coll.1905–313/Syntype/Lectotype *Homalolinus dilutus* Sharp, 1885, J. Márquez des. 2001 (BMNH). Paralectotypes: (sex not identified): *Homalolinus dilutus* Type D. S. Parada. México. Sallé (in the plaque with the specimen)/Parada/México. Sallé Coll./BCA Col. I.2. *Homalolinus dilutus*, Sharp/1110/Syntype/Paralectotype *Homalolinus dilutus* Sharp, 1885, J. Márquez des. 2001 (1, BMNH); Parada/México. Sallé Coll./BCA Col. I.2. *Homalolinus dilutus*, Sharp/Sharp Colln. by exchange with Brit. Mus. (N. H.)/Paralectotype *Homalolinus dilutus* Sharp, 1885, J. Márquez des. 2001 (1, FMNH).

Material examined. MÉXICO, Oaxaca; 7.9 km NW La Carbonera, 11.vi.1979, J. S. Ashe (1, SEMC); Oaxaca, 3.2 km S San José del Pacífico, 22.vii.1992, H. Frania (1, SEMC); Oaxaca, 20.5 km N Oaxaca, 6.vi.1971, Bright (1, CNC); Oaxaca, 8 km NE Ixtlán de Juárez, 18.viii.1988, J. T. Doyen (1, CISC); 58.135 Mex. (Oaxaca) 1, BMNH; México (1, FMNH).

Diagnosis. Depressed body, mainly red, ocular channels with two setae inside them, posterior border of head with row of

four long setae, ventral channels deep and narrow, ventral posterior corners of head with a long seta, and aedeagal shape.

Redescription. Total body length 19.4 mm. Head black; neck dark brown; antennae, maxillary and labial palps, thorax and abdomen red. Head almost quadrate (less than 1.1 times width at posterior margin); mesh microsculpture visible; some deep punctures in middle part of Y-shaped groove; ventral surface with similar punctuation as dorsal surface; ocular channels shallow, conspicuously wider than first antennomere at its apex, with microsculpture as irregular lines and two setae distributed as in Fig. 6H; lateral areas with deep and dense punctuation on upper half and fine punctuation on lower half; posterior border of head with row of four long setae; ventral channels deep, narrow (1/4 or less the width of cephalic half), with wrinkled and reflecting microsculpture; ventral posterior corners of head with a long seta. Pronotum: fine, sparse punctures; mesh microsculpture slightly visible; width of anterior margin less than 1.1 times that of posterior margin; midline visible along almost entire length. Elytron with row of five setae on medial part. Aedeagus pear-shaped (Fig. 7R); parameres symmetrical.

Variation. Total body length 13.5–16.8 mm (average 14.8 mm); some specimens with deep punctures behind ocular channels; centre of head with or without striae; ocular channels slightly to moderately deep, as wide as first antennomere at its apex or more; posterior corners of head form a right to very acute angle; ventral channels moderately to very deep, variably wide (1/4 or less the width of the cephalic half); elytron with row of six, five or four setae on central part.

Remarks. Lectotype and paralectotypes were designated because *H. dilutus* can be confused with *H. grandis* sp. nov. and *H. asiainae* sp. nov.

Distribution. México, principally distributed in central Oaxaca.

***Homalolinus flavipennis* (Erichson) (Fig. 1A)**

Xantholinus flavipennis Erichson, 1839: 307

Type material. Syntype female: 126 (red label)/Sharp Coll. ex Chevrolat. B. M.1905–313 (BMNH).

Material examined. MÉXICO, *Xantholinus flavipennis* Er. var. Major. Cerro de Plumas. México. Höge (in the plaque with the specimen)/BCA Col. I.2. *Homalolinus flavipennis*, Er.; *Xantholinus flavipennis* Er. (1, BMNH); Cerro de Plumas. Höge (in the plaque with the specimen)/BCA Col. I.2. *Homalolinus flavipennis*, Er. (1, BMNH); Oaxaca/México. Sallé coll./BCA Col. I.2. *Homalolinus flavipennis* Er. (1, FMNH);

Oaxaca, México (1, IRSNB); Guerrero, Mpio. Guamucitlán, Tlaquiltepec, 25.vi.1997. E. Camaño col. (1, MZFC); Morelos, Tlayacapan y Tlalnepantla, 15.viii.1998, R. Toledo & J. Márquez (1, MZFC); Tlayacapan, San José de los Laureles, 27.xi.1993, J. Márquez (2, MZFC); Tepoztlán, Mor., 28–30.ix.1945, Bolívar, Ramírez (3, CNIN); Cuernavaca, Méxiq (1, IRSNB); Puebla, San Bartolo Teontepec, 12.ix.1992, E. Barrera, G. Ortega (2, CNIN); Puebla, Tehuacan, San Lorenzo, La Mesa, 22.i.1993, C. Cabello & A. Pérez (1, CZUG); Hgo. Tasquillo, Tzindejeh, 15.iv.1998, J. L. Navarrete (1, CZUG); E. Duges, Guanajuato, 386 D.1906 (1, CNIN); Guanajuato (1, IRSNB); E. Duges, Tupataro, 386 D.1906 (1, CNIN); Vulkan Colima, Coll. Joh, Lave, 1918 (3, ZSMC); Jalisco, Ciudad Guzmán, 20.ix.1996, F. Bonilla col./ Nevado de Colima, 15 km S Guzmán (1, IMECBIO); Bilimek México 188 (1, FMNH); Méxiq (1, IRSNB).

Diagnosis. This species is distinguished by the completely black abdomen.

Redescription. Total body length 13.7 mm. Head, prothorax and abdomen black; antennae (except first segment), maxillary and labial palps, and legs (except tarsal segments) red-brown; elytra, tarsal segments and genital segment red. Head: no microsculpture; some deep punctures in middle part of Y-shaped groove; ventral surface similar punctuation as dorsal surface; ocular channels shallow, as wide as first antennomere at its middle part, with microsculpture as irregular lines; lateral areas with deep and dense punctuation on upper half and fine punctuation on lower half; ventral channels shallow, moderately wide (1/3–1/4 width of cephalic half), with wrinkled and reflecting microsculpture. Pronotum: microsculpture and punctuation slightly visible; width of anterior margin 1.1–1.2 times that of posterior margin; midline visible along almost entire length. Elytron with row of four setae on posterior 2/3. Aedeagus pear-shaped (Fig. 8E); parameres asymmetrical.

Variation. Total body length 13.6–21.0 mm (average 18.0 mm); ocular channels with or without deep punctures behind them; posterior corners of head form a right, acute or very acute angle; ventral channels moderately wide to narrow (1/3–1/4 or less width of cephalic half), and slightly to moderately deep; elytron with row of five to four setae on posterior 2/3.

Distribution. The states of Oaxaca, Puebla, Morelos, Hidalgo, Guanajuato, Michoacan, Colima, and Jalisco in México.

***Homalolinus grandis* sp. nov.**

Type series. *Holotype* male: MÉXICO, Guerrero, Omiltemi, 10.vi.1985, F. Arias (CNIN). *Paratypes:* MÉXICO, Omilteme, Guerrero, 8000 ft., H. H. Smith, *Homalolinus dilutus* Sharp, det. Bernhauer. Godman-Salvin Coll.1911–345 (1, BMNH);

Guerrero c. 78 km NE Atoyac de Alvarez, 27.vii.1992, 1960–2120 m, J. S. Ashe, H. Frania # 133, ex: leaf litter/rotten wood (1, SEMC).

Etymology. Refers to length: one of the longest species of the genus.

Diagnosis. Depressed body, mainly red; ocular channels with two setae; posterior border of head with row of four long setae; ventral channels moderately deep and wide; ventral posterior corners of head without a long seta; and aedeagal shape.

Description. Total body length 21.5 mm. Head and neck black; thorax, abdomen, legs, antennae and maxillary and labial palps red. Head: mesh microsculpture visible; fine, sparse punctures and some very conspicuous deep punctures inside and behind ocular channels; ventral surface with punctures less visible than dorsal surface; ocular channels almost superficial, wider than first antennomere at its apex, with microsculpture as irregular lines and two setae distributed as in Fig. 6H; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; posterior border with row of four long setae; ventral channels moderately deep, wide (1/3 width of cephalic half), with wrinkled and reflecting microsculpture. Pronotum: mesh microsculpture; fine, sparse punctures; width of anterior margin less than 1.1 times that of posterior margin; midline visible near to posterior border only. Elytron with mesh microsculpture slightly visible; with row of four setae on posterior 2/3. Aedeagus pear-shaped (Fig. 8G); parameres symmetrical.

Variation. Total body length 21.5–22.7 mm (average 22.4 mm); ocular channels with deep punctures inside and behind them varying in density; ventral carinae of head slightly to moderately developed.

Distribution. The species is known only from the Sierra Madre del Sur of Guerrero, México.

***Homalolinus mexicanus* sp. nov.**

Type series. *Holotype* male: MÉXICO, Veracruz, Xalapa, La Herradura, cafetal y bosque tropical, 1292 m, en tronco podrido, 26.i.1999, Q. Santiago (MZFC). *Paratypes:* MÉXICO, 22 km N Ocozocoautla Chis., 1.vii.1969, Campbell & Bright (2, CNC); 12 km NO Berriozábal, ‘Pozo La Pera’. 917 m, 19.vii.2001, Col. A. M. Corona (1, MZFC); Oaxaca, Pluma Hidalgo, 31.i.1988, E. Barrera, A. Cadena, E. Ramírez (1, CNIN); Oaxaca, Portillo del Rayo, 3.viii.1987, F. Arias (1, CNIN); V. C. Volcan San Martin, SE slope B. & B. Valentine, el. 4–4500 ft, 29.vii.1959 (1, FMNH); Ver., 7 mi N Santiago Tuxtla, 8.vii.1963, John T. Doyen (1, CISC);

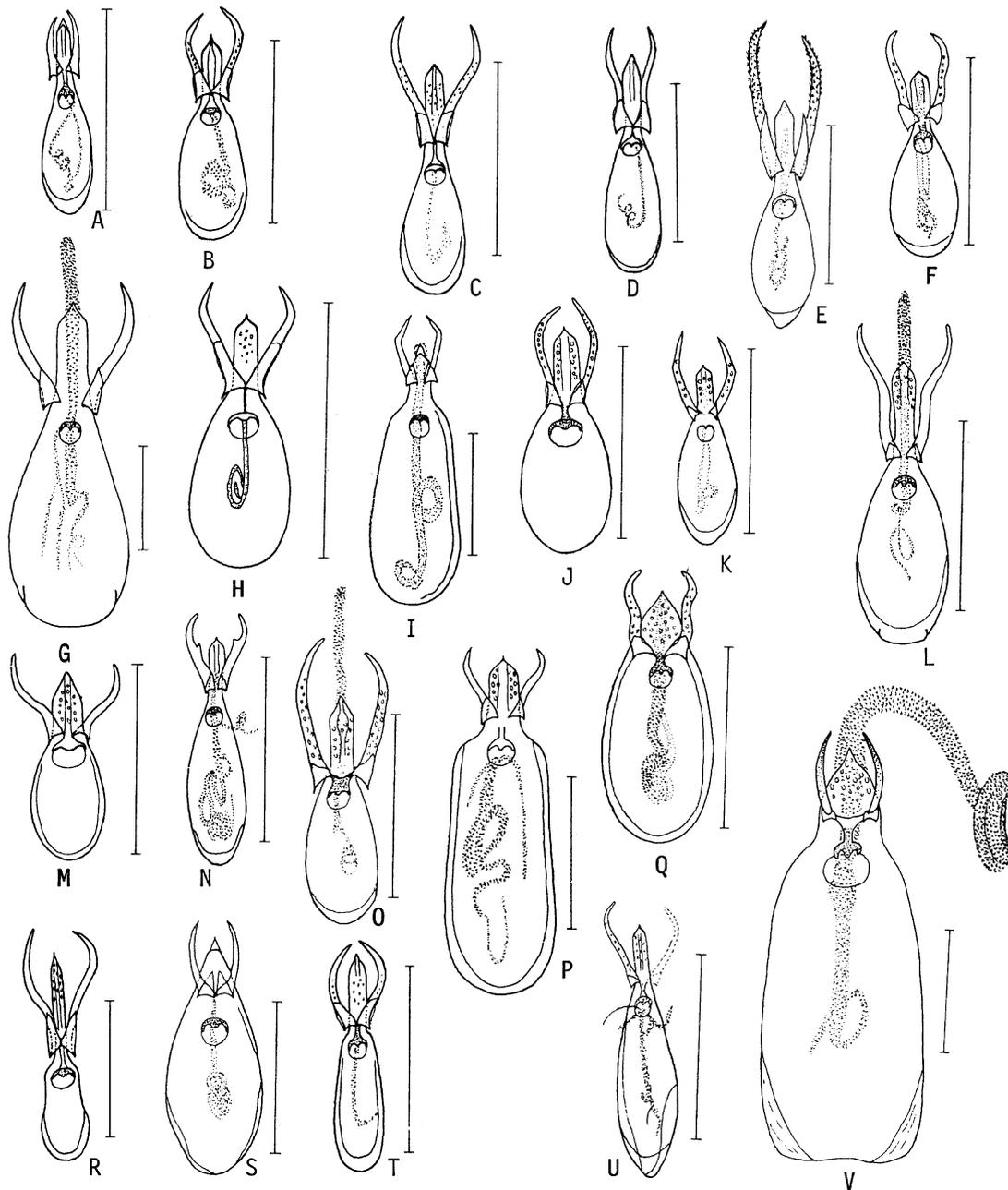


Fig. 8 A–V. Aedeagus (ventral view): —A. *H. divisus* (typical). —B. *H. divisus* (form of Guanajuato, México). —C. *H. divisus* (form of Guatemala). —D. *H. divisus* (form of Honduras). —E. *H. flavipennis*. —F. *H. gracilis*. —G. *H. grandis*. —H. *H. guerreroensis*. —I. *H. mexicanus*. —J. *H. minensis*. —K. *H. mordax*. —L. *H. neovulcanicus*. —M. *H. obsoletus*. —N. *H. planus*. —O. *H. punctipennis*. —P. *H. ruficollis*. —Q. *H. rufopygus*. —R. *H. rufus*. —S. *H. sanguineus*. —T. *H. scutellaris*. —U. *H. setosus*. —V. *H. sharpi*. Scale = 1 mm.

Veracruz, Córdoba, Ojo de agua, selva mediana subcaducifolia, 11274 m, ex tronco caído, 23.x.1998, R. Toledo, G. Flores, Q. Santiago & J. Márquez (1, MZFC); Córdoba, V. Cruz, Méx., 20.vii.1937, col. by E. Williams, Jr. (1, FMNH); México, *Homalolinus* (3, AMNH); Córdoba, Salle Coll.,

donated by F. Du, C. Godman, 1907 (1, AMNH); Veracruz, Fortín de las Flores, 23.xii.1963, under bark, C. W. O'Brien (1, CNC); Veracruz, Metlac Canyon 4 km SW Fortín, 16.vii.1990, J. Doyen (1, CISC); Veracruz, Totutla, Mata Oscura, 1 sur de Zacuapam, selva mediana subcaducifolia,

862 m, en tronco podrido, 18.v.1999, J. Asiain, Q. Santiago & J. Márquez (1, MZFC); Same data as holotype (1, MZFC); same data as holotype, except 21.ii.1999 (1, MZFC); same data as holotype, except 23.xii.1998 (3, MZFC); same data as holotype, except: 26.vi.1999 (1, MZFC); Jalapa (2, FMNH); same data as holotype, plus: under bark (1, CISC); Veracruz, 2.5 km S Jalapa, 26.v.1991, 1370 m. J. S. Ashe # 6 ex: under bark (6, SEMC); Banderilla, La Martinica, 25.vii.2001, alt. 1500 m, bajo corteza de tocón para cerca. L. Delgado col. (1, IEXA); Puebla, Orizaba (1, IRSNB); 24 mi NE Rancho Viejo Hgo., 22.vi.1962, J. M. Campbell (1, CNC); Hochlant, México, C. Plason, *H. canaliculatus* Er. (2, FMNH); México, *canaliculatus* Erich., Sharp Coll.1905–313 (4, BMNH); 16259, México, Fry Coll.1905.100 (1, FMNH); Bilimek, México 188 (1, FMNH); México ded. ganglb, *canaliculatus* Er. Jalapa. Leg. Höge (1, FMNH); Mexiko (1, FMNH); México, Sharp Coll.1905–313 (3, BMNH); México (1, MZFC).

Etymology. Refers to species' known distribution, in east and south-east México.

Diagnosis. Colour pattern as in *H. canaliculatus*, but the fifth visible abdominal segment with black basal half and red apical half; lateral areas of head with deep and dense, almost homogeneously distributed, punctures; ventral channels with wide punctures both inside and around them, but without wrinkled and reflecting microsculpture; elytron without central setae; and aedeagal shape.

Description. Total body length 14.4 mm. Head, thorax, first to fourth visible abdominal segments, basal half of fifth and legs shiny black; antennae (except first segment), maxillary and labial palps, tarsal segments, apical half of fifth visible abdominal segment to apex red. Head: mesh microsculpture and some fine punctures visible; with some wide punctures near to ventral channels; ventral surface with similar punctuation as dorsal surfaces; ocular channels very deep, as narrow as first antennomere at its base; lateral areas with deep and dense, almost homogeneously distributed, punctures; ventral channels shallow, moderately narrow (almost 1/4 width of cephalic half), with some wide punctures inside and around them. Pronotum: microsculpture and punctures reduced; width of anterior margin 1.1–1.2 times that of posterior margin; midline slightly visible near of posterior border only. Elytron without central setae. Aedeagus pear-shaped (Fig. 8I); parameres symmetrical.

Variation. Total body length 11.0–17.8 mm (average 14.9 mm); fifth visible abdominal segment with black basal half or dark and red apical half or yellow (as a gradient colour); one specimen from (female) 'Los Tuxtlas', Veracruz, México, with the fifth

visible abdominal segment entirely yellow, although probably teneral; posterior corners of head form a right to very acute angle; ventral carinae of head slightly to well developed; ventral channels with variable width (1/4 to more than 1/3 width of cephalic half); ventral channels with punctures varying in density; midline of pronotum varying in visibility.

Distribution. México, from Chiapas to Veracruz and Hidalgo.

***Homalolinus neovulcanicus* sp. nov.**

Type series. *Holotype* female: MÉXICO, Morelos, Tlayacapan, San José de los Laureles, Bos. Mes. de Mon. Per., 1800 m, ex corteza de *Quercus* caído, 3.xi.1999, J. Asiain & J. Márquez cols. (MZFC). *Paratypes*: MÉXICO, Tepoztlán, Mor., 28–30.ix.1945. Bolivar, Ramírez (1, CNIN); Real de Arriba, vii.1932, 6300 ft, México, D. F., H. E. Hinsiden collector (1, AMNH); Tupátaro (1, IRSNB); Jal. Tequila, Volcán de Tequila, BM, 1800 m, 21.xii.1994, ex bajo corteza *Quercus*, G. A. Quiroz, J. L. Navarrete (1, CZUG); Jal. Cd. Guzmán, el Floripondio, B. *Abies*, 2300 m, 25.ii.1994, ex tronco desc. M. Gómez (1, CZUG); Jalisco, Tequila, Volcán de Tequila, BM, 1800 m, ex troncos con hongos (*Stereum*), 9.x.1999, 15.x.1999, H. Fierros col. (1, CZUG); Jalisco, Zapopan, ex Hda. del Lazo, 1150 m, 5.v.1997, ex corteza de *Ficus* sp. (1, CZUG); Jalisco, Chiquilistlán, bosque de pino-encino, 4.ii.2001, bajo corteza, C. C. Hernández (1, CZUG); 1, MZFC); Durango (1, BMNH); Méxiqe/*dilutus* Shrp. var. (2, IRSNB; 1, MZFC).

Etymology. Refers to the known distribution in different localities of the Transmexican Volcanic Belt, in the states of Morelos, México, Michoacan and Jalisco.

Diagnosis. This species can be identified by the colour pattern, deep and narrow ocular channels, lateral areas of head with deep and dense punctures in upper half and fine punctures in lower half, ventral channels moderately deep and wide, elytron with row of five setae on posterior 2/3, and aedeagal shape.

Description. Total body length 17.4 mm. Head and first to fourth visible abdominal segments black; thorax, legs and fifth visible abdominal segment to apex red-yellow; antennae and maxillary and labial palps brown. Head: mesh microsculpture slightly visible; with fine, sparse punctures and wide punctures behind ocular channels; ventral surface with wide punctures near to ventral channels; ocular channels deep, as narrow as first antennomere at its middle part; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep, wide (1/3–1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture combined with some punctures.

Pronotum: microsculpture and punctures slightly visible; width of anterior margin more than 1.2 times that of posterior margin; midline visible along posterior half. Elytron with row of five setae on posterior 2/3. Aedeagus pear-shaped.

Variation. Total body length 14.7–21.5 mm (average 18.4 mm); wide punctures slightly or clearly visible near to ocular and ventral channels; posterior corners of head form an acute to very acute angle; midline of pronotum varies in visibility; elytron with row of 4–5 setae on posterior 2/3.

Remarks. A female was selected as holotype because it is a recently collected, undamaged, specimen, with its characters clearly visible. Aedeagus pear-shaped (Fig. 8L), parameres symmetrical.

Distribution. México, principally in the Transmexican Volcanic Belt.

***Homalolinus planus* sp. nov.**

Type series. *Holotype* male: COSTA RICA, Heredia: La Selva Biol. Station nr. Puerto Viejo de Sarapiquí, 18.ii.1985, L. Herman # 2117 (AMNH). *Paratypes:* COLOMBIA, 1000 ft, Anchicaya, 22–27.vii.1970, J. M. Campbell malaise trap (2, CNC; 1, MZFC). COSTA RICA, Cartago, P. N. Tapanti, 1100 m, 9°45'41" N, 83°47'5" E, 18.vii.2000, J. S. Ashe, R. Brooks, Z. Falin. CR1ABFOO 167 ex: under bark (3, SEMC); as previous, except 19.vii.2000, 180 (1, SEMC); Alajuela, Peñas Blancas 850 m, 14.v.1989, J. Ashe, R. Brooks, R. Leschen ex: bark (2, SEMC; 2, MZFC); as previous, except 18.v.1989, ex. under tight bark (6, SEMC; 1, MZFC); Rio Sn Lorencito, 900 m, Res. For. Sn Ramon, 5 km N Col. Palmarena, Alajuela, iii.1990, curso Carabidae 244500–470700 (1, MZFC); Estac. Pitilla, 700 m, 9 km S Santa Cecilia, Guanacaste, ii.1990, P. Rios, C. Moraga & R. Blanco 330200–380200 (1, INBIO).

Etymology. Refers to species' depressed body shape, which, although not exclusive to it, is very conspicuous.

Diagnosis. Colour pattern similar to *H. neovulcanicus*, but the fifth visible abdominal segment has black basal half and red apical half; lateral areas of head with deep and dense, almost homogeneously distributed, punctures; ventral channels deep and narrow; aedeagal shape.

Description. Total body length 15.8 mm. Head, first to fourth visible abdominal segments and basal 2/3 of fifth segment black; thorax, legs and posterior third of fifth visible abdominal segment to apex red; antennae and maxillary and labial palps brown. Head almost quadrate (less than 1.1 times widest at posterior angles); dorsal and ventral surfaces without

microsculpture and punctures visible; ocular channels deep, less narrow than first antennomere at its middle part; lateral areas with deep and dense, almost homogeneously distributed, punctures; ventral channels deep, narrow (almost 1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture. Pronotum: microsculpture and punctures slightly visible; width of anterior margin more than 1.2 times that of posterior margin; midline visible along almost entire length. Elytron without central setae. Aedeagus pear-shaped (Fig. 8N); parameres symmetrical.

Variation. Total body length 13.7–17.2 mm (average 15.8 mm); ocular channels with variable distance between setae 3 and 4; lateral areas of head with punctures dense to moderate; ventral channels with variable width (1/4 or less width of cephalic half) and microsculpture well to moderately developed.

Distribution. Costa Rica and Colombia.

***Homalolinus ruficollis* Bernhauer**

Homalolinus ruficollis Bernhauer, 1929: 192

Type material. *Holotype* (sex not identified): Palo Verde, Costarica/*Homalolinus ruficollis* Shp. Typ. unic. (white label)/*Homalolinus ruficollis* Shp. Typus unic. (yellow label)/Chicago N. H. Mus. M. Bernhauer Coll. (FMNH).

Material examined. PANAMA, Chiriqui, Continental Divide Trail, 3.vii.1997, R. Turnbow (1, FMNH); Fortuna Stn., Jorge L. Arauz Centro de investigaciones trop., 14.vi.1993, S. Lingafelter (1, SEMC); La Fortuna. 'Cont. Divide Trail', 21.v.1995, J. Ashe, R. Brooks (6, SEMC; 1, MZFC); as previous, except 9.vi.1995 (4, SEMC; 1, MZFC); as previous, except 9–12.vi.1995 (1, MZFC); as previous, except 19.v.1987. O'Brien and Marshall (1, FMNH); Bocas de Toro. 17 km N Boquete. La Culebra Trail, 15.vii.1995, Allan R. Gillogly (1, SEMC). COSTA RICA, F. Nevermann. 20.vi.1926, La Palma, La Honduras (1, FMNH; 1, MZFC); Tapantí (Moya leg). 1.ix.1939 (2, FMNH; 1, MZFC); Heredia Prov., Montaña Azul 2 km N Vara Blanca, 4.ix.1973, P.A. Opler (1, CISC); Quebrada Segunda Res. Nal. Fauna Silv. Tapanti, Prov. Cartago, Costa Rica, G. Mora, iii.1992 (2, INBIO); as previous, except R. Vargas, iv.1992 (2, INBIO; 1, MZFC); as previous, except P. N. Tapantí, v.1992 (1, MZFC); as previous, except 19.vii.2000, J. S. Ashe, R. Brooks, Z. Falin; as previous, except 18.vii.2000 (13, SEMC); Cervantes. 23.iii.1941 (1, FMNH); Salto del Río Madero (Ortiz leg.) 16.v.1940 (1, FMNH); Est. Zurqui 500 m antes del Tunel, 1600 m. Prov. S. José, G. Maass, iii.1991 (1, INBIO); San José, Zurquí de Moravia. 6.vii.1993, P. Hanson (1, SEMC).

Diagnosis. This species can be identified using the combination of the following characters: depressed body; elytra black with basal border red; ocular channels very deep and narrow; lateral areas of head with deep and dense punctures in upper half and fine punctures in lower half; ventral carinae well developed; gular area near to neck carinate and with microsculpture as in ventral channels; aedeagal shape.

Redescription. Total body length 17.0 mm. Head, main part of elytra, and first to fourth visible abdominal segments black; antennae, maxillary and labial palps, pronotum, legs, thoracic sternum, scutellum, basal border of elytra, and fifth visible abdominal segment to apex red. Head: mesh microsculpture slightly visible; dorsal and ventral surface even, punctures not visible; ocular channels very deep, as narrow as first antennomere at its middle part or less; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; ventral channels deep, moderately wide ($1/3$ – $1/4$ width of cephalic half), with conspicuous wrinkled and reflecting microsculpture. Pronotum: microsculpture and punctures slightly visible; width of anterior margin more than 1.2 times that of posterior margin; midline visible on posterior third only. Elytron with one central seta on apical half. Legs with tibiae almost black. Aedeagus rounded (Fig. 8P); parameres symmetrical.

Variation. Total body length 12.4–19.1 mm (average 15.0 mm); two specimens with pronotum, scutellum and thoracic sternum almost black, probably damaged by conservators (may be colour variation); posterior corners of head form a very acute or right angle; ventral carinae well developed to reduced; elytron with row of two, three or four setae on posterior half.

Distribution. Sierra de Talamanca, including almost all Costa Rica and the northern part of Panama (first country record).

***Homalolinus rufus* sp. nov.**

Type series. *Holotype* male: MÉXICO, Oaxaca, carr. Oax-Tuxtépex, km 97, cerca de La Esperanza, BMM, 2036 m, N $17^{\circ}35'145$, W $96^{\circ}26'895$, ex troncos podridos, 16.xi.1999, J. Márquez col. (MZFC). *Paratypes*: Méxiqúe, *Homalolinus dilutus* Sharp, coll. et det. A. Fauvel (1, IRSNB); same data as holotype (1, MZFC; 1, FMNH; 1, SEMC); Oaxaca 32 mi S Valle Nacional, 7000 ft, 21.v.1971, Bright (1, CNC); Orizaba, *dilutus* Sharp (2, IRSNB); Veracruz, Calcahualco, Tecoaapa. 2–3.v.1992, alt. 2400 m, B. Mesófilo, en tronco, F. Capistrán & L. Delgado, cols. (1, CZUG).

Etymology. Refers to the red colour of the main part of the body, which, while not exclusive to this species, is conspicuous.

Diagnosis. It can be distinguished by the colour pattern (mainly red), body semidepressed, with four setae inside ocular channels, and posterior border with row of eight long setae.

Description. Total body length 21.2 mm. Body semidepressed. Head and neck black; antennae, base of mandibles, maxillary and labial palps, thorax, abdomen and legs red. Head: mesh microsculpture moderately visible; with some deep punctures in middle part of Y-shaped groove; ventral surface with similar punctuation as dorsal surface; ocular channels shallow, wider than first antennomere at its apex, with microsculpture as irregular lines; lateral areas with deep and dense, almost homogeneously distributed, punctures; ventral channels moderately deep, wide ($1/3$ – $1/2$ width of cephalic half), with wrinkled and reflecting microsculpture, not deflecting toward posterior corners; ventral posterior corners with a long seta. Neck 3–3.5 times narrower than head. Pronotum semidepressed; microsculpture and punctures as on head; width at anterior margin 1.1–1.2 times that of posterior margin; midline visible along almost entire length. Elytron with conspicuous mesh microsculpture; row of two setae, the first one on the central part and the second near to the posterior border. Aedeagus pear-shaped (Fig. 8R); parameres symmetrical.

Variation. Total body length 15.6–23.5 mm (average 19.5 mm); ocular channels slightly to moderately deep; lateral areas of head with punctuation dense on upper half and less dense on lower half, but not clearly defined as other species; ventral channels as wide as $1/2$ – $1/3$ width of cephalic half; ventral carinae of head slightly or not at all developed; elytron with row of two, three or five (one specimen only) setae on posterior half or on central part.

Distribution. Sierra de Juárez, Oaxaca, and Pico de Orizaba, Veracruz, México.

***Homalolinus sharpi* sp. nov.**

Type series. *Holotype* male: COSTA RICA, Puntarenas, Sta. Elena, Reserva Biológica Monteverde, BMM, 1500–1600 m, N $10^{\circ}18'997$, W $84^{\circ}48'513$, en tronco podrido, 19.ii.2000, J. L. Navarrete col. (MZFC). *Paratypes*: PANAMA, Chiriqui Prov., nr. Nueva California, W of Finca Palo Santo, 5.iii.1959, bark and scrapings from under bark, 4750 ft, H. S. Dybas (5, FMNH; 1, MZFC); same data, except 5000 ft, 10.iii.1959, in decayed wound on tree (1, FMNH); Chiriqui Prov. Finca Lerida, almost Boquete, alt. 5250 ft, 14.iii.1959, H. Dybas, under sawn tree slabs (1, FMNH; 1, MZFC); El Mirador, 6000 ft, Finca Collins, nr. Boquete 25.vi.1976, A. Newton & E. Vollrath collectors, under rotting bark (3, FMNH); 27.7 km W Volcan Hartmann's Finca 1450 m,

14.vi.1995, J. Ashe & R. Brooks ex: under bark (2, SEMC); 5.6 km N Boquete, La Culebra Trail, 1650 m, 15–19.vi.1996, J. Ashe, R. Brooks ex: flight intercept trap (1, SEMC); 12 km NE Santa Clara, Cerro Pando, 1850 m, 18.vi.1996, R. Anderson ex: oak forerster litter (1, SEMC); 3 km NE Santa Clara, 1450 m, 20.v.1995, R. Allen (1, SEMC); 6.4 km NW Boquete, 26.iv.1966, 1371 m, M. Neumann (1, SEMC); 6.0 km NE Boquete, 1550 m, 14–19.vi.1996, J. Ashe, R. Brooks ex: flight intercept trap (1, SEMC); Cerro Punta, 8000 ft, 18–24.vii.1961, J. M. Campbell (1, CNC); 1 km E Candelas, 1800 m, 7.vi.1977, H. & A. Howden (1, CNC); Hartmann Finca, 2 km N Sta Clara, 25.v.1977, S. Y. J. Peck, frass and litter with log bark (1, CNC); Potrerillos, Pan, 7.v.1934, Blackwelder Coll. (1, AMNH); Tolé, Panamá, Champion/BCA Col. I.2. (2, FMNH). COSTA RICA, Puntarenas, Las Alturas (Stanford. Biol. Sta.) c. 29 km NE San Vito, 25.v.1993, 1500 m. J. S. & A. K. Ashe (1, SEMC); Las Alturas Field Station, 20 km N San Vito de Hava, 8–12.iv.92, De Vries 1400 m Malaise trap (1, AMNH); as previous, except 26–30.iii.91 (1, AMNH); 35 km NE San Vito nr. Las Alturas, Rio Bella Vista, Road. to Gravel pit, 4300 ft, 22.iii.1991, L. Herman, dry leaf litter (1, AMNH); Est. Biol. Las Alturas, 1500 m, Coto Brus, Prov. Punt., Costa Rica, M. Zumbado, i.1992 (1, INBIO); as previous, except 1–21.iii.1992 (1, INBIO); as previous, except Aguilar, Greeney & Zumbado, vi.1991 (1, INBIO); as previous, except Aguilar, De Vries & Zumbado, iv.1991 (1, INBIO); as previous, except M. A. Zumbado, xii.1991 (1, INBIO); Buenos Aires, Pila, Sector Altamira, A. C. Amistad, Prov. Punta, 1150–1400 m, v.1994, R. Delgado (3, INBIO); as previous, except 1500 m 29–30.viii.1992, R. Delgado (1, INBIO); Finca Santa Marta, 2.1 km NE de Mellizas, Puntarenas, 1620 m, 1–8.v.1996, E Navarro (1, INBIO); Vara Blanca, 2000 m, viii.1938 (4, FMNH); Las nubes (coronado) 19.ii.1939 (1, FMNH); *Xantbolinus canaliculatus* Var. Irazu, 6–7000 ft, Rogers, sp. figured, Irazu, Costa Rica, Rogers (1, FMNH); P. Biolley (1, FMNH); F. Nevermann, Vara Blanca, 1700 m, 7.viii.1928, unter loser Rinde (3, FMNH); Cartago: Costa Rica, Tapanti Rio Grande de Orosi, 15.vii.1987, 1500 m, A. Solis (1, FMNH); as previous, except 1350 m 9°43'55" N, 83°46'45" E, 17–20.vii.2000. J. S. Ashe, R. Brooks, Z. Falin. CR1ABFOO 193 ex: flight intercept trap (2, SEMC); San José Zurquí de Moravia, 1600 m, 1–3.viii.1995, P. Hanson ex: malaise trap (1, SEMC); as previous, except ii.1993 (1, SEMC); as previous, except iv.1992 (1, SEMC); as previous, except iv.1994 (1, SEMC); as previous, except iv–v.1993 (1, MZFC); Heredia Prov., 11 km N Barva, 6000 ft, 15.iii.1991, L. Herman (1, AMNH); Est. Zurquí, 1600 m. P. N. Braulio Carrillo, 500 m antes del Tunel, Prov. S. José, Costa Rica, G. Mora, vi.1991 (1, INBIO); Rio Sn Lorencito, 900 m Res. For. Sn Ramon, 5 km N Col. Palmarena, Alajuela, iii.1990 (1, INBIO); Puntarenas Monte Verde, Campbell's

Woods, 6.v.1989, 1550 m, J. Ashe, R. Leschen, R. Brooks ex: under bark (1, SEMC); as previous, except 1540 m, 9.v.1989 (2, SEMC); as previous, except 30 v.1992, M. Jameson ex: in flight nt. a freshly downed tree (1, SEMC); Monte Verde, 1520 m, 12.v.1989, J. Ashe, R. Brooks, R. Leschen ex., under bark, wood (1, SEMC); as previous, except 1550 m, 16–20.v.1989, R. Timm (1, SEMC); as previous, except nr. Quebrada cuecha on sendero Rio, 1580 m, 13.v.1989 J. Ashe, R. Brooks, R. Leschen (1, SEMC); as previous, except 20–30.v.1993, Paul Bardunias (1, MZFC); 5000 ft, Reserva de Monteverde, 27–29.v.1979, J. M. and B. A. Campbell (1, CNC); Monteverde, 1300 m, 17–20.v.1985, J. Powell coll. (1, CISC); Estación La Casona, R. B. Monteverde, vi.1991, N. Obando (1, MZFC); as previous, except ix.1990 (1, INBIO); as previous, except ix.1992 (1, MZFC); as previous, except xii.1992 (1, INBIO); as previous, except i.1994 (1, INBIO); as previous, except ix.1993 (1, INBIO); Tablazo 1700 m, La Urica 1100 m (1, IRSNB); Estac. Cacao, 1000–1400 m SW side Volcan Cacao Guanac. Pr. Costa Rica, xi–xii.1989, R. Blanco & C. Chavez (3, INBIO; 1, MZFC); as previous, except ix.1989 (1, INBIO); Cacao Biological Station, 1050 m, 11.vii.2000, J. S. Ashe, R. Brooks, Z. Falin ex: under bark (2, SEMC).

Etymology. Dedicated to David Sharp, author of *Homalolinus* and of a large number of Central American staphylinids.

Diagnosis. Colour pattern similar to *H. canaliculatus*; ocular channels very deep and narrow; lateral areas of head with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep and wide; ventral carinae well developed; gular area near to neck carinate and with microsculpture as on ventral channels; large aedeagus.

Description. Total body length 20.0 mm. Head, thorax, first to fourth visible abdominal segments and legs shiny black; antennae (except first segment), maxillary and labial palps, tarsal segment and fifth visible abdominal segment to apex red. Head: fine, sparse punctures in dorsal and ventral surface; ocular channels very deep, as narrow as first antennomere at its middle part; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep, wide (1/3–1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture. Pronotum: microsculpture and punctures slightly visible; width of anterior margin 1.1–1.2 times that of posterior margin; midline visible along of central part only. Elytron with row of two setae, the first one near to posterior border and the second one on central part. Aedeagus rounded (Fig. 8V); parameres symmetrical.

Variation. Total body length 12.6–21.0 mm (average 16.7 mm); posterior corners of head form a right to very acute angle;

ventral channels less than 1/4 to more than 1/3 as wide as cephalic half; midline of pronotum visible along almost entire length or less; elytron with row of two, three or four setae on posterior half.

Distribution. Costa Rica and Panama.

***Homalolinus tripunctatus* Bierig**

Homalolinus tripunctatus Bierig, 1934: 15

Type material. *Holotype* female: Volkán Chiriqui, vii.1930. PANAMÁ. Typus (green label), Field Mus. Nat. Hist. 1966, A. Bierig Colln. Acc. Z-13812/H. *3-punctatus* Brg. (FMNH).

Diagnosis. First to fourth visible abdominal segments black, fifth to apex red; ocular channels very deep and narrow; lateral areas of head with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep and too wide; ventral carinae well developed; gular area near to neck carinate and with microsculpture, as on ventral channels.

Redescription. Total body length 20.2 mm. Head, pronotum and first to fourth visible abdominal segments black; legs red-brown; ventral-posterior border of head, elytra, tarsal segment, and fifth visible abdominal segment to apex red. Head: no microsculpture and punctures visible; ocular channels very deep, as narrow as first antennomere at its middle part or less; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep, many wide (1/3–1/2 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture on posterior half only. Pronotum: microsculpture, punctures and midline slightly visible; width of anterior margin more than 1.2 times that of posterior margin. Scutellum black, contrasting with the red elytra. Elytron with row of three setae on central part of posterior half. Male unknown.

Variation. Unknown.

Remarks. The species was described by Bierig (1934); the only difference from his description is the length (20.2 mm).

Distribution. ‘Chiriqui’ volcano, Panama.

The remaining 18 species (listed in alphabetic order) previously considered as *Ebomalolinus* share the following characters (not synapomorphies because they are not present in all species; the exceptions are indicated in each description): oval-depressed body; antennae reach first third of pronotum when directed behind; length of second antennomere 0.6–0.8 times that of third; labrum not convex at apex, each half with two long setae and 7–8 short setae; length of maxillary palpal

segments 2, 3 and 4 combined more than 0.8 times that of first antennomere; ocular channels extend ventrally from eye only, with four setae distributed as in Fig. 6I; posterior corners of head form an obtuse angle; posterior border of head with row of eight long setae; ventral channels not deflected toward posterior corners; no ventral carinae on head; gular area near to neck normal; ventral posterior corners of head with a long seta; neck 3–3.5 times narrower than head; width of anterior margin of pronotum 1.1–1.2 times that of posterior margin, with fine, sparse punctures and mesh microsculpture.

***Homalolinus apicalis* Sharp**

Homalolinus apicalis Sharp, 1885: 474

Type material. *Lectotype* male: *Homalolinus apicalis*. *Type*: D. S. Juquila México Sallé/*Type*/Juquila México/México Sallé/BCA Col. I.2. *Homalolinus apicalis* Sharp, Sharp Coll.1905–313. *Syntype*/*Lectotype* *Homalolinus apicalis* Sharp, 1885 J. Márquez Des. 2001 (BMNH). *Paralectotype* female: *Homalolinus apicalis*. *Type*: D. S. Juquila. México. Sallé (in the plaque with the specimen)/*Sp. figured*/Juquila/México. Salle Coll/BCA Col. 2. *Homalolinus apicalis*, Sharp/111/*Syntype*/*Paralectotype* *Homalolinus apicalis* Sharp, 1885 J. Márquez Des. 2001 (1, BMNH).

Material examined. MÉXICO, Oaxaca, 17.6 km S. Sola de Vega, 14.vii.1979, J. S. Ashe (2, FMNH); km 164.5 carr. Oax-Pto. Escondido L. Delgado col. (2, CZUG; 1, MZFC); as previous, plus 1–2.viii.1991, Col. J. L. Navarrete, G. A. Quiroz, L. Delgado (6, CZUG; 1, MZFC); 76.1 km S Sola de Vega, 15.vii.1979, J. S. Ashe (1, SEMC); 17.6 km S. Sola de Vega, 14.vii.1979, J. S. (1, SEMC); 17 km antes de Juquila. Carr. Oax-Pto. Escondido, 17.xi.1999, J. Márquez col. (4, MZFC); 15 mi N San Gabriel Mixtepec, 11.vii.1987, Kovarik (1, FMNH); Portillo del Rayo, 4.vi.1987, L. Cervantes (2, CNIN); as previous, except 1.xi.1987, E. Barrera, R. Barba, F. Arias (2, CNIN); Morelos, Mexicapa, vii.1993, col. C. Cabello (1, MZFC); Cuernavaca, Mexicapan, 27.vii.1992, A. Pérez (1, CZUG); 4 mi W Mazamitla, Jalisco, Mex., 16.ix.1950, Ray F. Smith (1, AMNH).

Diagnosis. Can be identified by the colour pattern; oval-depressed body; lateral areas of head with deep and dense, almost homogeneously distributed, punctures; and ventral posterior corners of head without a long seta.

Redescription. Total body length 16.5 mm. Head, neck, fifth visible abdominal segment and basal third of sixth black; antennae, maxillary and labial palps, thorax, legs, first to fourth visible abdominal segments and apical 2/3 of sixth red-yellow. Head: no microsculpture visible; dorsally with fine, sparse punctures, and wide punctures in middle part of

Y-shaped groove, inside and behind ocular channels; ventral punctures less visible than dorsal ones; length of eyes less than 1/4 lateral length of head; ocular channels moderately deep, as wide as first antennomere at its middle part; lateral area with deep and dense, almost homogeneously distributed, punctures; ventral channels moderately deep, moderately wide (almost 1/3 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; ventral posterior corners without a long seta; head almost as wide as pronotum. Pronotum: midline visible near to posterior border only. Elytron with fine, sparse punctures; with row of seven setae on medial part. Aedeagus pear-shaped (Fig. 7H); parameres asymmetrical.

Variation. Total body length 14.0–18.9 mm (average 16.5 mm); ocular channels as wide as first antennomere at its apex or lightly less; elytron with row of 5–6 setae on medial part. Three specimens that are not from Oaxaca, México, have important variations and probably are a different species, but males from these localities are unknown and I am not sure if the variations correspond to a different aedeagal shape. These variations are: ventral posterior corners of head with a long seta; denser puncturing of middle part of head, behind ocular channels and on lateral areas; sixth visible abdominal segment black at apical half or more. *Homalolinus apicalis* from Oaxaca does not have a long seta near to each ventral posterior corner of head; puncturing of middle part of head is less dense and sixth visible abdominal segment is black on apical third only.

Remarks. Lectotype and paralectotypes were designated because this species can be confused with *H. apiciventris* sp. nov. and *H. asiainae* sp. nov.

Distribution. México, particularly from western Oaxaca, Morelos and Jalisco, although these last records require confirmation.

***Homalolinus apiciventris* sp. nov.**

Type series. *Holotype* male: PANAMA, Chiriquí, El Mirador, 6000 ft, Finca Collins, nr. Boquete, 25.vi.1976, under rotting bark, A. Newton & E. Vollrath (FMNH). *Paratypes*: PANAMA, Chiriquí, El Mirador, 6000 ft, Finca Collins, nr Boquete 25.vi.1976, A. Newton and E. Vollrath collectors, under rotting bark (1, FMNH); same data as holotype (1, FMNH); Finca Lerida nr. Boquete, 5650 ft, 14.iii.1959, leg. G. A. Solem (1, FMNH); Chiriquí Prov. Cerro Punta 6700 ft, 7.iii.1959, leg. G. Solem (1, MZFC); Chiriquí Prov. 6 mi WNW Boquete 2500 m, 17.11.1980, under log, El Mirador (1, CNC); Cerro Punta, 8000 ft, 18–24.vii.1961, J. M. Campbell (1, MZFC); 3.5 km NE Santa Clara, Hartmann's Finca, 08°52' N, 82°44' W, 1475 m, 23.v.1995, A. Gil-

logly (1, SEMC); 1 km N Jurutumgo 20.vi.1994, 1900 m, A. R. Gillogly (1, SEMC). COSTA RICA, Est. Casa Coca, 800 m S del Cerro Frantzius, A. C. Amistad, Prov. Punta, 1950 m, xii.1994, J. F. Quesada (1, INBIO; 1, MZFC); Copey, 1800 m, 21–22.iv.1943 (1, FMNH); San Jose, Pan American Hwy. km 80.5, 9 km SSW Albergue de Montaña Savegre Upper Quebrada-Las Robles Trails, 9°32'56" N, 83°48'9" W, 2200–2300 m, 23.vii.2000, J. S. Ashe, R. Brooks, Z. Falin. CR1ABFOO 234 ex: under bark (1, SEMC); 7 km SSW, Cabinas de Quetzal. 9°33'53" N, 83°48'5" W, 2150 m, 22.vii.2000. 218 (2, SEMC).

Etymology. Refers to the contrasting black and red coloration of abdominal segments.

Diagnosis. Fifth and sixth visible abdominal segments black (except by posterior border of the last), remaining abdominal segments red; ocular channels moderately deep and wide; lateral areas of head with deep and very dense, almost homogeneously distributed, punctures; ventral channels moderately deep and wide; ventral posterior corners of head with a long seta; aedeagal shape.

Description. Total body length 16.8 mm. Head, neck, fifth and sixth visible abdominal segments (except posterior border of the last) black; pronotum and legs brown; antennae, maxillary and labial palps, elytra, first to fourth visible abdominal segments and posterior border of sixth to apex red. Head: mesh microsculpture slightly visible; with fine, sparse punctures combined with very conspicuous wide punctures in entire dorsal surface; ventral surface with punctation lightly less conspicuous than dorsal surface; length of eyes less than 1/4 that of lateral length of head; ocular channels moderately deep, as wide as first antennomere at its apex or more; lateral areas with deep and very dense, almost homogeneously distributed, punctures; ventral channels moderately deep, wide (1/4–1/3 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; width of head 1.2 times that of the pronotum. Pronotum: conspicuous mesh microsculpture; width of anterior margin less than 1.1 times that of posterior margin; midline visible along posterior half. Elytron with few sparse punctures; with row of nine setae on central part. Aedeagus pear-shaped (Fig. 7I); parameres asymmetrical.

Variation. Total body length 12.5–16.2 mm (average 14.4 mm); wide punctures in head dense to sparse; ventral channels deep to moderately deep, and slightly wider than 1/3 width of cephalic half; punctures in elytra more visible than holotype; fifth visible abdominal segment with the basal border dark-brown to black, sixth with apical border red or black.

Distribution. The Chiriqui volcanic region, at the border between Costa Rica and Panama.

***Homalolinus asiainae* sp. nov.**

Type series. Holotype male: MÉXICO, Morelos, Santo Domingo Ocotitlán, bosque de pino-encino, 2143 m, 10.xii.2000, en tronco de encino podrido, J. Asiain y J. Márquez cols. (MZFC). *Paratypes*: same data as holotype (4, MZFC); MÉXICO, Veracruz, Est. Biól. Los Tuxtles, 20.ix.1989, A. López (1, CNIN); Morelos, Tlayacapan, San José de los Laureles, ex detritos de *A. mexicana*, 19.vii.1991, J. L. N. col. (1, MZFC); as previous, except ex tronco caído, 20.xii.1994, J. Márquez col. (1, MZFC); as previous, except 1800 m ex corteza de *Quercus* caído, 3.xi.1999, J. Asiain & J. Márquez cols. (1, MZFC); as previous, except 23.xi.1991, col. J. L. Navarrete & G. A. Quiroz, ex tronco (1, CZUG); as previous, except 27.x.1990 (1, CZUG); Real de Arriba, vii.1932, 6300 ft, México D. F., H. E. Hinsiden Coll. (1, AMNH); Sierra de Manantlán, Jalisco, 1800–1900 m, 18.vii.1985, J. Doyen (2, CISC); Jalisco, San Gabriel, 31.x.1996, J. Zepeda Col., La Calle, Nevado Colima, bosque pino, directa, 16 h (1, IMECBIO); Jalisco, Autlán, Puerto Los Mazos. BMM, 1623 m, N 19°4'1", W 104°23'9", en corteza, 13.ix.1999, J. L. Navarrete col. (3, CZUG); Jalisco, 10 mi W Atenquique, 18.ix.1971, 6700 ft, under bark, A. Newton (1, FMNH); Sierra de Manantlán, 12.xi.1989, E. García col. alt. 1300 m (1, IMECBIO).

Etymology. Dedicated to Julieta Asiain (Centro de Investigaciones Biológicas, UAEH), for her help and collaboration in this project, her assistance in the field, and her interest in the study of staphylinids.

Diagnosis. This species can be distinguished by the red body colour, with exception of the head, in combination with the oval-depressed body.

Description. Total body length 15.6 mm. Head and neck black; antennae, maxillary and labial palps, thorax and abdomen red. Head: no microsculpture visible; dorsally with fine, sparse punctures, and wide punctures in middle part of Y-shaped groove, inside and behind ocular channels; ventral surface with punctures less visible than dorsal surface; length of eyes more than 1/4 lateral length of head; ocular channels deep, as wide as first antennomere at its middle part; lateral area with deep and dense, almost homogeneously distributed, punctures; ventral channels deep, narrow (1/4 or less width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; ventral posterior corners without a long seta; width of head 1.2 times or more that of the pronotum. Pronotum: midline visible along posterior third. Elytron with fine, conspicuous punctures; with row of nine setae on

central part. Aedeagus pear-shaped (Fig. 7J), parameres symmetrical.

Variation. Total body length 13.0–17.5 mm (average: 15.0 mm); lateral areas of head with moderate to very dense, deep punctures; one specimen with a long seta near to ventral posterior left corner, but not in right corner.

Distribution. Transmexican Volcanic Belt, México.

***Homalolinus brevipennis* sp. nov.**

Type series. Holotype male: COSTA RICA, San Jose, Pan American Hwy, 70 km Mirador El Quetzal, 2650 m, 9°38'37" N, 83°51'2" W, 20.vii.2000, J. S. Ashe, R. Brooks, Z. Falin. CR1ABFOO 198 ex: under logs (SEMC). *Paratypes*: same data as holotype (1, SEMC); same data as holotype, except 80.5 km, 9 km SSW Albergue de Montaña Savegre Upper, Quebrada-Las Robles Trails, 9°32'56" N, 83°48'9" W, 2200–2300 m, 23.vii.2000. 234 ex: under bark (1, MZFC); 1, SEMC); 7 km SE El Cañon, Cartago Prov. 2500 m, 28.v.1985, ex: vegetation. J. Doyen coll. (1, CISC).

Etymology. Refers to the most conspicuous and unique characteristic of this species, its very short elytra.

Diagnosis. Abdomen dark (except for the last red segment); ocular channels shallow (almost superficial) and wider than first antennomere at its apex; lateral borders not forming clear flat areas as in other species; elytra shorter than pronotum (almost 3/4 length of latter); pronotum almost as long as head.

Description. Total body length 17.8 mm. Head, neck, pronotum and abdomen (except the last visible segment) dark; antennae, maxillary and labial palps, elytra, sterna of thorax, last visible abdominal segment and legs red. Head: mesh microsculpture visible; dorsally and ventrally with fine, sparse punctures; length of eyes less than 1/4 that of lateral length of head; ocular channels shallow (almost superficial), wider than first antennomere at its apex; lateral borders not forming clear flat areas as in other species, with deep punctures moderately dense on upper half and fine punctures in lower half; ventral channels moderately deep, narrow (almost 1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; gular area near to neck with a fine fold, without different microsculpture; ventral posterior corners without a long seta; width of head 1.2 times or more that of pronotum. Pronotum even; width of anterior margin less than 1.1 times that of posterior margin; midline visible along entire length. Elytra shorter than pronotum (almost 3/4 length; pronotum almost as long as head); with fine, sparse punctures, but conspicuous; elytron with row of four setae on

central part heterogeneously distributed. Aedeagus pear-shaped (Fig. 7L); parameres asymmetrical.

Variation. Total body length 17.8–19.6 mm (average 18.8 mm). Head and abdomen darker than remainder of body; posterior border of head with row of 8–10 long setae; elytron with row of 4–5 setae on central part.

Distribution. Central mountains of Costa Rica.

***Homalolinus confusus* sp. nov.**

Type series. *Holotype* female: MÉXICO, Chiapas, Reserva El Triunfo. 9.vii.1993 S. Zaragoza (CNIN).

Etymology. Refers to its superficial similarity to other species.

Diagnosis. It can be distinguished by the black body (except fifth to last visible abdominal segments); body oval-depressed; ocular channels shallow and very wide; lateral areas of head with deep and dense punctures in upper half and fine punctures in lower half.

Description. Total body length 20.2 mm. Head, thorax, first to fourth visible abdominal segments and legs black; antennae (except first antennomere), maxillary and labial palps, tarsal segments and fifth visible abdominal segment to apex red. Head: mesh microsculpture little visible; dorsally with fine, sparse punctures, with wide punctures in middle part of Y-shaped groove and behind ocular channels; ventral surface with some wide punctures around and inside ventral channels; length of eyes less than 1/4 that of lateral length of head; ocular channels shallow, as wide as first antennomere at its apex or more; lateral areas with deep and dense punctures in upper half and fine punctures in lower half, but not strongly noticeable as in other species; ventral channels shallow, very narrow (1/4 or less width of cephalic half), with wrinkled and reflecting microsculpture; width of head 1.2 times or more that of pronotum. Pronotum: midline visible near to posterior border only; width of anterior margin less than 1.1 times that of posterior margin. Elytron with conspicuous, sparse punctures; with row of six setae on medial part. Male unknown.

Variation. Unknown.

Distribution. Only known from the Biological Reserve ‘El Triunfo’, Chiapas, México.

***Homalolinus difficilis* sp. nov.**

Type series. *Holotype* male: Est. Pittier, Prov. Punta. COSTA RICA. 1670 m, 22–28.vi.1995. A. Picado, LS 330900–577400 # 5898 (INBIO). *Paratypes:* PANAMA, Chiriquí Prov., Finca Lerida nr. Boquete, alt. 5600 ft, 12.iii.1959,

H. Dybas (1, MZFC); 19 km NW Boquete 2.x.1975, D. S. Chandler under bark (1, FMNH). COSTA RICA, Est. Biol. Las Alturas, 1500 m, Coto Brus, Prov. Puntarenas, F. Araya, 23.iii.1992, L-S 322500, 591300 (1, MZFC); Copey, 1800 m, 21–22.iv.1943 (1, FMNH).

Etymology. Refers to the difficulty in identifying this species, due to the variation in elytral coloration and its similarity to other species.

Diagnosis. Fifth visible abdominal segment and anterior 2/3 of sixth black, remainder of abdominal segments red; ocular channels shallow and as wide as first antennomere at its apex or slightly more; lateral areas of head with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep and narrow; ventral posterior corners of head with a long seta; aedeagal shape.

Description. Total body length 14.3 mm. Head, main part of elytra, fifth visible abdominal segment and apical 2/3 of sixth segment black; antennae, maxillary and labial palps, pronotum, scutellum, anterior borders of elytra, thoracic sternae, legs, first to fourth visible abdominal segments and basal third of sixth segment red. Head: mesh microsculpture slightly visible; dorsally with fine, sparse punctures, and wide punctures in middle part of Y-shaped groove, inside and behind ocular channels; ventral punctures less visible than dorsal punctures; length of eyes less than 1/4 that of lateral length of head; ocular channels shallow, as wide as first antennomere at its apex or slightly more, with some punctures inside them; lateral area with deep and dense punctures in upper half and fine punctures in lower half (not as clear as in other species); ventral channels moderately deep, narrow (1/4 or less width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; width of head 1.2 times or more that of pronotum. Pronotum: notable mesh microsculpture; midline visible near to posterior border only. Elytron with fine, sparse punctures; with row of six setae on medial part. Aedeagus pear-shaped (Fig. 7P); parameres asymmetrical.

Variation. Total body length 12.4–14.5 mm (average 13.4 mm); two of four observed specimens have completely red elytra, perhaps not teneral; due to red coloration was initially misidentified as another species, but other characters, including the aedeagus (Fig. 7P,Q), distinguish it.

Distribution. The Chiriquí volcanic region, on the border between Costa Rica and Panama.

***Homalolinus divisus* (Erichson) (Fig. 1B)**

Xantholinus divisus Erichson, 1839: 308

Homalolinus divisus; Sharp, 1885: 474

Homalolinus divisus var. *guatemalensis* Sharp, 1885: 474, syn. nov.
Ebomalolinus divisus; Bierig, 1934: 17

Type material. *Homalolinus divisus*: *Holotype* (sex not identified): (red label)/Sharp Coll. ex Chevrolat. BM 1905–313 (BMNH). *Homalolinus divisus* var. *guatemalensis*. *Syntypes* (sex not identified): *H. divisus* var. *guatemalensis* immature, D. S. Balheu. Guatemala. Champion (in the plaque with the specimen)/BCA Col. I.2. *Homalolinus divisus* Er. vs. *guatemalensis*, Sh./Syntype (1, BMNH); *Xantholinus divisus* var. *guatemalensis* D. S. Balheu. Guatemala. Champion (in the plaque with the specimen)/Balheu, Vera Paz. Champion/BCA Col. I.2. *Homalolinus divisus* Er. vs. *guatemalensis*, Sh./Sharp Coll. 1905–313/Syntype (1, BMNH); as previous, but without the last label (1, BMNH); *Homalolinus divisus* var. *guatemalensis* San Jerónimo. Champion/S. Jerónimo, Guatemala. Champion/BCA Col. I.2. *Homalolinus divisus* Er. vs. *guatemalensis*, Sh./Syntype (1, BMNH).

Material examined. COSTA RICA, Carpintera (1, FMNH); Res. For. Sn Ramón, Alajuela, iii.1990 (1, MZFC); Estac. Pitilla, 9 km S Santa Cecilia, Guanacaste (2, INBIO; 1, MZFC). HONDURAS, Rancho: La Unión (14 km N), P.N. La Muralla (1, FMNH); Lempira 13.1 km NE & 7.3 km E Gracias, Mt. Puca (2, SEMC). GUATEMALA, El Progreso (1, MZFC); Zacapa, Arriba La Unión (1, CAUVG); San Lorenzo, Sierra de Las Minas (3, CNC); Baja Verapaz, 7.6 km W Chilascó (3, SEMC); Sta. Rosa Guazacapan (1, CAUVG); Guatemala (1, IRSNB). MÉXICO, Chiapas, 6.6 mi W El Bosque (1, FMNH); Parque Laguna Bélgica, 19.3 km N Ocozacoatlá (1, SEMC); 5 mi SW El Bosque, 6.vii.1969 (4, CNC); Reserva El Ocote (1, CNIN); Oaxaca: 18.7 km W Rizo de Oro (1, FMNH); NW of Santa Maria Nizaviguetti (1, FMNH); Oaxaca, 1.3 km N Ejunta (1, FMNH); Veracruz: Dos Amates (1, CZUG); Córdoba, camino a Plan de Ayala, Loma Chica (3, MZFC); Veracruz, Córdoba, Ojo de Agua (1, MZFC); Córdoba, Guadalupe del Barreal (1, IEXA); Córdoba, Miguel Aguilar (1, IEXA); Córdoba (2, FMNH); Fortín de las Flores, Cañon Río Metlac (4, CNC; 3, FMNH; 2, MZFC; 1, CISC); Veracruz, Huatusco (5, MZFC; 5, FMNH; 3, SEMC; 2, CISC); Totutla, Mata Oscura, 1 km S Zacuapam (16, MZFC); Jalapa (7, SEMC; 4, AMNH; 3, BMNH; 4, FMNH); Xalapa, La Herradura (19, MZFC); Coatepec, La Pitaya (6, MZFC); Veracruz, Teocelo (2, FMNH; 1, CZUG); Tlapacoyan, Ver. (1, CNIN); Veracruz, 4 km N Jilotepec (1, CISC); Naolinco, Veracruz (1, CNIN); Puebla: 4.7 mi SW La Cumbre (1, FMNH); Villa Juárez, Pue. (1, CNIN); Hidalgo: Tlanchinol (2, MZFC); Querétaro: 16 mi E Landa de Matamoros (7, FMNH); Querétaro, Parada Santa Martha, 51 km E Jalpan (1, SEMC); Guanajuato: Victoria, Puerto de Palmas (5, IEXA; 1, MZFC); Tamaulipas: Gómez Farias, Rancho del Cielo (1, CNC; 1,

CZUG); Tamaulipas, Hierbabuena (1, AMNH); México (2, BMNH; 5, FMNH; 3, IRSNB).

Diagnosis. This species can be identified by the colour pattern and oval-depressed body, the scutellum red as elytra, the ocular channels moderately deep, lateral areas of head with punctures homogeneously distributed, ventral channels moderately deep and narrow, and ventral posterior corners of head with a long seta.

Redescription. Total body length 15.4 mm. Antennae, maxillary and labial palpi, and prosternum red-brown; elytra, scutellum, mesosternum, metasternum, legs, basal third of sixth visible abdominal segment to apex red; head, neck, pronotum, first to fourth visible abdominal segments and apical part of fifth segment black. Head: mesh microsculpture; with fine, sparse punctures in dorsal and ventral surface; with some wide punctures inside and mainly behind ocular channels; eyes more than 1/4 lateral length of head; ocular channels moderately deep, as narrow as first antennomere at its base; lateral area with deep and dense, almost homogeneously distributed, punctures; ventral channels moderately deep, narrow (1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; head as wide as pronotum. Neck 2–2.9 times narrower than head. Pronotum: mesh microsculpture clearly visible; midline visible near to posterior border only. Elytron with sparse punctures moderately visible; with row of six (right) and seven (left) setae on central part. Aedeagus pear-shaped (Fig. 8A); parameres asymmetrical.

Variation. Total body length 11.7–17.7 mm (average 15.1 mm); some specimens with ocular channels variably wide, and more deep; lateral areas rarely with sparse punctures. Some specimens from north and north-west Sierra Madre Oriental, México (states of Guanajuato and Querétaro) have the fifth visible abdominal segment completely black, but this segment has a common variation of apical 1/3, 1/2 or 2/3 black and remainder red. *Homalolinus divisus* var. *guatemalensis* is discussed below.

Remarks. *Homalolinus divisus* var. *guatemalensis* proposed by Sharp (1885) can be considered as a synonym of typical *H. divisus* from México, in spite of some minor differences in shape and size of the aedeagus between Mexican (Fig. 8A,B), Guatemalan (Fig. 8C) and Honduran specimens (Fig. 8D). All specimens from Costa Rica are female. No other morphological differences were observed that correspond with the aedeagal shape and persuaded me to consider them as a different species. It is necessary to review more specimens from Guatemala, Honduras and Costa Rica. *H. divisus* should thus be considered problematic.

Distribution. México, principally in the south-east and mountains of the Sierra Madre Oriental and, for the first time, from Guatemala, Honduras and Costa Rica.

***Homalolinus gracilis* sp. nov.**

Type series. *Holotype* male: COSTA RICA, San José, Zurquí de Moravia, 1600 m, ix.1993, P. Hanson, ex: malaise (SEMC).

Paratypes: same data as holotype, except vi.1992 (1, SEMC); 1–31.i.1995 (1, SEMC); 10°3'0" N, 84°1'0" W 1–30.ix.1995 (1, MZFC); COSTA RICA, La Palma. 1600 m (2, IRSNB); Torito (Turrialba) 13–16.ii.1939 (1, FMNH); Guanacaste, Cacao Biological Station, 10°56' N, 85°27' W, 1000 m, 4.v.1995, J. S. Ashe (1, SEMC); Estac. Cacao, 1000–1400 m, SW side Volcan Cacao, Guanac. Pr. ix.1989 R. Blanco & C. Chavez (1, MZFC) xi–xii.1989 (2, INBIO) ix.1989 (1, INBIO); Estac. Mengo, 1100 m, SW side Volcano Cacao, Guanac. Pr. ii.1989, GNP Biodiversity Survey, W 85°28'10" (1, INBIO).

Etymology. Refers to its small size.

Diagnosis. This species can be distinguished by the colour pattern, oval-depressed body, and small size.

Description. Total body length 13.7 mm. Head, main part of elytra, first to fourth visible abdominal segments and basal half of fifth segment black; antennae, maxillary and labial palps, pronotum, scutellum, anterior border of elytra, thoracic sternae, legs, apical half of fifth visible abdominal segment to apex red. Head: dorsal surface even, punctures and microsculpture slightly visible; with some wide punctures inside and behind ocular channels; ventral punctures slightly more visible than dorsal punctures; length of eyes 1/4 that of lateral length of head; ocular channels shallow, as wide as first antennomere at its apex; lateral area with deep and moderately dense, almost homogeneously distributed, punctures; ventral channels deep, narrow (1/4 or less width of cephalic half), with conspicuous wrinkled and reflecting microsculpture, and some lateral wide punctures; head as wide as pronotum. Pronotum: midline visible near to posterior border only. Elytron shiny, with fine, sparse punctures; with row of seven setae on central part. Posterior legs darker than anterior and middle legs. Aedeagus pear-shaped (Fig. 8F), parameres asymmetrical.

Variation. Total body length 11.8–13.8 mm (average 13.15 mm); with variable density of punctures around ocular channels; lateral areas of head with punctures dense to moderate; setae 2 and 3 of each ocular channel can be closer than in Fig. 6T; legs dark or red; first antennomere may be darker red than next.

Distribution. Mountains of central and northern Costa Rica.

***Homalolinus guerreroensis* sp. nov.**

Type series. *Holotype* male: MÉXICO, Guerrero 71 km NE Atoyac de Alvarez, 26.vii.1992, 1700 m, J. S. Ashe, H. Frania # 126 ex: misc. collecting (SEMC). *Paratypes:* same data as holotype (2, SEMC; 1, MZFC); same data as holotype, except 25.vii.1992, # 120 ex: under bark (1, SEMC).

Etymology. Refers to Guerrero, the state in México where this species was collected.

Diagnosis. Body oval-depressed; fifth visible abdominal segment, basal half red and apical half black; ocular channels deep and as wide as the first antennomere at its middle part; lateral areas of head with deep and dense, almost homogeneously distributed, punctures; ventral channels moderately deep and narrow; ventral posterior corners of head with a long seta; elytron with row of 10 setae on central part; aedeagal shape.

Description. Total body length 17.3 mm. Head, neck, first to fourth visible abdominal segments and basal half of fifth segment black; antennae brown; maxillary and labial palps, thorax, legs, apical half of fifth visible abdominal segment to apex red. Head: no microsculpture; dorsally with fine, sparse punctures, and wide punctures in middle part of Y-shaped groove, inside and behind ocular channels; ventral punctures less visible than dorsal ones; length of eyes 1/4 that of lateral length of head; ocular channels deep, as wide as first antennomere at its middle part or slightly more; lateral area with deep and dense, almost homogeneously distributed, punctures; ventral channels moderately deep, narrow (1/4–1/3 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; width of head 1.2 times or more that of the pronotum. Pronotum: notable mesh microsculpture; midline visible near to posterior border only. Elytron with fine, sparse punctures; with row of 10 setae on central part. Aedeagus pear-shaped (Fig. 8H); parameres symmetrical.

Variation. Total body length 14.4–16.6 mm (average 15.8 mm); antennae red or brown; wide punctures in dorsal surface of head can be more conspicuous; ocular channels as wide as the first antennomere at its middle part or slightly less; elytron with row of eight, nine or 10 setae on central part.

Distribution. Known only from mountains in Guerrero, México.

***Homalolinus minensis* sp. nov.**

Type series. *Holotype* male: GUATEMALA, Zacapa, Rio Hondo, Arriba Jones, 17.iv.1992, H. Castañeda (CAUVG).

Paratypes: GUATEMALA, Dpto. Zacapa 8 km NE San Lorenzo, Sierra de Las Minas, 2100 m, 18.vii.1986, J. M. Campbell (1, CNC); 7.vii.1986, J. M. Campbell (2, CNC); 1, MZFC); Zacapa Department, Santa Clara, 5500 ft, 8.viii.1948, loose bark, R. D. Mitchell (1, FMNH); El Progreso, Cerro Pinalón, arriba de Los Albores, 25.ii.1990, J. Monzón, C. Granizo (1, CAUVG; 1, MZFC).

Etymology. Refers to its known distribution, several localities of Sierra de Las Minas, Guatemala.

Diagnosis. Colour pattern similar to *H. divisus*, but with black scutellum; ocular channels shallow and as wide as first antennomere at its apex; lateral areas of head with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep and narrow (1/3–1/4 width of cephalic half); aedeagal shape.

Description. Total body length 18.4 mm. Head, pronotum, scutellum, first to fourth visible abdominal segments and basal 2/3 of fifth segment black; antennae (except first antennomere), maxillary and labial palps, tarsal segments, elytra and 1/3 apical of fifth visible abdominal segment to apex red; legs with coxae black and remaining segments red-brown. Head: visible mesh microsculpture; dorsally with fine, sparse punctures, wide punctures conspicuous in middle part of Y-shaped groove, inside and behind ocular channels; ventral surface with some wide punctures near to ventral channels; length of eyes less than 1/4 that of lateral length of head; ocular channels shallow, as wide as first antennomere at its apex, with wavy lines inside them; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep, narrow (1/3–1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; width of head 1.2 times or more that of pronotum. Pronotum: midline visible at central and posterior part; width of anterior margin less than 1.1 times that of posterior margin. Scutellum black, contrasting with the red elytra. Elytron with punctures moderately visible; with row of six setae on central part. Aedeagus pear-shaped (Fig. 8J); parameres asymmetrical.

Variation. Total body length 14.7–16.8 mm (average 15.8 mm); first antennomere red or black; lateral areas of head with dense or sparse punctures; punctures in elytra visible to few visible; fifth visible abdominal segment with entirely red or dark basal half and red apical half (gradually dark to red).

Distribution. Guatemala, mainly from Sierra de Las Minas.

***Homalolinus mordax* (Bierig), comb. nov.**

Ebomalolinus mordax Bierig, 1934: 20

Type material. *Syntype* female: Volcán Chiriqui, 1500 m, Panamá/Typus (green label)/Field Mus. Nat. Hist.1966, A. Bierig Colln. Acc. Z-13812/*E. mordax* Brg. (FMNH).

Material examined. PANAMA, Chiriqui Prv., Volcan Baru, Hartman's Loffee Finca, 16.vi.93, C. Michalski (1, SEMC); 27.7 km W Volcan Hartmann's Finca, 17.vi.1996, J. Ashe, R. Brooks (1, SEMC); Nueva Suiza, 17.vi.1995, J. Ashe, R. Brooks (1, SEMC); Volcán Chiriqui, 1500 m (1, FMNH); 24 km NNE San Felix, leg. J. Wagner, 23.vi.1980 (1, FMNH); 2 km W Cerro Punta, 1–7.vi.1977, H. & A. Howden (1, CNC). COSTA RICA, Puntarenas, Área de protección Progreso, 26.ii.2000, J. Márquez col. (3, MZFC); as previous, except J. L. Navarrete col. (3, MZFC); Fca. Cafrosa, Est. Las Mellizas, P. N. Amistad, Puntarenas, iii.1990, M. Ramírez & G. Mora (1, INBIO); Quijada del Diablo, 3.1 km NE de Mellizas, 20–26.iii.1996, E. Navarro (1, INBIO); San Isidro de Cor, 31.iii.1940, Amant. Negros (1, FMNH); Cartago, Tres Ríos, 13.ii.2000, J. Márquez col. (1, MZFC); as previous, except 28.ii.2000 (10, MZFC); Carpintera 21.i.1940 (4, FMNH); Copey, 1800 m, 21–22.iv.1943 (3, FMNH); Zarcero, vii.1939. (Uloya) 1, FMNH; Guacamaya, 6–8.ii.1943 (1, FMNH); Rabo de Mico, 6–8.ii.1943 (1, MZFC); Río San Lorencito, Res. For. Sn Ramón 5 km N Col. Palmarena, Alajuela, iii.1990 (1, INBIO); Puntarenas Monte Verde, 21.v.1989, J. Ashe, R. Brooks, R. Leschen (3, SEMC); Monteverde, 31.v.1992, M. Jameson (1, SEMC); Monte Verde, Campbell's Woods, 21.v.1989, J. Ashe, R. Leschen, R. Brooks (1, MZFC); Monte Verde, 13.v.1989, J. Ashe, R. Brooks, R. Leschen (1, SEMC); Monte Verde, 15.v.1989, J. Ashe, R. Brooks, R. Leschen (1, SEMC); as previous, except 14.v.1989 (1, SEMC); Cerro Chomogo, 22.v.1989, J. Ashe, R. Brooks, R. Leschen (1, SEMC); Monte Verde, 1400 m. Río Guacimal, 15.v.1989, J. Ashe, R. Brooks, R. Leschen (1, SEMC); Reserva de Monteverde, 23–24.v.1979, J. M. & B. A. Campbell (2, CNC); Avenida El Pizote, 1.4 km NE de la Triga, Puntarenas, 7–12.ii.1996, E. Navarro (1, INBIO); Guanacaste, Cacao Biological Station, 10.vii.2000, J. S. Ashe, R. Brooks, Z. Falin (6, SEMC).

Diagnosis. This species can be identified by the combination of the following characters: body oval-depressed; fifth visible abdominal segment with black basal half and red apical half; ocular channels moderately deep and as wide as first antennomere at its apex; lateral areas of head with punctures almost homogeneously distributed; ventral channels shallow and narrow; ventral posterior corners of head with a long seta; elytron with row of four setae on posterior 2/3.

Redescription. Total body length 14.5 mm. Head, neck, first to fourth visible abdominal segments and basal 2/3 of fifth segment black; thorax, 1/3 apical part of fifth visible

abdominal segment to apex red; antennae, maxillary and labial palps brown. Head: mesh microsculpture slightly visible; some wide punctures inside and behind ocular channels in addition to fine, sparse punctures; length of eyes 1/4 that of lateral length of head; ocular channels moderately deep, as wide as first antennomere at its apex; lateral area with deep punctures moderately dense, almost homogeneously distributed; ventral channels shallow, narrow (1/4 or less width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; head as wide as pronotum. Pronotum: midline visible near to posterior border only; width of anterior margin 1.1 times or less that of posterior margin. Elytron with row of four setae on posterior 2/3. Aedeagus pear-shaped (Fig. 8K); parameres asymmetrical.

Variation. Total body length 11.6–15.8 mm (average 13.4 mm); fifth visible abdominal segment almost entirely red, or with basal 2/3 red, or basal half red and apical half black; cephalic punctuation very conspicuous to reduced; ocular channels not homogeneous in width, widest at level of seta 2; lateral areas of head with punctures dense to moderate; elytron with row of 4–5 setae on posterior 2/3.

Distribution. Sierra de Talamanca in Costa Rica (first record) and northern Panama.

***Homalolinus obsoletus* sp. nov.**

Type series. *Holotype* male: GUATEMALA, Quetzaltenango, 2 km S Sta. María de Jesús (Zunil), BMM, 1660 m, N 14°43'525, W 91°31'108, ex troncos podridos, 24.xi.1999, J. Márquez col. (MZFC). *Paratypes*: same data as holotype (2, MZFC; 1, FMNH; 1, SEMC); MÉXICO, Chiapas, Unión Juárez, NE slope of Volcán Tacaná, 1500 m, Barranca Providencia, 15.xii.1975, H. Frania # 116–75 montane tropical forest, leaf litter, logs (2, AMNH); as previous, except leaf litter under coffee bush, finca in Guat. Elev. 1630 m (2, AMNH).

Etymology. Refers to the reduced development of the ocular and ventral channels, with only three setae inside the first one.

Diagnosis. Body oval-depressed; ocular channels almost superficial and as wide as first antennomere at its apex or less, with three setae; lateral areas of head with deep and moderately dense, almost homogeneously distributed, punctures; ventral posterior corners of head without a long seta.

Description. Total body length 14.8 mm. Head, neck and first to five visible abdominal segments black; antennae and mandibles brown; maxillary and labial palps, thorax, elytra, and sixth visible abdominal segment red. Head: mesh microsculp-

ture clearly visible; dorsally with fine, sparse punctures, with some wide punctures in middle part of Y-shaped groove, inside and behind ocular channels; ventrally with notable fine punctures; length of eyes 1/4 that of lateral length of head; ocular channels almost superficial, as wide as first antennomere at its apex or less, with three setae distributed as in Fig. 6J; lateral area with deep and moderately dense, almost homogeneously distributed, punctures; ventral channels shallow, narrow (less than 1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; ventral posterior corner without a long seta; head as wide as pronotum. Neck 2–2.9 times narrower than head. Pronotum: mesh microsculpture clearly visible; midline visible near to posterior border only. Elytron with sparse punctures moderately visible; with row of five setae on posterior 2/3. Aedeagus pear-shaped (Fig. 8M); parameres asymmetrical.

Variation. Total body length 13.0–18.4 mm (average 15.3 mm); lateral areas of head with moderate or dense punctures; elytron with row of 5–6 setae on posterior 2/3.

Distribution. South-east of México (Chiapas) to central Guatemala

***Homalolinus punctipennis* (Bierig), comb. nov.**

Ebomalolinus punctipennis Bierig, 1934: 18

Type material. *Holotype* and *paratypes* not observed. According to Bierig (1934) deposited in 'Deutsches Entomologisches Museum, Berlin-Dahlem' (Eberswalde, Germany). *Allotype* female: Vara Blanca. 2000 m. Costa Rica / Typus (green label) / Field Mus. Nat. Hist. 1966, A. Bierig Colln. Acc. Z-13812 (FMNH).

Material examined. PANAMA, Chiriqui 6.0 km NE Boquete, 14.vi.1996, J. Ashe, R. Brooks (1, SEMC). COSTA RICA, Vara Blanca, viii.1938 (1, FMNH); Cervantes, 8.iv.1940 (1, FMNH); Sn. J. of Corovato, 15.iii.1929 (1, FMNH); Vara Blanca, 7.vii.1928 (1, FMNH); La Palma (1, IRSNB); San José. Zurqui de Moravia, 1–30.vi.1995, P. Hanson (1, SEMC); 1–30.x.1995 (1, SEMC); 1–30.iv.1995 (2, SEMC); iii.iv.1993 (1, SEMC); iv–v.1993 (1, SEMC); Punt. Monteverde Biol. Re., 31.v.1993 (1, SEMC); Puntarenas, Monte Verde, 22.v.1989, J. Ashe, R. Leschen, R. Brooks (1, MZFC); 13.v.1989 (1, SEMC); Puntarenas, Santa Elena, Reserva Biológica Monteverde, 19.ii.2000, J. Márquez col. (3, MZFC); as previous, except 18.ii.2000 (1, MZFC).

Diagnosis. Fifth visible abdominal segment with apical 2/3 red and base black as previous segments; ocular channels shallow, as wide as first antennomere at its apex; lateral areas of head with deep and moderately dense, almost homogeneously

distributed, punctures; ventral channels moderately deep and very wide; ventral posterior corners of head with a long seta; and aedeagal shape.

Redescription. Total body length 13.8 mm. Head, neck, first to fourth visible abdominal segments and 1/3 basal of fifth segment black; antennae, maxillary and labial palps, thorax, apical 2/3 of fifth visible abdominal segment to apex red-brown. Head: mesh microsculpture visible; dorsally and ventrally with fine, sparse punctures; some wide punctures inside and behind ocular channels; length of eyes less than 1/4 that of lateral length of head; ocular channels shallow, as wide as first antennomere at its apex; lateral areas with deep and moderately dense, almost homogeneously distributed, punctures; ventral channels moderately deep, very wide (more than 1/3 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; width of head 1.2 times or more that of pronotum. Pronotum: mesh microsculpture clearly visible; midline visible near to posterior border only. Elytron with sparse punctures moderately visible; with row of seven setae on central part. Aedeagus pear-shaped (Fig. 8O); parameres asymmetrical.

Variation. Total body length 13.5–18.7 mm (average 16.3 mm); head with or without deep punctures in middle part, in addition to punctures inside and behind ocular channels; ocular channels slightly to moderately deep; lateral areas of head with punctures dense or moderately dense; ventral channels shallow to moderately deep.

Distribution. Panama (first record) and Costa Rica.

***Homalolinus rufopygus* sp. nov.**

Type series. *Holotype* male: GUATEMALA, Baja Verapaz, 3 km S Purulhá, 1 km S Santuario del Quetzal. Bmm. Casi N 15°12'694, W 90°13'70. 1623 m, 1.xii.1999, en troncos podridos, J. Márquez col. (MZFC). *Paratype*: same data as holotype (1 m, MZFC); GUATEMALA, Baja Verapaz, Niño Perdido (almost), c. 14 km 150, 7–9.viii.1991, stump debris, P. Kovarik & T. K. Philip (3, FMNH); 8 km S Purulhá, 1650 m, 30.vi.1993, J. Ashe, R. Brooks, ex: under bark (2, SEMC; 1, MZFC); 2.vii.1993 (1, SEMC); Purulhá, 26.v.1986, J. Pérez (1, CAUVG); nr Purulhá, J. C. Schuster, xi.1989 (1, CAUVG).

Etymology. Refers to the last two visible abdominal segments (plus genital segment) that are red and contrast with the shiny black of the remainder of the body.

Diagnosis. Body oval-depressed and mainly black, except for fifth to last visible abdominal segment, which is red; ocular channels deep and as wide as first antennomere at its

apex; lateral areas of head with deep and dense, almost homogeneously distributed, punctures; ventral channels moderately deep and narrow; ventral posterior corners of head with a long seta; and elytron with row of six setae on medial part.

Description. Total body length 15.2 mm. Head, thorax and first to fourth visible abdominal segments shiny black; antennae (except first antennomere), maxillary and labial palps, tarsal segments and fifth visible abdominal segment to apex red. Head: mesh microsculpture slightly visible; dorsally with fine, sparse punctures, and wide punctures in middle part of Y-shaped groove, inside and behind ocular channels; ventral surfaces without punctures; length of eyes 1/4 that of lateral length of head; ocular channels deep, as wide as first antennomere at its apex; lateral area with deep and dense, almost homogeneously distributed, punctures; ventral channels moderately deep, narrow (close to 1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; width of head 1.2 times or more that of pronotum. Pronotum: midline visible at 1/3 posterior. Elytron shiny; with fine, sparse punctures; with row of six setae on medial part. Aedeagus rounded (Fig. 8Q); parameres symmetrical.

Variation. Total body length 12.5–14.7 mm (average 13.7 mm); width of ventral channels 1/4 or more (but not most than 1/3) the width of cephalic half; elytron with row of five to seven setae on medial part.

Distribution. Only recorded from locations near Purulhá, Baja Verapaz, Guatemala.

***Homalolinus sanguineus* Sharp**

Homalolinus sanguineus Sharp, 1885: 474
Ebomalolinus sanguineus; Bierig, 1934: 17

Type material. *Lectotype* (sex not identified): *Homalolinus sanguineus* Type D. S. Calderas, Guatemala, Champion (in the plaque with the specimen)/BCA Col. I.2. *Homalolinus sanguineus* Sharp/Syntype/Lectotype *Homalolinus sanguineus* Sharp, 1885 J. Márquez des. 2001 (BMNH). *Paralectotypes* (sex not identified): S. Geronimo, 3000 ft. Champion/Paralectotype *Homalolinus sanguineus* Sharp, 1885, J. Márquez des. 2001 (1, BMNH); Cerro Zunil 4–5000 ft. Champion/Paralectotype *Homalolinus sanguineus* Sharp, 1885, J. Márquez des. 2001 (1, BMNH); *Homalolinus sanguineus* Type D. S. Dueñas, Guatemala, Champion (in the plaque with the specimen)/Paralectotype *Homalolinus sanguineus* Sharp, 1885, J. Márquez des. 2001 (2, BMNH); Capetillo, Guatemala. G. C. Champion/type *Homalolinus sanguineus* Sharp, 1885, J. Márquez des. 2001 (1, BMNH); Guatemala. O. Salvin/

Paralectotype *Homalolinus sanguineus* Sharp, 1885, J. Márquez des. 2001 (BMNH).

Material examined. GUATEMALA, Dpto. Zacapa, San Lorenzo. Sierra de las Minas, 11.vii.1986, J. M. Campbell (1, MZFC); 9.vii.1986 (1, CNC); Sacatepéquez, 4.7 km W Sn. Miguel Dueñas (1, MZFC); SP. Yepocapa, Chimal., Finca Monserrat, W slope V. (1, MZFC); Guatemala (1, IRSNB; 1, BMNH; 1, FMNH). MÉXICO, Chiapas: 3.7 km N jet hwy 190 and Ocozingo rd. (2, FMNH); 16 mi E. Teopisca, Chis. (1, CNC); 16 km SE San Cristóbal (2, SEMC); Oaxaca: Juquila (1, BMNH).

Diagnosis. This species is distinguished by the oval-depressed body; colour pattern; deep ocular channels; lateral areas of head with deep and dense punctures in upper half and fine punctures in lower half; elytron with row of eight setae on medial part; aedeagal shape.

Redescription. Total body length 14.4 mm. Head, first to fourth visible abdominal segments and 1/3 basal of fifth segment black; mandibles, antennae, maxillary and labial palps, thorax, 2/3 apical of fifth visible abdominal segment to apex red. Head: mesh microsculpture slightly visible; dorsally with fine, sparse punctures, and wide punctures in middle part of Y-shaped groove, inside and behind ocular channels; ventrally without punctures; length of eyes 1/4 that of lateral length of head; ocular channels deep, slightly wider than first antennomere at its middle part; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep, narrow (almost 1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; head as wide as pronotum. Pronotum: notable mesh microsculpture; midline visible along almost entire length. Elytron with fine, sparse punctures; with row of eight setae on medial part. Aedeagus rounded (Fig. 8S); parameres symmetrical.

Variation. Total body length 12.8–16.2 mm (average: 14.5 mm); fifth visible abdominal segment with black basal half and red apical half, changing gradually from dark to red; ocular channels deep to moderately deep, as wide as first antennomere at its apex or less; three specimens with five long setae inside ocular channels (fifth seta near to third seta); lateral areas of head with punctures dense or moderately dense on upper half, and fine punctures in lower half, but this pattern is not as clearly marked as in other species; elytron with row of 8–10 setae on medial part.

Remarks. Lectotype and paralectotypes were designated because this species can be confused with *H. guerreroensis* sp. nov., *H. mordax*, *H. obsoletus* sp. nov. and *H. punctipennis*.

Distribution. Central mountains of Guatemala and south-eastern México, in the states of Chiapas and Oaxaca.

***Homalolinus scutellaris* sp. nov.**

Type series. *Holotype* male: MÉXICO, 5 mi SW El Bosque, Chis. 6.vii.1969, Campbell & Bright (CNC). *Paratypes*: GUATEMALA, Zacapa, arriba La Unión, 1500 m, 10.v.1992, H. Castañeda (1, CAUVG). MÉXICO, 6 mi E San Cristóbal L. C., Chis., 2.vi.1969, H. F. Howden (1, MZFC); 6 mi SE San Cristóbal de las Casas, 26.vii.1963, Coll. W. A. Foster (1, SEMC); 38 km S Ocosingo 900 m, 26.iv.1993 R. W. Brooks # 73 (1, SEMC).

Etymology. Refers to the black scutellum that contrasts with the red elytra.

Diagnosis. Similar colour as *H. divisus*, but with fifth to last visible abdominal segments red and scutellum black; ocular channels deep and moderately narrow, with three setae only; lateral areas of head with deep and dense, almost homogeneously distributed, punctures; ventral channels deep and moderately narrow; and ventral posterior corners of head without a long seta.

Description. Total body length 16.2 mm. Head, pronotum, scutellum, prosternum and first to fourth visible abdominal segments black; antennae, maxillary and labial palps red-brown; elytra, mesosternum, metasternum, legs and fifth to last visible abdominal segment red. Head: mesh microsculpture conspicuous; dorsally and ventrally with fine, sparse punctures; with some wide punctures inside and behind ocular channels; length of eyes less than 1/4 that of lateral length of head; ocular channels deep, as narrow as first antennomere at its middle part, with three setae only distributed as in Fig. 6J; lateral area with deep and dense, almost homogeneously distributed, punctures; ventral channels deep, moderately narrow (1/4–1/3 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; ventral posterior corners without a long seta; width of head 1.2 times or more that of pronotum. Neck 2–2.9 times narrower than head. Pronotum: mesh microsculpture clearly visible; midline visible along almost entire length. Elytron with sparse punctures slightly visible; with row of four setae on posterior 2/3. Aedeagus pear-shaped (Fig. 8T); parameres asymmetrical.

Variation. Total body length 12.7–16.2 mm (average 13.7 mm); dorsal punctures and punctures in lateral areas moderately dense to dense; ventral channels can be more narrow (1/4 or less width of cephalic half); legs, mesosternum and metasternum heterogeneously dark-brown or red.

Distribution. Chiapas, México, and Sierra de Las Minas, Guatemala.

***Homalolinus setosus* sp. nov.**

Type series. *Holotype* male: PANAMA, Chiriqui Prov., Cerro Bollo (La Torre) 1750 m, 20.i.1981, FMHD #81–252, under rocks and litter, Dr W. Suter (FMNH).

Etymology. Refers to the setae covering the elytral disc and abdomen.

Diagnosis. This species can be distinguished by the setae covering the elytral disc in addition to the row of setae on the central part, and by the dense abdominal pubescence.

Description. Total body length 14.3 mm. Head, neck, pronotum, fifth and sixth visible abdominal segment black; antennae, maxillary and labial palps, elytra, thoracic sternae, legs, first to fourth visible abdominal segments and apical border of sixth red. Head: mesh microsculpture slightly visible; with fine, sparse punctures, and wide punctures in middle part of Y-shaped groove, inside and behind ocular channels; ventral surface with similar punctuation as dorsal surface; length of eyes less than 1/4 that of lateral length of head; ocular channels shallow, as wide as first antennomere at its apex, with five setae, fifth between second and third, and with microsculpture as irregular lines; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; ventral channels shallow, very wide (almost 1/2 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; width of head 1.2 times or more that of pronotum. Pronotum: conspicuous mesh microsculpture; midline visible at posterior third. Elytron with setae sparse in addition to the row of seven long setae on central part; lateral borders with longest setae compared with other species. Abdomen with long setae, denser than other species. Aedeagus pear-shaped (Fig. 8U); parameres probably asymmetrical (aedeagus slightly damaged).

Variation. Unknown.

Distribution. Known only from Chiriqui province, Panama.

***Homalolinus tlanchinolensis* sp. nov.**

Type series. *Holotype* female: MÉXICO, Hidalgo, Tlanchinol, BMM, ex tronco caído, 7.vii.1995, K. Villavicencio & J. Márquez cols. (MZFC). *Paratypes:* MÉXICO, Hidalgo 4.4 km N Tlanchinol Hwy. 105, 6.vii.1992, 1420 m. J. S. Ashe # 6 ex: under bark/logs (1, SEMC); same data as holotype (1, MZFC).

Etymology. Refers to the locality where the three known specimens were collected, Tlanchinol, Hidalgo state, México.

Diagnosis. Colour pattern as *H. scutellaris*; ocular channels shallow and wide, with four setae; lateral areas of head with

deep and dense punctures in upper half and fine ones in lower half; ventral channels moderately deep and wide; and ventral posterior corners of head with a long seta.

Description. Total body length 16.2 mm. Head, pronotum and first to fourth visible abdominal segments black; antennae, maxillary and labial palps, elytra, thoracic sternae, legs and fifth visible abdominal segment to apex red; scutellum dark-brown. Head: mesh microsculpture visible; dorsally and ventrally with fine, sparse punctures; some wide punctures inside and behind ocular channels; eyes less than 0.25 times lateral length of head; ocular channels shallow, as wide as first antennomere at its apex or more; lateral areas with deep and dense punctures in upper half and fine punctures in lower half; ventral channels moderately deep, wide (1/3–1/4 width of cephalic half), with conspicuous wrinkled and reflecting microsculpture; head as wide as pronotum. Neck 2–2.9 times narrower than head. Pronotum: mesh microsculpture clearly visible; midline visible near to posterior border only. Elytron with sparse punctures; row of four setae on medial part. Male unknown.

Variation. Total body length 14.4–16.2 mm (average 15.2 mm); central part of Y-shaped groove with or without striation; lateral areas of head with dense or very dense punctures in upper half and sparse ones in lower half; scutellum near black; elytron with row of 4–5 setae on central part.

Distribution. Recorded only from Tlanchinol, Hidalgo, México.

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Appendix

Characters and states analysed for *Homalolinus* and *Ebomalolinus* species.

1. Head: shape. (0) convex or oval depressed (Fig. 6A,C); (1) depressed (Fig. 6B).
2. Head: posterior angles. (0) obtuse (Figs 1B and 2A,B); (1) right or acute (Fig. 1A).
3. Head: frontal channels. (0) without frontal channels (Fig. 2A); (1) with two small frontal channels (Fig. 2B); (2) frontal channels united in a Y-shaped groove on entire length of the head (Fig. 1A,B).
4. Head: antennal channels. (0) absent (Fig. 2A,B); (1) present (Fig. 1A,B).
5. Head: ocular channels. (0) absent (Fig. 2A,B); (1) present (Fig. 1A,B).
6. Head: lateral borders. (0) convex (Fig. 6A); (1) forming a more or less flat area (Fig. 6B,C).
7. Head: dorsal punctures. (0) punctures sparse, wide and deep (Fig. 2A,B); (1) with some wide punctures close to lateral areas and ocular channels (Fig. 1B); (2) very fine and sparse only (Fig. 1A).
8. Head: number of long setae on posterior border. (0) two or four not clearly aligned (Fig. 2A,B); (1) transverse row of four, plus two small central ones; (2) transverse row of eight or more, plus two small central ones (Fig. 1A,B).
9. Head: puncture pattern in lateral areas. (0) similar punctures as dorsal surface (Fig. 6A); (1) abundant wide punctures in entire lateral areas, almost homogeneously distributed (Fig. 6C); (2) abundant wide punctures in the upper half and fine punctures in the lower half (Fig. 6B).
10. Head: comparison of width of posterior margin with that of base of mandibles. (0) head subquadrangular (less than 1.1 times); (1) head slightly wider (1.1 to 1.3 times).
11. Head: eye length in proportion to lateral length of head. (0) long (more than 1/4); (1) short (less than 1/4).
12. Antennae: length when directed behind. (0) long (reaching medial part of pronotum); (1) short (reaching first third of pronotum).
13. Antennae: length of first antennomere in proportion to the two next combined. (0) close to same; (1) close to 1.75 times; (2) close to twice.
14. Antennae: first antennomere in proportion to distance of antennal base to eye. (0) shorter than distance to posterior border of eye; (1) slightly longer than the distance to posterior border of eye.
15. Antennae: length of second antennomere in relation to third. (0) nearly the same; (1) 0.6–0.8 times; (2) close to 0.5 times.
16. Ocular channels: direction. (?) no channels (Fig. 6A); (1) extend ventrally from eye only (Fig. 6I,J); (2) bifurcate ventrally and forward from eye (Fig. 6G,H).
17. Ocular channels: depth. (?) no channels; (1) shallow; (2) moderately deep; (3) deep.
18. Ocular channels: width. (?) no channels; (1) wide (wider than apex of first antennomere); (2) moderately wide (between apex and middle part of first antennomere); (3) narrow (less wide than middle part of first antennomere).
19. Ocular channels: number of setae inside. (0) none; (1) two (Fig. 6H); (2) three (Fig. 6J); (3) four (Fig. 6G,I).
20. Ocular channels: distribution of setae. (?) no channels; (1) two setae homogeneously distributed (Fig. 6H); (2) three setae homogeneously distributed (Fig. 6J); (3) four setae homogeneously distributed (Fig. 6I); (4) four setae heterogeneously distributed (1–2 and 3–4 separated; Fig. 6G).
21. Labrum: shape. (0) very convex at apex (Fig. 2A); (1) convex at apex (Fig. 6L); (2) not convex at apex (Fig. 6K).
22. Labrum: setae. (0) two long setae on each middle part and seven or less short setae (Fig. 6K); (1) two long setae on each middle part and more than seven short setae (Fig. 6L).
23. Maxillary palps: length of palpomeres 2, 3 and 4 combined. (0) longer than first antennomere; (1) almost 0.75 times length of first antennomere; (2) almost 0.5 times length of first antennomere.
24. Head: gular area near to neck. (0) not carinate (Fig. 6D,F); (1) carinate (Fig. 6E).
25. Head: gular sutures. (0) united closely for middle part of its length (Fig. 6D); (1) fully united (Fig. 6E,F).
26. Head: anterior carinae. (0) without carinae (Fig. 6D,F); (1) with two reduced carinae; (2) with two conspicuous carinae (Fig. 6E).
27. Head: longitudinal ventral channels. (0) none (Fig. 6D); (1) two (Fig. 6E,F).
28. Head: width of longitudinal ventral channels. (?) no channels; (1) wide (1/3 or more as wide as cephalic half; Fig. 7A); (2) narrow (1/3–1/4 as wide as cephalic half; Fig. 7B); (3) very narrow (1/4 or less as wide as cephalic half; Fig. 7C).
29. Head: depth of longitudinal ventral channels. (?) no channels; (1) slightly to moderately deep; (2) deep.

30. Head: texture of longitudinal ventral channels. (?) no channels; (1) wrinkled and reflecting texture; (2) moderate punctures only, or combined with wrinkled and reflecting texture.
 31. Head: long seta near to each posterior ventral corner. (0) absent (Fig. 6C); (1) present (Fig. 6D,F).
 32. Head: punctures in ventral surface. (0) wide, deep and sparse (Fig. 6D); (1) some fine punctures only inside longitudinal ventral channels and borders; (2) inconspicuous.
 33. Head width: ratio of (posterior margin)/pronotum width (anterior margin). (0) similar (less than 1.2 times); (1) wide (more than 1.2 times).
 34. Neck width in proportion to head width (posterior margin). (0) very wide (less than 2 times narrower than head); (1) wide (2–2.9 times narrower); (2) narrow (3–3.5 times narrower); (3) very narrow (3.6–4.5 times narrower).
 35. Pronotum: shape. (0) convex or slightly depressed (Figs 1B and 2A,B); (1) depressed (Fig. 1A).
 36. Head and pronotum pattern colour. (0) same or similar; (1) different.
 37. Pronotum: medial punctures. (0) two longitudinal rows of 1–3 punctures (Fig. 2A,B); (1) no rows of punctures (Fig. 1A,B).
 38. Pronotum: anterior border. (0) not convex; (1) convex.
 39. Pronotum: width at anterior margin in proportion to posterior margin. (0) 1.1 times or less; (1) 1.1–1.2 times wider; (2) more than 1.2 times wider.
 40. Prosternum: carina. (0) slightly or strongly carinate between procoxae (Fig. 6D); (1) not carinate (Fig. 6E).
 41. Pronotum and elytra pattern colour. (0) same or similar; (1) different.
 42. Elytra: longitudinal row of setae on central part of each elytron. (0) row of four or more (Figs 1A,B and 2A,B); (1) row of three or less; (2) without setae on elytral disc.
 43. Elytra and scutellum pattern colour. (0) same or similar; (1) different.
 44. Tarsomeres of anterior legs. (0) first four dilated (Fig. 6M); (1) first four not dilated (Fig. 6N,O).
 45. Tarsomeres of middle and posterior legs. (0) with setae on lateral face of each tarsomere (Fig. 6P); (1) with one spine on apex of external face and setae on entire internal face of each tarsomere (Fig. 6Q,R).
 46. Ctenidium at apex of protibiae. (0) apical ctenidium only (Fig. 6M); (1) three ctenidia (Fig. 6N,O).
 47. Elytra and first to fourth visible abdominal segments, colour pattern. (0) same or similar colour pattern; (1) different colour pattern.
 48. Abdominal colour pattern. (0) all abdominal segments with homogeneous colour (Figs 1A and 2A,B); (1) first to fourth visible abdominal segments and basal half of fifth of different colour than apical half of fifth, sixth and genital segment (Fig. 1B); (2) first to fourth visible abdominal segments of different colour than remaining segments; (3) first to fifth visible abdominal segments of different colour than remaining segments; (4) fifth visible abdominal segment and 1/3–2/3 of sixth of different colour than other segments.
 49. Sternite of male genital segment: base. (0) not acute (Fig. 6S); (1) very acute (Fig. 6T).
 50. Sternite of male genital segment: shape. (0) symmetrical (Fig. 6S); (1) asymmetrical (Fig. 6T).
 51. Tergite of male genital segment: shape. (0) wide and short (Fig. 6U,V); (1) long (Fig. 6W).
 52. Aedeagus: shape. (0) pear-shaped (Figs 4D,F and 5O,R,T,U, etc.); (1) rounded (Figs 4E and 5P,Q,S,V).
 53. Aedeagus: parameres. (0) symmetrical (Figs 4D–F,J,K,M,R and 5D,G,I,L,N,P–S,V); (1) asymmetrical (Figs 4G–I,L,N–Q and 5A–C,E,F,H,J,K,M,O,T,U).
 54. Aedeagus: length of parameres in respect to that of medial lobe. (0) shorter (Fig. 7D,E); (1) longer (Figs 4F and 5V).
 55. Aedeagus: internal sac. (0) inconspicuously developed (Fig. 7D,K,O,R, etc.); (1) conspicuously developed (Fig. 7E,F,I, etc.).
 56. Aedeagus: length of parameres in proportion to entire aedeagal length. (0) almost 1/2 (Figs 4D and 5L); (1) more than 1/2 (Figs 4I and 5C); (2) between 1/2 and 1/4 (Figs 4F and 5N); (3) 1/4 or less (Fig. 8P,V).
 57. Aedeagus: length of right paramere in proportion to that of the left. (0) same (Fig. 7F); (1) longer (Fig. 7L); (2) shorter (Fig. 8T).
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