

KEY TO AMERICAN GENERA OF PASSALIDAE

By Jack Schuster and Enio Cano 2008

1. Anterior angles of clypeus small, hidden below the external tubercles of the frons. Clypeus hidden below frons or absent (fig. 1), if slightly visible then clypeus is nearly vertical (fig. 9). Frons frequently punctate (figs. 1, 10, 11, 14) (tribe Passalini)2

1'. Anterior angles of clypeus well developed and visible, when not very visible (some *Pseudacanthus*), then frontal-clypeal suture is obvious at least in anterior view (figs. 19, 20). Clypeus usually exposed, visible dorsally, at times separated from the frons by a suture (figs. 18, 21, 28-30, 34-38, 40, 41). When suture not present, frons-clypeus lacks punctures (figs. 15, 24, 25, 26, 39) (tribe Proculini)11

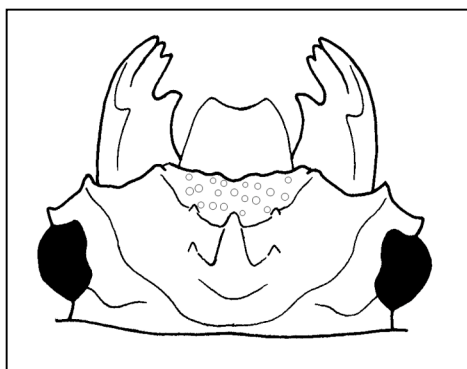


Fig. 1: Head of *Passalus* (*Pertinax*) sp.

2. Apex of maxillary lacinia unidentate. Antenna with 5 lamellae3

2'. Apex of maxillary lacinia bidentate. Antenna with 3 lamellae, rarely 4 or 55

3. Anterior border of ligula tridentate (fig. 2). Median Frontal Structure (MFS = area in center of head usually with some form of horn or protuberance) similar to that of *P. interstitialis* (fig. 11) or *P. punctatostratus* (fig. 1), with lateral tubercles. Frontal ridges and internal tubercles present, if not, then MFS with central horn that reaches anterior border of head4

3'. Anterior border of ligula unidentate (fig. 3). MFS similar to that of *Passalus plicatus* (fig. 14), without lateral tubercles, central horn does not reach anterior border of head. Frontal ridges and internal tubercles absent*Passipassalus*



Fig. 2: Ligula of *Paxillus leachi*

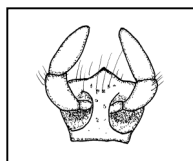


Fig. 3: Ligula of *Passipassalus buhrnheimi*

4. Prosternellum pentagonal, posterior border of pentagon longer than half of the maximum width of prosternellum (fig. 4). Humeral angles of elytra glabrous or pubescent. Anterior femur without marginal groove ventrally on anterior border.....*Paxillus*

4'. Prosternellum rhomboidal, if appears pentagonal, then posterior border is narrower than half the maximum width of prosternellum (fig. 5). Humeral angles of elytra always glabrous. Anterior femur with marginal groove ventrally on anterior border (Antilles, South America)*Spasalus*

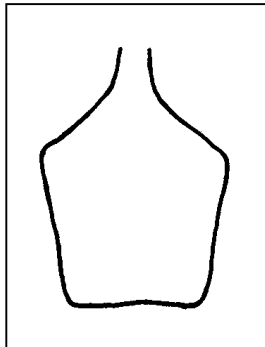


Fig. 4:
Prosternellum of
Paxillus.

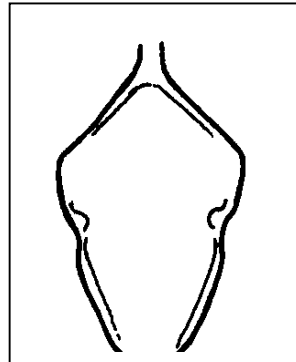


Fig. 5:
Prosternellum
of *Spasalus*

5. Anterior tibia twice as wide at apex than at base (fig. 6), with transverse striae on ventral face. Anterior border of labrum concave with an obtuse central projection (fig. 8). Mandibular apex bidentate with superior tooth large and inferior tooth small, rarely with the superior tooth divided or, in South America, tridentate. All tarsi usually short, less than half the length of the tibia (Arizona to South America)

..... *Ptichopus*

5'. Anterior tibia nearly parallel-sided, apex less than twice as wide as base (fig. 7) usually without transverse striae on ventral face. Anterior border of labrum straight, slightly concave or bi-emarginate (figs. 1, 9). Mandibular apex with 3 sub-equal teeth, if 2, then clypeus vertical and easy to see. All tarsi long, length greater than half the length of tibia6

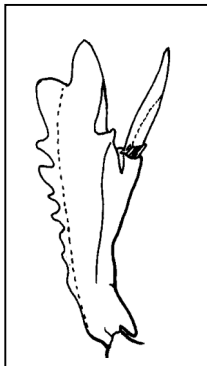


Fig. 6: Anterior tibia I of
Ptichopus angulatus

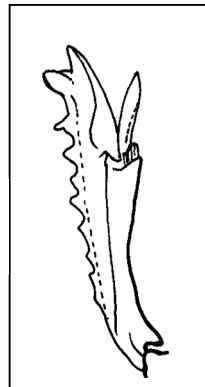


Fig. 7: Anterior tibia I
of *Passalus* sp.

6. Mandibular apex tridentate. Clypeus below frons, not exposed, difficult to see even from the front (Mexico, Central America, South America and Antilles) ... *Passalus (sensu lato)*7

6'. Mandibular apex bidentate. Clypeus vertical, exposed, in dorsal view slightly visible but easy to see from the front (Northern Mexico to Nicaragua) (fig. 9)..... *Gen. Nov.* 1

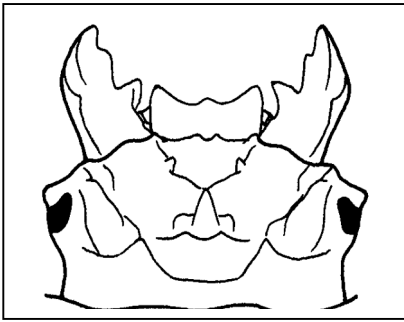


Fig. 8: Head of *Ptichopus angulatus*

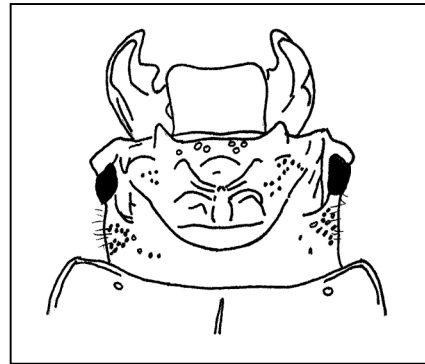


Fig. 9: Head of *Gen nov.* 1

7. Anterior border of head generally straight, without secondary tubercles, with or without a central concavity (fig. 1) (Mexico to South America).....*Passalus (Pertinax)*

7'. Anterior border of head with 1 or 2 secondary tubercles (figs. 10, 11) or, if without these tubercles, then horn "broken", with vertical base then bent forward abruptly (fig. 12)8

8. Anterior border of head with a single medial secondary tubercle (fig. 10) (South America).....*Passalus (Mitrorhinus)*

8'. Anterior border of head with 2 partially or completely separated secondary tubercles (fig 11) (Arizona to South America, Antilles) *Passalus (Passalus)* 9

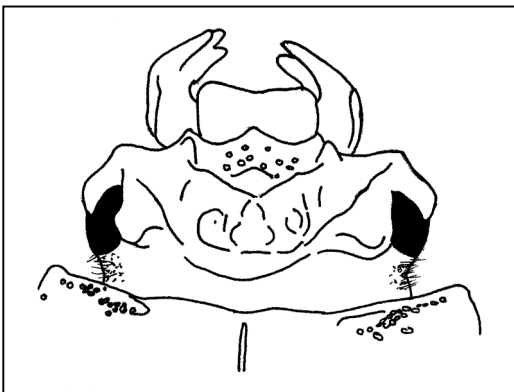


Fig. 10: Head of *Passalus (Mitrorhinus) lunaris*

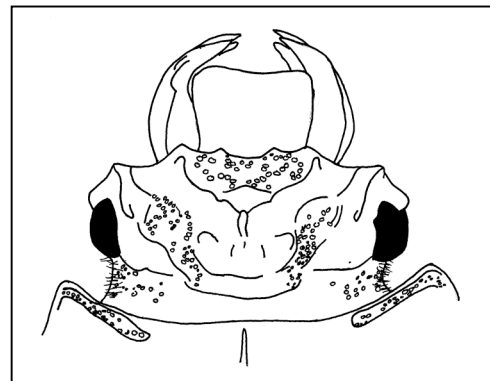


Fig. 11: Head of *Passalus (Passalus) interstitialis* "Neleus" group.



Fig. 12: Horn of *Passalus (Passalus) plicatus* (“*Neleus*” group) – lateral view. Anterior at left.

- 9. Secondary tubercles contiguous at base (fig. 13).....10
- 9'. Secondary tubercles more or less separated (fig. 11) (Arizona to South America)..
.....*Passalus (Passalus)* “*Neleus*” group
- 10. Apex of central tubercle (horn) of MFS not free or almost not free (fig. 13) (Guatemala to South America).....*Passalus (Passalus)* “*Phoroneus*” group
- 10'. Apex of horn very free; horn with vertical base, then curves forward horizontally (fig. 14) (South America)..... *Passalus (Passalus)* “*Petrejus*” group

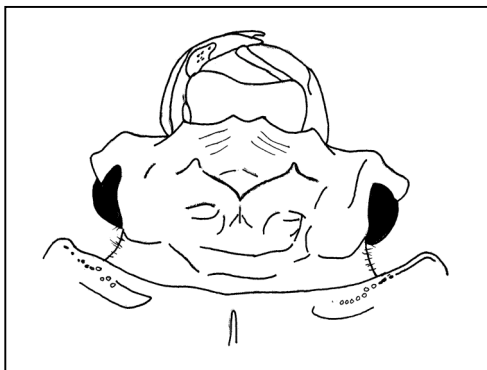


Fig. 13: Head of *Passalus (Passalus) jansonii* “*Phoroneus*” group

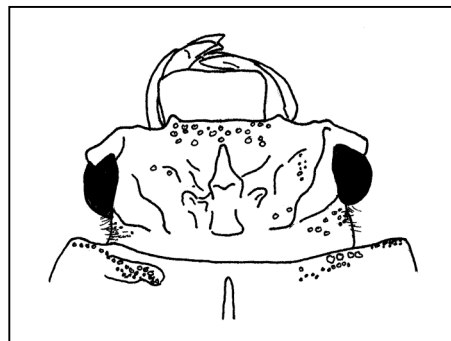


Fig. 14: Head of *Passalus (Passalus) plicatus* “*Petrejus*” group

- 11. Anterior margin of labrum deeply concave, with a “scooped out” excavation in labrum behind concavity of margin (fig. 15). Frontoclypeal suture absent (weak in *Verres sp. nov.*). Antenna with short lamellae (fig. 16) (Mexico to South America)
.....*Verres*

11'. Anterior margin of labrum straight, slightly concave or convex (figs. 18, 19); if strongly concave, then frontoclypeal suture present.....12

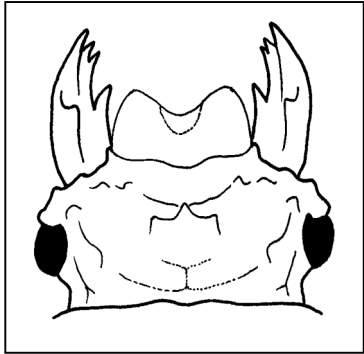


Fig. 15: Head of *Verres hageni*

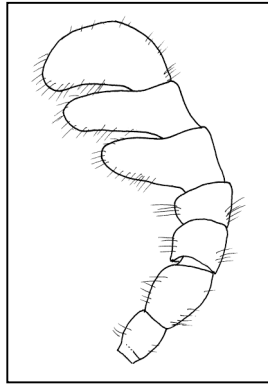


Fig. 16: Antenna of *Verres hageni*

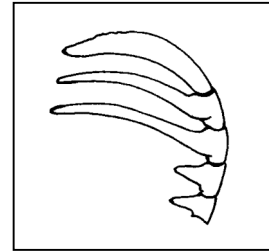


Fig. 17: Antenna of *Proculus*

12. Internal tubercles of head extend anteriorly more or less the same distance as the external tubercles (figs. 19, 20), projecting beyond frontoclypeal suture when it is present.....13

12'. Internal tubercles absent or, if present, not extending anteriorly to the level of the external tubercles (fig. 21), not projecting beyond the frontoclypeal suture when it is present.....15

13. Apex of horn not free, clypeus vertical or almost vertical (45 degrees), body usually flattened, length 20-30 mm (fig. 19) (Mexico to Honduras and El Salvador)*Vindex*

13'. Apex of horn free, clypeus usually horizontal, body rounded, body length 23-46 mm (figs. 18, 20) (Mexico to Guatemala)14

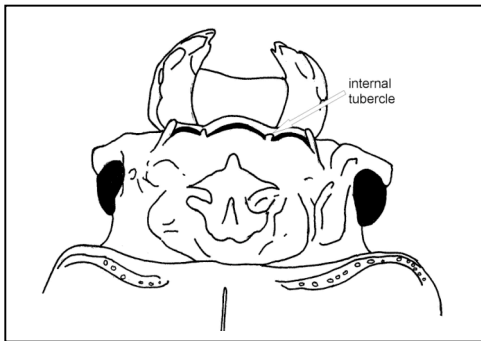


Fig. 18: Head of *Undulifer incisus*

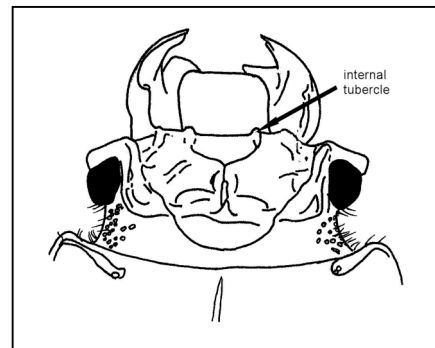


Fig. 19: Head of *Vindex sculptilis*

14. Mesosternum with fine punctations throughout. Anterior border of clypeus very convex in center. Frontoclypeal suture triarcuate and prolonged laterally toward supraocular ridge (Fig. 18); body length 30-32 mm (fig. 18) (Oaxaca and Guerrero)*Undulifer*

14' Mesosternum with delimited coarse punctations or without punctations; anterior border of clypeus straight, though may extend forward between inner tubercles; body length 22-45mm (fig. 20) (Mexico to western Guatemala) *Pseudacanthus*

15. Dorsal head flat, without central horn, only a tubercle on each side. Body small (17-23 mm long) (fig. 21)*Spurius*

15'. Dorsal head with protuberances or horn. Body length variable16

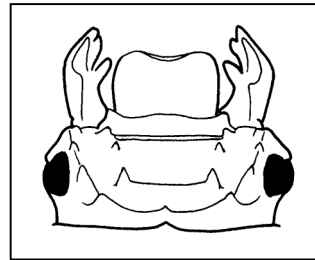
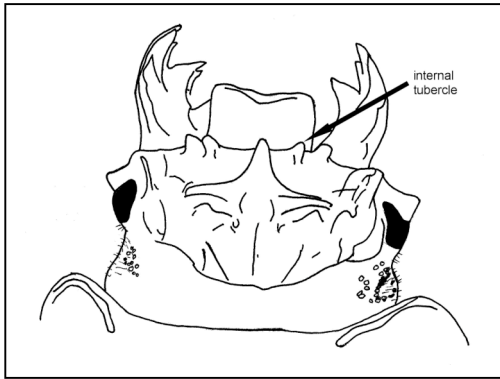


Fig. 21: Head of *Spurius bicornis*

Fig. 20: Head of *Pseudacanthus subopacus*

16. Body length more than 51 mm. Frontoclypeal suture absent. Anterior border of clypeus thin. Antennal lamellae very wide and curved (fig. 17). Elytra rounded. Wings and eyes reduced (Veracruz (?), Chiapas to Colombia)*Proculus*

16'. Body length less than 51 mm (if longer, then frontoclypeal suture present, but if poorly defined then antennal lamellae short [fig. 16]). Frontoclypeal suture present or absent. Anterior border of clypeus thin or thick. Antennal lamellae, elytra, wings and eyes variable17

17. Clypeus partially or entirely rugose, frontoclypeal suture extends along frontal ridges, frontal ridges present from their junction to internal tubercles (fig. 22).

Humeral angles square. Eyes usually not reduced (Chiapas to Honduras, El Salvador).....*Chondrocephalus*

17'. Clypeus smooth (if rugose, then frontal ridges absent between internal tubercles and hypothetical ridge juncture point (fig. 23), humeral angles of elytra rounded and eyes reduced). Frontoclypeal suture straight or slightly curved, if extending along ridges, ridges not complete, don't intersect18

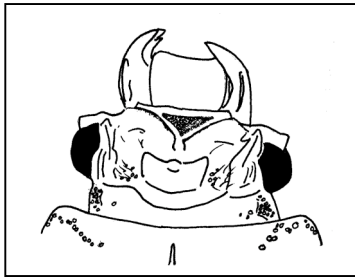


Fig. 22: Head of *Chondrocephalus purulensis*

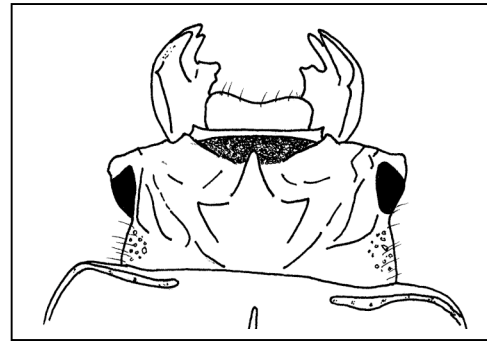


Fig. 23: Head of *Gen. nov. 2*

18. Frontoclypeal suture poorly defined or absent (figs.24, 25 26). Anterior margin of clypeus thin. Antennal lamellae short (fig. 16)19

18'. Frontoclypeal suture visible (if not visible, then wings reduced and humeral angles of elytra rounded and eyes reduced, but without hair or with scarce hairs on anterior corners of metasternon and lateral groove of metasternon narrow). Anterior margin of clypeus usually thick. Antennal lamellae short or long 21

19. Body length >38 mm, if less, then anterior border of pronotum bisinuate (fig. 24), marginal groove of pronotum laterally and anteriorly wide and deep or narrow and shallow and lateral fossae of pronotum poorly or well marked (Veracruz to South America).....*Veturius*.....20

19'. Body length <39 mm. Anterior border of pronotum more or less straight (fig. 26). Marginal groove of pronotum laterally narrow and shallow. Lateral fossae of pronotum well marked. *A. granulipennis* with opaque elytra covered with small tubercles. *A. agassizi* with slight longitudinal ridge between juncture of frontal ridges and anterior border of head (Chiapas to Costa Rica) *Arrox*

20. Anterior border of pronotum more or less straight (fig. 25). Marginal groove of pronotum laterally narrow and shallow. Lateral fossae of pronotum well marked*V. (Publius)*

20'. Anterior border of pronotum bisinuate (fig. 24). Marginal groove of pronotum laterally and anteriorly wide and deep. Lateral fossae of pronotum poorly marked

Veturius (other subgenera)

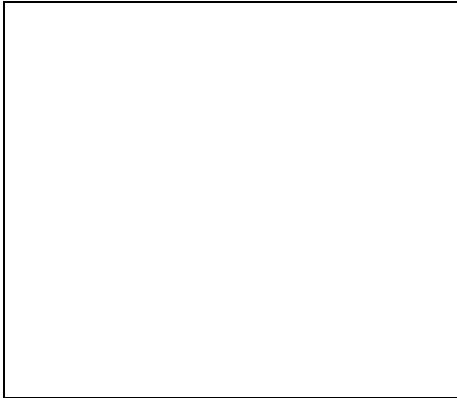


Fig. 24: Head of *Veturius sinuatus*



Fig. 25: Head of *Veturius (Publius) talamancensis*

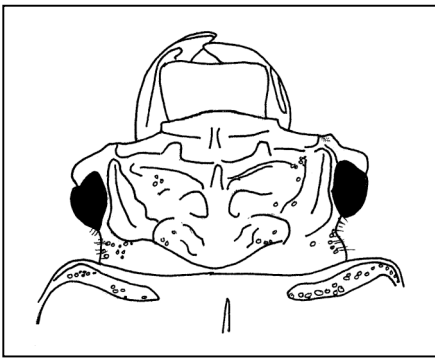


Fig. 26: Head of *Arrox agassizi*



Fig. 27. Head of *Ogyges championi*

21. Antennal lamellae curved (if straight, then with large horn, frontal ridges absent, clypeus inclined 45 degrees; lateral metasternal groove glabrous and narrow; body length 25-45 mm [(fig. 27)] (Chiapas to Nicaragua)*Ogyges*

21' Antennal lamellae straight.....22

22. MFS with lateral ridges (fig. 28), if absent, then body length <26mm, mid-clypeus not swollen and from Panama or Colombia; MFS usually with large horn with apex free24

22' MFS without lateral ridges (fig. 29, 30), if present, then anterior labral border deeply indented (fig. 31) (*Odontotaenius cerastes*); mid-clypeus often swollen; MFS with or without large horn with free apex23

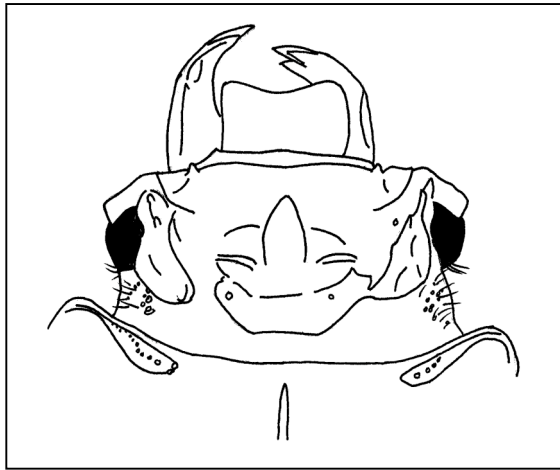


Fig. 28: Head of *Oileus sargi*

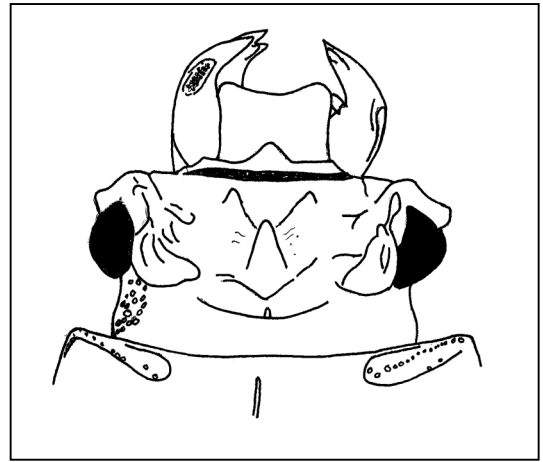


Fig. 29: Head of *Odontotaenius striatopunctatus*

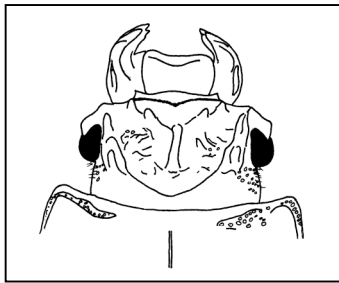


Fig. 30: Head of *Odontotaenius yucatanus*

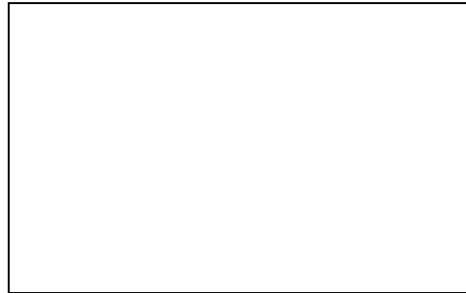


Fig. 31: Labrum of *Odontotaenius cerastes*

23. Antennal lamellae short, proximal lamella shorter than second lamella; movable spur of mesotibia reaches farther than distal end of second tarsomere; head with or without internal tubercles (figs. 29, 30)*Odontotaenius*

23' Antennal lamellae long, proximal lamella equal to, or longer than, second lamella, if shorter, then elytra with striae absent or very weak and body length >40mm; movable spur of mesotibia not reaching past, or just reaching, distal end of second tarsomere, if surpasses, then clypeus and fronto-clypeal suture V shaped and from Mexico (*Oileus bifidus*); head without internal tubercles.....*Oileus*

24. Depressed area lateral and posterior to MFS with many hairs.....25

24' Depressed area lateral and posterior to MFS with few or no hairs.....26

25. Distal meso and meta tibia with all terminal spines pointed (fig. 32), body length 21-33mm (figs. 34,35) (Mexico to Colombia and Venezuela)*Heliscus*

25' Distal meso and meta tibia with at least one terminal spine truncate (fig. 33, 36)
(Panama to South America)*Popilius*

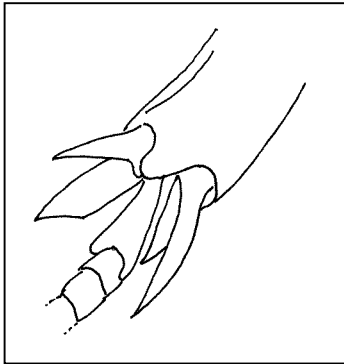


Fig. 32: Distal mesotibia of *Heliscus tropicus*

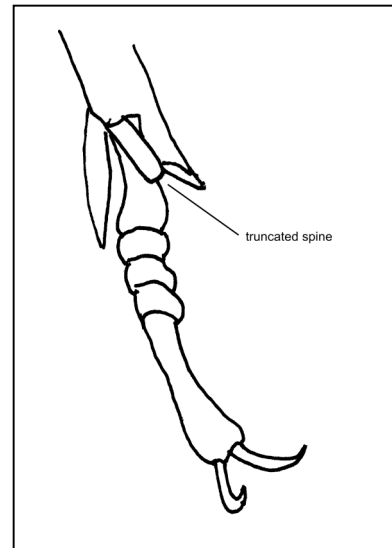


Fig. 33: Distal metatibia and tarsus of *Popilius gibbosus*

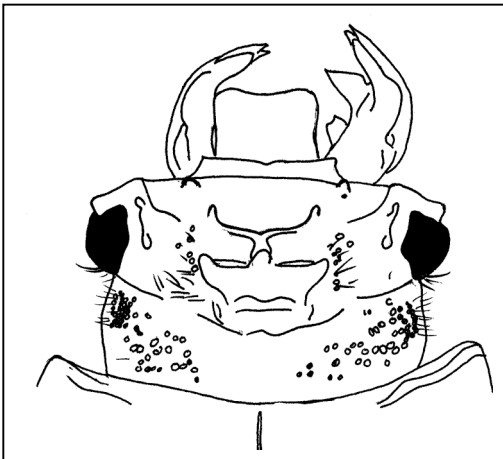


Fig. 34: Head of *Heliscus eclipticus*

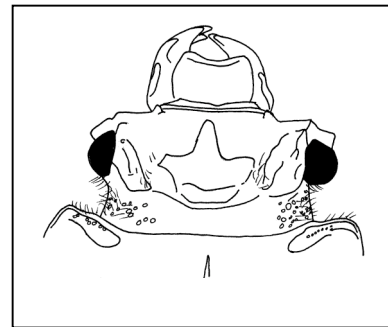


Fig. 35: Head of *Heliscus ridiculus*

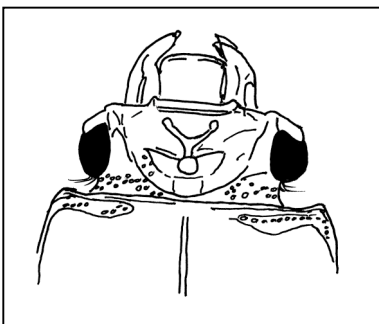


Fig. 36: Head of *Popilius tetraphyllus*

26. Clypeus at least partially rugose with granulations. Eyes reduced. Humeral angles of elytra rounded; elytra with punctures moderately defined. Body length 25-32 mm (fig. 23) (Guatemala, El Salvador, Honduras)*Gen. Nov.* 2

26'. Clypeus smooth. Eyes normal or reduced. Humeral angles of elytra normal or rounded, (if rounded, then elytra usually with coarse punctures). Body length variable.27

27. Elytra with strong punctures, occasionally with many fine hairs laterally, humeral angles rounded.. Eyes reduced. Frontal ridges and internal tubercles present28

27'..Elytra with weak punctures, laterally lacking fine hairs or, if hairs present, then only on humeral angles, humeral angles rounded or not. Eyes reduced or normal. Frontal ridges and internal tubercles present or absent29

28. Elytral punctures rectangular; interstriae narrower than striae; humeral angles glabrous. Body length less than 31 mm (fig. 37) (Chiapas to Honduras)*Xylopassaloides*

28'. Elytral punctures circular; interstriae wider than striae; humeral angles, and usually sides, with dense, long hair; body length more than 24 mm (fig. 38) (north of Isthmus of Tehuantepec)*Proculejus*

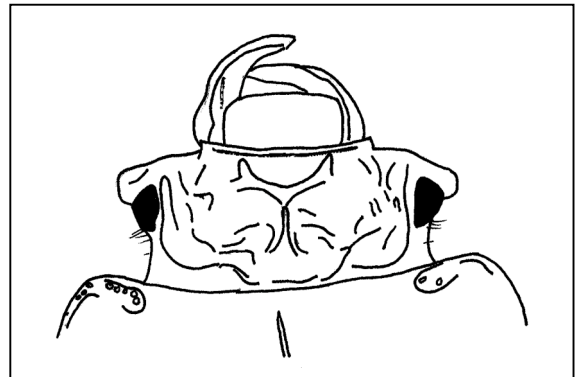
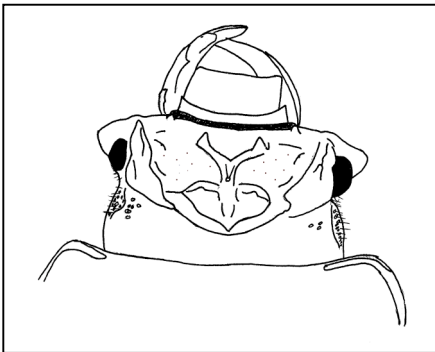


Fig. 37: Head of *Xylopassaloides schusteri*

Fig. 38: Head of *Proculejus brevis*

29. Frontoclypeal suture absent, MFS without lateral ridges and tubercles, body length >24mm, movable mesotibial spur does not extend beyond end of second tarsomere (fig. 39) (Costa Rica, Panama ?).....*Pseudoarrox*

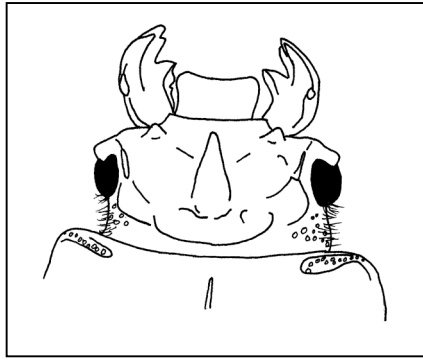


Fig. 39: Head of *Pseudoarrox karreni*

29' Frontoclypeal suture almost always present; MFS almost always with lateral ridges and tubercles; movable mesotibial spur length variable; if frontoclypeal suture absent, MFS without lateral ridges and tubercles and mesotibial spur does not extend beyond end of second tarsomere, then body length <24mm and from Colombia and Ecuador (*Petrejoides caldasi*)30

30. Movable mesotibial spur extends beyond end of second tarsomere, if not, from Colombia; lateral pronotal groove width not varying; dorsal mesotibial ridge length >50% length of tibia (fig. 40) (Mexico to Ecuador)*Petrejoides*

30' Movable mesotibial spur does not extend beyond end of second tarsomere; lateral pronotal groove wider (and usually deeper) anteriorly than posteriorly (except in *Y laticornis*); dorsal mesotibial ridge length <50% length of tibia (except in *Y. laticornis*) (fig. 41) (Mexico north of the Isthmus of Tehuantepec).....*Yumtaax*

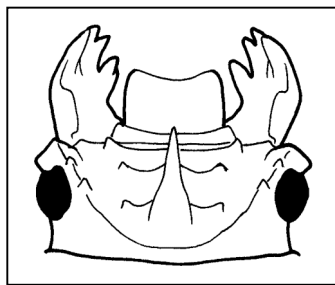


Fig. 40: Head of *Petrejoides tenuis*



Fig. 41: Head of *Yumtaax mazatecus*