

**Five new *Philonthus* species
(Coleoptera: Staphylinidae: Philonthina)
from the Afrotropical region**

Lubomír HROMÁDKA

Anny Letenské 7, CZ-120 00 Praha 2, Czech Republic; e-mail: hromadka@seznam.cz

Abstract. Five new species of the genus *Philonthus* Stephens, 1829 (Coleoptera: Staphylinidae) are described: *Philonthus jelineki* sp. nov. (Republic of South Africa), *Philonthus jelinekianus* sp. nov. (Nigeria), *Philonthus loxodonta* sp. nov. (Republic of South Africa), *Philonthus phacochoerus* sp. nov. (Liberia) and *Philonthus tragelaphus* sp. nov. (Republic of South Africa). All species are described, illustrated and compared with related species.

Key words. Coleoptera, Staphylinidae, Philonthina, *Philonthus*, taxonomy, new species, Afrotropical Region

Introduction

The genus *Philonthus* Stephens, 1829 is represented by approximately 300 species in the Afrotropical Region. Six species groups were defined for Afrotropical species by TOTTENHAM (1949) and HROMÁDKA (2008a). I have revised the *Philonthus abyssinus*, *P. caffer*, *P. nigriceps*, *P. peripateticus* and *P. turbidus* species groups (HROMÁDKA 2008a,b,c; 2009a,c), and transferred some species originally described as *Philonthus* to *Mentophilonthus* (HROMÁDKA 2009b).

In this study, five new species of Afrotropical *Philonthus* are described. Based on external characters and morphology of genitalia, it is not possible to affiliate any of these new species to the species groups mentioned above.

Material and methods

The following acronyms are used to refer to the collections mentioned:

- BMNH Natural History Museum, London, United Kingdom (Max Barclay and Roger Booth);
- FMNH Field Museum of Natural History, Chicago, USA (James Boone);
- LHPC Lubomír Hromádka collection, Praha, Czech Republic;
- NMPC National Museum, Praha, Czech Republic (Jiří Hájek).

Separate labels are divided in the text by a double slash (/). All measurements were taken from the beetles with their abdomen stretched. Ratios mentioned in the descriptions can be converted to lengths as 20 units = 1 mm.

Results

Philonthus jelineki sp. nov.

(Figs. 1–7)

Type locality. Republic of South Africa, Cape Province, Die Panne N. R.

Type material. HOLOTYPE: ♂, 'REPUBLIC OF SOUTH AFRICA: Die Panne N. R., Cape Province [= Northern Cape Province], 5.–6.i.1972. Southern African Expedition, B. M. 1972-1., litter by brackish pools // HOLOTYPE, *Philonthus jelineki* sp. nov. Hromádka, det. 2008 [red oblong printed label]' (BMNH). PARATYPES: 3 spec., same label data as in holotype [all paratypes with red printed type labels] (BMNH, LHPC).

Description. Body length 5.8–6.2 mm, length of forebody (to end of elytra) 2.9–3.2 mm.

Colouration. Head, pronotum and antennae black, pronotum, abdomen, maxillary and labial palpi and mandibles black-brown, femora dark brown-yellow, tibiae and tarsi vaguely darker.

Head of rounded quadrangular shape, hardly wider than long (ratio 18 : 17), slightly narrowed towards obtusely rounded posterior angles behind eyes, eyes as long as temples. Four punctures situated between eyes, distance between medial interocular punctures 4 times as large as distance between medial and lateral interocular puncture. Temporal area each with several coarser punctures, surface with dense and very fine microsculpture consisting of mostly transverse waves.

Antennae moderately long, reaching posterior margin of pronotum when reclined. Relative lengths of antennomeres 1–11: 5.5-3.5-4-3-3-3-2.5-2.5-2.5-4-5.

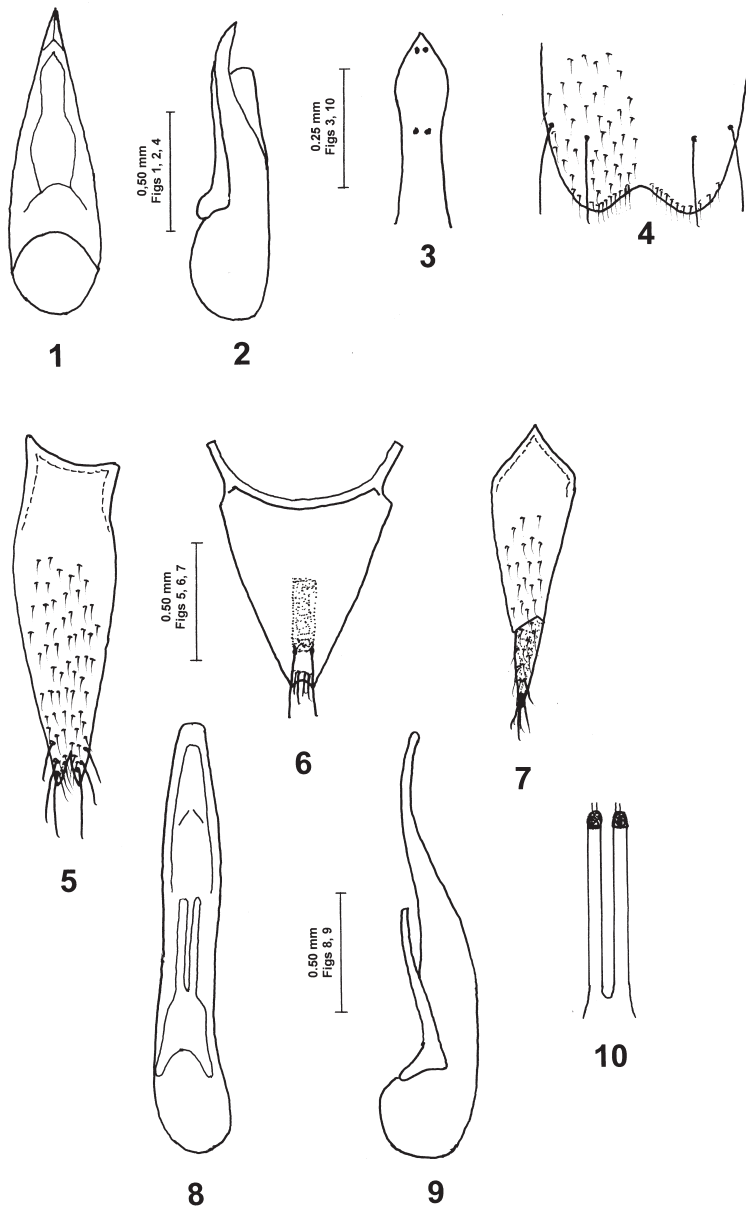
Pronotum longer than wide (ratio 24 : 22), distinctly narrowing anteriorly. Each dorsal row with six punctures, punctures 2–5 equidistant, distance between punctures 1–2 and 5–6 about 1.5 times as large as interval between punctures 2–5. Each sublateral row with two punctures, puncture 1 situated behind level of puncture 3 in dorsal row. Microsculpture similar to that on head.

Scutellum very densely and finely punctate, punctures as large as eye facets, separated by distance larger than their diameter. Surface with traces of fine microsculpture.

Elytra as wide as long, very slightly widened posteriad, punctation fine and dense, punctures as large as eye facets, separated by one puncture diameter in transverse direction. Surface between punctures without microsculpture; setation brown.

Legs. Metatibia longer than metatarsus (ratio 18 : 16). Relative length of metatarsomeres: 1–5 = 4.5-3-2.5-2-5.

Abdomen wide, slightly narrowed from tergite V posteriad. First four tergites with two basal lines, elevated area between basal lines on tergites I–III more or less densely punctate, elevated area on tergite IV with scattered punctures. Punctuation of tergites similar to that on elytra, gradually becoming sparser towards posterior margin of each tergite, surface without microsculpture; setation similar to that on elytra.



Figs 1–10. 1–7 – *Philonthus jelineki* sp. nov. 1 – aedeagus, ventral view; 2 – aedeagus, lateral view; 3 – apex of paramere with sensory peg setae; 4 – apical portion of male sternite VIII; 5 – male sternite IX; 6 – female tergite X; 7 – gonocoxite of female genital segment. 8–10 – *Philonthus jelinekianus* sp. nov. 8 – aedeagus, ventral view; 9 – aedeagus, lateral view; 10 – apex of paramere with sensory peg setae.

Male. Protarsomeres 1–3 strongly dilated, sub-bilobed, densely covered with modified pale setae ventrally, protarsomere 4 considerably narrower than preceding ones, not sub-bilobed, lacking modified pale setae ventrally. Sternite VIII (Fig. 4); sternite IX (Fig. 5); aedeagus (Figs. 1–3).

Female. Protarsomeres 1–3 only slightly dilated, scarcely sub-bilobed, covered with few modified pale setae ventrally, protarsomere 4 only slightly narrower than preceding ones, lacking modified setae ventrally. Tergite X (Fig. 6); gonocoxite of female genital segment (Fig. 7).

Differential diagnosis. *Philonthus jelineki* sp. nov. is very similar to *P. smaragdinus* Tottenham, 1949 (Fig. 34), from which it differs by the presence of microsculpture on the head and pronotum, longer pronotum and different shape of the aedeagus.

Etymology. It is my pleasure to dedicate this and the following new species to my friend and prominent Czech entomologist Dr. Josef Jelinek, specialist on the Nitidulidae.

Bionomics. All species were collected in ground litter near brackish pools at the beginning of January.

Distribution. Known only from the type locality in the Northern Cape Province in the Republic of South Africa.

Philonthus jelinekianus sp. nov.

(Figs. 8–12)

Type locality. Nigeria, Ibadan.

Type material. HOLOTYPE: ♂, 'NIGERIA, Ibadan, at light, 26. i. 1956, G. H. Caswell, Coll. B. M. 1956-673. // HOLOTYPE, *Philonthus jelinekianus* sp. nov., Hromádka det., 2008 [red oblong printed label]' (BMNH), PARATYPES: 2 spec, 'NIGERIA, Umuahia, J. L. Gregory, 15.VII.1960. c. e. Tottenham Collection, B. M. 1974-587 [red oblong printed type labels]' (BMNH, LHPC).

Description. Body length 8.3–8.9 mm, length of forebody (to end of elytra) 4.3–4.7 mm.

Colouration. Head black, antennal sockets and clypeus along anterior margin yellow-brown, pronotum and scutellum reddish-brown to dark brown, elytra anthracite black, elytral suture, posterior margin of elytra and epipleura very narrowly reddish, abdomen dark brown, posterior margin of all tergites narrowly reddish brown, maxillary and labial palpi and antennae brown-yellow, ventral side of antennomere 1 yellow, dorsal side brown-yellow, legs brown-yellow to brown, tibiae somewhat darker.

Head quadrangular, slightly narrowed behind eyes, distinctly wider than long (ratio 30 : 24), posterior angles with one small tooth (as in *P. morio* Boheman, 1848, Fig. 35), eyes very large, distinctly longer than temples (ratio 13 : 7), slightly convex. Four punctures situated between eyes, distance between medial interocular punctures four times as large as distance between medial and lateral interocular puncture, posterior margin of eyes with three coarse punctures, surface without microsculpture.

Antennae long, reaching posterior sixth of pronotum when reclined, all antennomeres longer than wide, relative length of antennomeres: 1–11: 9-6-6-5-5-5-5-4.5-4.5-4-5.

Pronotum as wide as long, hardly narrowed anteriorly, each dorsal row with five coarse punctures, punctures 1–4 equidistant, interval between punctures 4–5 slightly larger than distance between punctures 1–4. Each sublateral row with two punctures, parallel with dorsal row, puncture 1 situated behind level of puncture 3 in dorsal row, surface without microsculpture.

Scutellum very densely and finely punctate, punctures somewhat larger than eye facets, separated by one puncture diameter in transverse direction.

Elytra wider than long (ratio 48 : 45), slightly widened posteriad, punctuation very fine and dense, punctures as large as eye facets. Distance between punctures very close, punctures locally slightly contiguous. Surface between punctures without microsculpture; setation brown.

Legs. Metatibia shorter than metatarsus (ratio 24 : 28), relative lengths of metatarsomeres: 1–5: 9-4-3.5-3-7.

Abdomen wider, slightly narrowed from tergite V posteriad. Punctuation conspicuously fine and dense, first four abdominal tergites with two basal lines, elevated area between basal lines on visible tergites I–II finely punctate, elevated area on tergites III–IV impunctate; setation similar to that on head.

Male. Protarsomeres 1–3 strongly dilated, sub-bilobed, each densely covered with modified pale setae ventrally, protarsomere 4 distinctly narrower than preceding ones, with only a few modified pale setae ventrally. Sternite VIII (Fig. 11); sternite IX (Fig. 12); aedeagus (Figs. 8–10).

Female. Unknown.

Differential diagnosis. *Philonthus jelinekianus* sp. nov. is very similar to *P. morio* Boheman, 1848 (Fig. 35), from which it differs by paler pronotum and scutellum, shorter elytra and different shape of the aedeagus.

Etymology. Dedicated to Josef Jelínek as well; see the previous species.

Bionomics. Unknown.

Distribution. South-west Nigeria.

Philonthus loxodonta sp. nov.

(Figs. 13–19)

Type locality. Republic of South Africa, E. Transvaal, Pilgrims.

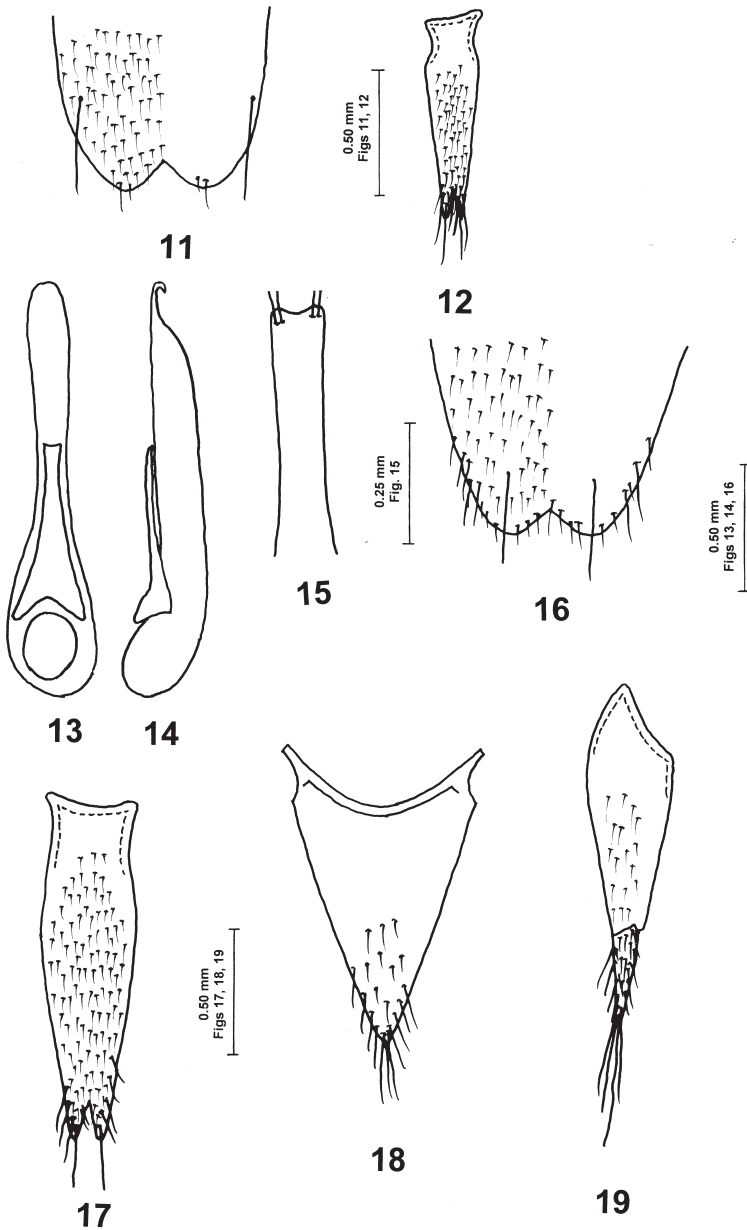
Type material. HOLOTYPE: ♂, 'REPUBLIC OF SOUTH AFRICA: E. Transvaal, Pilgrims rest, 19.–31. xii.1985, FMHD # 85–860, relict nature, for., dung traps, S. Peck P # 85–293 // HOLOTYPE. *Philonthus loxodonta* sp. nov., Hromádka, det. 2008 [red oblong printed label]' (FMNH). PARATYPES: 25 spec., same label data as in holotype (FMNH, LHPC); 1 spec., 'Transvall, Pilgrims Rest. 1400m, 11.–31. 1985, FMHD # 85–842, FIT in relict native forest, S. Peck, P # 85–275' (FMNH); 5 spec., 'E. Transvall, 11km, SE Pilgrims rest, 21.–30. xii.1985, FMHD # 85–865, relict for., carrion trap, S. Peck P # 85–298' (FMNH, LHPC) [all paratypes with red oblong printed type labels].

Description. Body length 8.1–10.1 mm, length of fore body (to end of elytra) 4.2–4.8 mm.

Colouration. Head and pronotum black, elytra and abdomen black-brown, locally slightly blue iridescent, maxillary and labial palpi and antennae black, base of antennomere 2 and femora brown-yellow, tibiae and tarsi uniformly black.

Head with rounded outline, as wide as long, eyes longer than temples (ratio 12 : 10), with four coarse punctures between eyes, distance between medial interocular punctures about four times as large as distance between medial and lateral interocular puncture, posterior angles indistinct, with several coarse punctures and several bristles of unequal length, surface with exceedingly irregular, indistinct microsculpture.

Antennae very long, exceeding posterior margin of pronotum by about the length of terminal antennomere when reclined, all antennomeres longer than wide, relative lengths of antennomeres: 1–11: 10-5-6-4.5-4.5-4.5-4.5-4.5-4.5-4.5-6.5.



Figs 11–19. 11–12 – *Philonthus jelinekianus* sp. nov. 11 – apical portion of male sternite VIII; 12 – male sternite IX. 13–19 – *Philonthus loxodonta* sp. nov. 13 – aedeagus, ventral view; 14 – aedeagus, lateral view; 15 – apex of paramere with sensory peg setae; 16 – apical portion of male sternite VIII; 17 – male sternite IX; 18 – female tergite X; 19 – gonocoxite of female genital segment.

Pronotum as wide as long, distinctly narrowed anteriorly, anterior angles with several short bristles, posterior angles conspicuously rounded, each dorsal row with five punctures, punctures 2–4 equidistant, distance between punctures 1–2 and 4–5 slightly larger than interval between punctures 2–4, each sublateral row with two fine punctures. Microsculpture similar to that on head, sides with several longer bristles.

Scutellum finely and sparsely punctate, punctures as large as eye facets, separated by 1.5–2 puncture diameters in transverse direction; setation black.

Elytra wider than long (ratio 50 : 45), very slightly widened posteriorly, punctation coarse and dense, punctures slightly larger than eye facets, transverse distance between punctures mostly smaller than their diameter. Surface between punctures without microsculpture, lateral margins with several long black bristles, posterior margin of elytra with many black bristles of unequal length; setation brownish grey.

Legs. Metatibia slightly shorter than metatarsus (ratio 28 : 30), relative length of metatarsomeres: 1–5: 9.5-5-4.5-4-7.

Abdomen wide, slightly narrowed posteriorly from tergite V, first three tergites with two basal lines, elevated area between basal lines densely and finely punctate, punctation of tergites conspicuously fine and dense, covering almost whole tergites, diameter of punctures smaller than eye facets, surface between punctures without microsculpture; setation similar to that on elytra.

Male. Protarsomeres 1–3 strongly dilated and sub-bilobed, sparsely covered with modified pale setae ventrally, protarsomere 4 distinctly narrower than preceding ones. Sternite VIII (Fig. 16), sternite IX (Fig. 17), aedeagus (Figs. 13–15).

Female. Protarsomeres 1–3 moderately dilated, scarcely sub-bilobed, covered with numerous modified pale setae ventrally. Tergite X (Fig. 18); gonocoxite of female genital segment (Fig. 19).

Differential diagnosis. *Philonthus loxodonta* sp. nov. may be distinguished from the most similar species *P. tragelaphus* sp. nov. by a narrower pronotum, different colouration of inner side of the tibiae and different shape of the aedeagus.

Etymology. The name of this species, a noun in apposition, is the Latin generic name of the African Elephant *Loxodonta africana* (Blumenbach, 1779).

Bionomics. In undisturbed forest, in dung and carrion traps.

Distribution. Known from the Gauteng Province (= Transvaal) of the Republic of South Africa.

Philonthus phacochoerus sp. nov.

(Figs. 20–26)

Type locality. Liberia, Mt. Nimba, Grassfield.

Type material. HOLOTYPE: ♂, 'LIBERIA, Mt. Nimba, Grassfield, 16.–25.ix.1979, I. Hanski, B. M. 1980-85, in human faeces, lowland forest 500m // Holotype, *Philonthus phacochoerus* sp. nov. Hromádka det., 2008 [red oblong printed label]' (FMNH). PARATYPES: 10 spec., same label data as in holotype [all paratypes with red printed type labels] (FMNH, LHPC).

Description. Body length 6.6–8.9 mm, length of fore body (to end of elytra) 3.4–4.3 mm.

Colouration. Head black, maxillary and labial palpi yellow-brown, terminal maxillary palpomere with paler apex, mandibles dark brown, antennal sockets, labrum, ventral side of antennomere 1 yellow-brown, dorsal side of antennomere 1 and remaining antennomeres black-brown, pronotum black-brown with sides and posterior margins slightly golden iridescent, scutellum brown-black, elytra yellow-brown, suture narrowly darker, posterior margin of all abdominal tergites broadly yellow-brown, paratergites, femora and tarsi yellow-brown, tibiae somewhat darker.

Head with square outline with obtusely rounded posterior angles, wider than long (ratio 36 : 28). Eyes as long as temples, four punctures situated between eyes, distance between medial interocular punctures almost three times as long as distance between medial and lateral interocular puncture, posterior margin of eyes with two coarse punctures, temporal area almost impunctate, posterior angles with several coarse punctures and with one long black bristle, surface with very fine and dense microsculpture consisting of transverse and oblique waves.

Antennae long, reaching posterior sixth of pronotum when reclined, relative lengths of antennomeres: 1–11: 11-6-6-4.5-4-4-4-4-4-4-5.

Pronotum longer than wide (ratio 40 : 38), very slightly narrowed anteriorly, posterior angles conspicuously rounded, each dorsal row with four coarse equidistant punctures, each sublateral row with two fine punctures, puncture 2 situated behind level of puncture 3 of dorsal row. Anterior angles and sides with several bristles of unequal length, microsculpture similar to that on head.

Scutellum coarsely punctate, punctures as large as eye facets, separated by 1.5–2 puncture diameters in transverse direction, surface with fine, mostly transverse and undulating microsculpture.

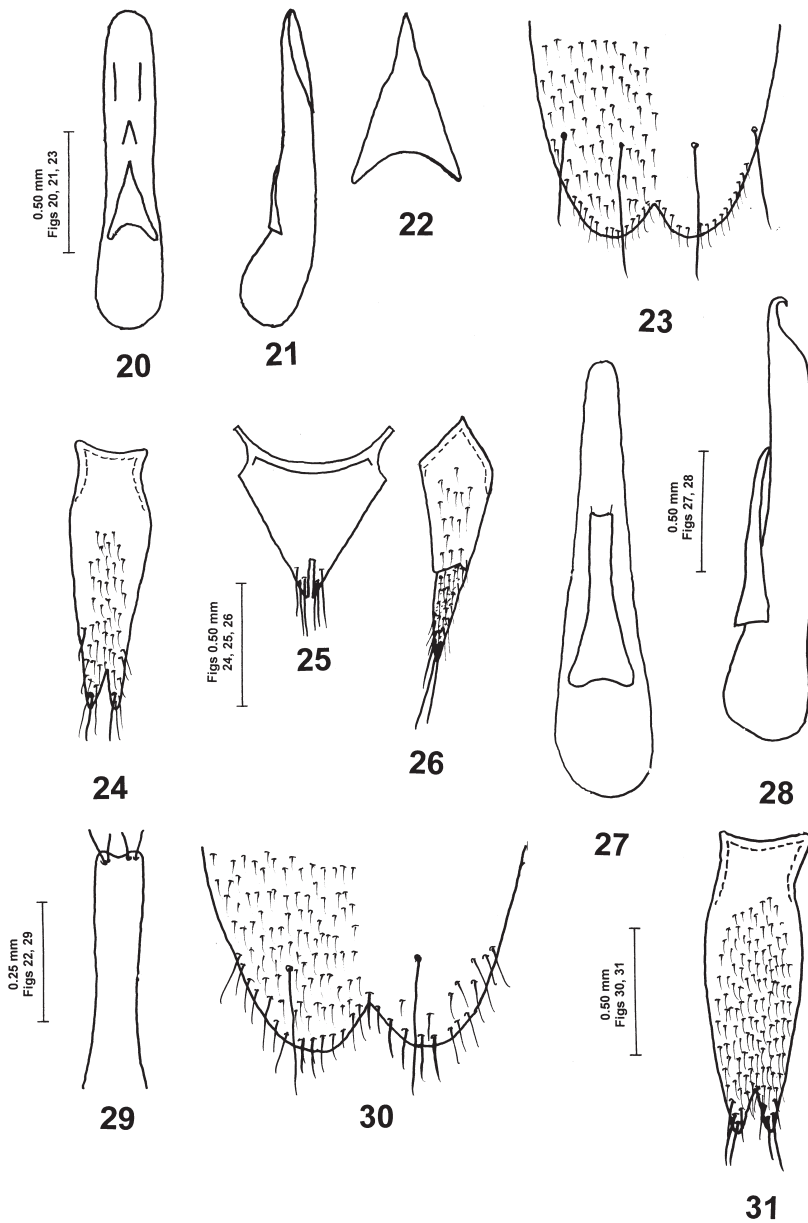
Elytra wider than long (ratio 50 : 45), widened posteriorly, punctation fine and sparse, punctures of two sizes, smaller punctures somewhat smaller than eye facets, separated by 2–3 puncture diameters, larger punctures distinctly larger than eye facets, irregularly arranged, mostly separated by three puncture diameters. Sides with several long black bristles, surface without microsculpture; setation yellow.

Legs. Metatibia slightly shorter than metatarsus (ratio 28 : 30). Relative lengths of metatarsomeres: 1–5: 9-4-4-4-7.

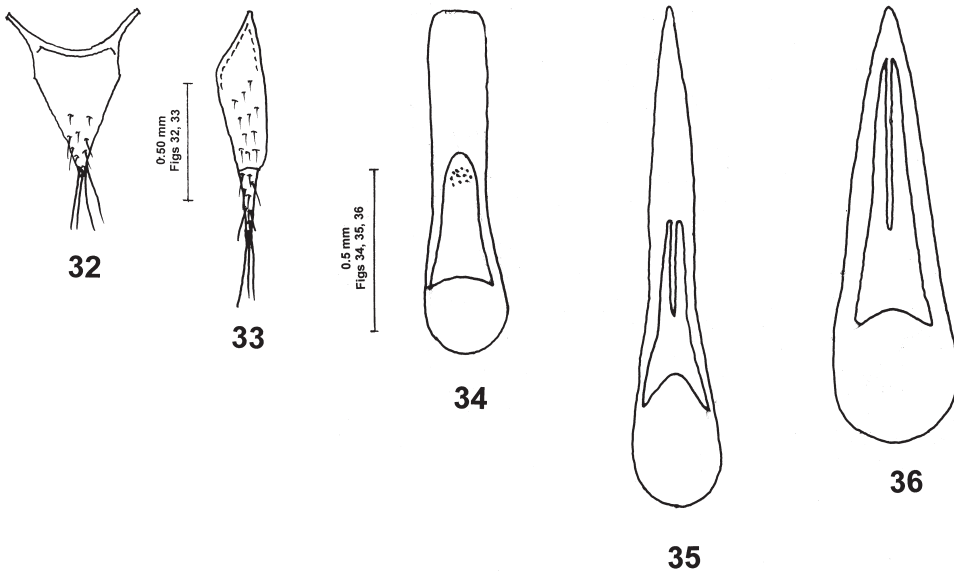
Abdomen wide, slightly narrowed posteriorly from fifth visible tergite, first three visible tergites with two basal lines, elevated area between basal lines impunctate. Punctuation of visible tergites very fine and dense, punctures smaller than eye facets, separated by distance equal to diameter of puncture or slightly smaller. Lateral margins with several long brown bristles, setation long, yellowish brown, surface without microsculpture.

Male. Protarsomeres 1–3 conspicuously dilated and sub-bilobed, covered with modified pale setae ventrally, protarsomere 4 distinctly narrower than preceding ones. Sternite VIII (Fig. 23); sternite IX (Fig. 24); aedeagus (Figs. 20–22).

Female. Protarsomeres 1–3 only slightly dilated, not sub-bilobed, covered with only few modified pale setae ventrally, protarsomere 4 only slightly narrower than preceding ones. Tergite X (Fig. 25); gonocoxite of female genital segment (Fig. 26).



Figs 20–31. 20–26 – *Philonthus phacochoerus* sp. nov. 20 – aedeagus, ventral view; 21 – aedeagus, lateral view; 22 – paramere; 23 – apical portion of male sternite VIII; 24 – male sternite IX; 25 – female tergite X; 26 – gonocoxite of female genital segment. 27–31 – *Philonthus tragelaphus* sp. nov. 27 – aedeagus, ventral view; 28 – aedeagus, lateral view; 29 – apex of paramere with sensory peg setae; 30 – apical portion of male sternite VIII; 31 – male sternite IX.



Figs. 32–36. 32–33 – *Philonthus tragelaphus* sp. nov. 32 – female tergite X; 33 – gonocoxite of female genital segment. 34 – *P. smaragdinus* Tottenham, 1949, aedeagus, ventral view (Democratic Republic of the Congo). 35 – *P. morio* Boheman, 1848, aedeagus, ventral view (Malawi); 36 – *P. lasti* Tottenham, 1955, aedeagus, ventral view (Botswana).

Differential diagnosis. *Philonthus phacochoerus* sp. nov. may be distinguished from the similar *P. lasti* Tottenham, 1955 (Fig. 36) by a quadrate head, shorter eyes, uniformly red and sparsely punctate elytra and different shape of the aedeagus.

Etymology. The name of this species, a noun in apposition, is the Latin generic name of the African warthog *Phacochoerus aethiopicus* (Pallas, 1767).

Bionomics. All specimens of *P. phacochoerus* sp. nov. were collected in human faeces in mid September.

Distribution. Northern Liberia.

***Philonthus tragelaphus* sp. nov.**

(Figs. 27–33)

Type locality. Republic of South Africa: Cape Prov., Knysna, Diepwale.

Type material. HOLOTYPE: ♂, 'REPUBLIC OF SOUTH AFRICA: Cape Prov., Knysna, Diepwale, 12.–23. xii. 1981, FMHD # 81–629, between litter, S. Peck, berlese, Field Museum. // Holotype *Philonthus tragelaphus* sp. nov. Hromádka det., 2008 [red oblong printed label]' (FMNH). PARATYPES: 26 spec., same label data as in holotype (FMNH, LHPC). [all paratypes with red printed oblong type labels].

Description. Body length: 9.2–10.0 mm, length of forebody (to end of elytra) 4.2–4.8 mm.

Colouration. Head, pronotum and antennae black, elytra, abdomen, maxillary and labial palpi black-brown, femora yellow-brown, tibiae black-brown with inner side yellow-brown, tarsi black-brown.

Head with rounded quadrangular outline, hardly wider than long (ratio 25.5 : 24.5), posterior angles entirely obliterated, with several variably long black bristles, eyes distinctly longer than temples (ratio 12 : 9). Head behind eyes slightly narrowed towards neck, with four punctures between eyes, distance between medial interocular punctures about four times as large as distance between medial and lateral interocular puncture, posterior margin of eyes with two coarse punctures, temporal area almost impunctate, surface with very fine irregular microsculpture here and there.

Antennae long, exceeding posterior margin of pronotum by about the length of terminal antennomere when reclined, all antennomeres longer than wide, relative lengths of antennomeres: 1–11: 10-5-6-5-5-5-4.5-4.5-4-4-5.

Pronotum wider than long (ratio 39 : 36), distinctly narrowing anteriorly, posterior angles conspicuously rounded. Each dorsal row with five punctures, distance between punctures 2–4 equidistant, distance between punctures 1–2 and 4–5 larger than distance between punctures 2–4. Each sublateral row with two punctures, puncture 1 situated behind level of puncture 3 of dorsal row, puncture 2 situated behind level of puncture 4 of dorsal row. Lateral margins with several long black bristles. Surface with microsculpture similar to that on head.

Scutellum coarsely punctate, with regular intervals between punctures, punctures as large as eye facets, separated by two puncture diameters in transverse direction, surface without microsculpture; setation long and dark.

Elytra wider than long (ratio 50 : 46), slightly widened posteriad, punctation rather fine and dense, punctures slightly larger than eye facets, separated mostly by one puncture diameter. Along lateral margins with several long black bristles, surface without microsculpture; setation long and brown-grey.

Legs. Metatibia slightly shorter than metatarsus (ratio 30 : 32), relative lengths of metatarsomeres: 1–5: 12-5.5-4-4-7.

Abdomen narrowed posteriad from fifth visible tergite, first three visible tergites with two basal lines, elevated area between basal lines impunctate, punctation of visible tergites much finer and denser than on elytra, becoming sparser and finer towards posterior margin of each tergite, surface between punctures without microsculpture; setation similar to that on elytra.

Male. Protarsomeres 1–3 dilated, sub-bilobed, densely covered with modified yellow-brown setae ventrally, protarsomere 4 slightly dilated, much narrower than preceding ones. Sternite VIII (Fig. 30); sternite IX (Fig. 31); aedeagus (Figs. 27–29).

Female. Protarsomeres 1–3 slightly dilated, scarcely sub-bilobed, protarsomere 4 only slightly dilated, not sub-bilobed, lacking modified pale setae ventrally. Tergite X (Fig. 32); gonocoxite of female genital segment (Fig. 33).

Differential diagnosis. This new species is very similar to *P. loxodonta* sp. nov., but differs from it by a wider pronotum, different colouration of the inner side of the tibiae and different shape of the aedeagus.

Etymology. The name of this species, a noun in apposition, is the Latin generic name of the African koodoo *Tragelaphus strepsiceros* (Pallas, 1764).

Bionomics. All specimens of *P. tragelaphus* sp. nov. were collected in litter in the middle of December.

Distribution. Known only from the type locality in the Eastern Cape Province of the Republic of South Africa.

Acknowledgements

I wish to express my sincere thanks to James Boone (FMNH), Maxwell Barclay and Roger Booth (both BMNH) for the loan of the African material, and to Alexey Solodovnikov (Zoological Museum, University of Copenhagen, Denmark) and Harald Schillhammer (Naturhistorisches Museum, Wien, Austria) for valuable comments and corrections of the manuscript.

Reference

- HROMÁDKA L. 2008a: Revision of Afrotropical species of the *Philonthus abyssinus* species group (Coleoptera: Staphylinidae: Philonthina). *Acta Entomologica Musei Nationalis Pragae* **48**: 37–50.
- HROMÁDKA L. 2008b: Revision of Afrotropical species of the *Philonthus peripateticus* species group (Coleoptera: Staphylinidae: Philonthina). *Acta Entomologica Musei Nationalis Pragae* **48**: 51–65.
- HROMÁDKA L. 2008c: Revision of Afrotropical species of the *Philonthus turbidus* species group (Coleoptera: Staphylinidae: Philonthina). *Klapalekiana* **44**: 207–252.
- HROMÁDKA L. 2009a: Revision of Afrotropical species of the *Philonthus caffer* species group (Coleoptera: Staphylinidae: Philonthina). *Acta Entomologica Musei Nationalis Pragae* **49**: 161–190.
- HROMÁDKA L. 2009b: Revision of Afrotropical species of the genus *Mentophilonthus* (Coleoptera: Staphylinidae: Philonthina). *Acta Entomologica Musei Nationalis Pragae* **49**: 119–160.
- HROMÁDKA L. 2009c: Revision of Afrotropical species of the *Philonthus nigriceps* species group (Coleoptera: Staphylinidae: Philonthina). *Studies and Reports of District Museum Prague-East, Taxonomical Series* **5**: 115–126.
- TOTTENHAM C. E. 1949: Studies in the genus *Philonthus* Stephens (Coleoptera). *Transactions of the Royal Entomological Society of London* **100**: 291–362.