INSTITUT DES PARCS NATIONAUX DU CONGO ET DU RUANDA-URUNDI

Exploration du Parc National de la Garamba

MISSION H. DE SAEGER

en collaboration avec

P. BAERT, G. DEMOULIN, I. DENISOFF, J. MARTIN, M. MICHA, A. NOIRFALISE,
P. SCHOEMAKER, G. TROUPIN et J. VERSCHUREN (1949-1952).

FASCICULE 21

BRUXELLES

1961

IMPRIMERIE HAYEZ, s.p.r.l.
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Bruxelles 15

PARC NATIONAL DE LA GARAMBA. — MISSION H. DE SAEGER

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Fascicule 21 (1)

CESTODES [1]

PAR

JEAN G. BAER (Neuchâtel) et A. FAIN (Anvers)

I. — Ordre PSEUDOPHYLLIDEA CARUS, 1863.

Famille DIPHYLLOBOTHRIIDAE LUHE, 1910.

1. — **Bothridium pithonis** BLAINVILLE, 1824.

Hôtes. — N° 1629 : nombreux spécimens. Localité : II/dd/8. Le nom de l'hôte ne nous a pas été communiqué.

N° 285*a* : 2 spécimens dans l'estomac d'un *Textor cucullatus feminimus*. Il s'agit évidemment d'une erreur de numéro, car ce cestode est un parasite du python : *Python sebae* GMELIN en Afrique centrale.

2. — **Cephalochlamys namaquensis** (COHN, 1906).

Hôte. — *Xenopus muelleri* (PETERS). Localités : II/fd/14 (n° 1344/1); II/gd/11 (n° 2018 et 2064); Ndelele/14 (n° 2078).

Cette espèce a été décrite chez *Xenopus laevis*. C'est la première fois qu'elle a été découverte au Congo.

[1] Manuscrit déposé le 19 janvier 1960.

II. — Ordre TETRAPHYLLIDEA Carus, 1863.

Famille ICHTYOTAENIIDAE Ariola, 1899.

1. — **Ophiotaenia theileri** Rudin, 1917.

Hôte. — *Bitis lachesis* (Laurenti). Localités : II/gd/4 (n° 1521), II/gd/11 (n° 1991 et n° 1992); II/gd/10 (n° 2012).

Nous avons signalé précédemment la présence de ce cestode chez *Bitis arietans* au Parc National de l'Upemba (Baer et Fain, 1955).

2. — **Ophiotaenia** sp.

Hôte. — *Ptyrticus t. turdinus* (Hartlaub). (n° 217). Localité : Région Bagbele. Quelques proglottis terminaux d'un *Ophiotaenia*. Il s'agit soit d'un pseudoparasitisme, soit d'une erreur de numéro, ce cestode étant un parasite des sauriens.

III. — Ordre CYCLOPHYLLIDEA Braun, 1900.

Famille ANOPLOCEPHALIDAE Fuhrmann, 1907.

Sous-famille ANOPLOCEPHALINAE Fuhrmann, 1907.

Catenotaenia lobata Baer, 1925.

Hôte. — *Mastomys coucha* (Smith). (n° 553). Localité : II/GD/4.

Notre unique spécimen mesure 5 cm de long environ. Diamètre du scolex : 300 µ, des ventouses 130 µ. Poche du cirre longue de 150 à 175 µ, large de 45 µ. Il y a environ 200 testicules. Ramifications utérines : de 13 à 20 de chaque côté.

Sous-famille LINSTOWIINAE Fuhrmann, 1907.

Oochoristica sp.

Hôte. — N° 1264 (?). Localité : II/gd/4.

L'hôte de ces spécimens n'étant pas connu, il nous paraît hasardeux de faire une diagnostique spécifique. Nous pouvons toutefois les ranger dans le groupe *crassiceps*.

Sous-famille THYSANOSOMINAE Fuhrmann, 1907.

Avitellina centripunctata (Rivolta, 1874).

Hôte. — *Alcelaphus lelwel* (Heuglin). (n° 1742). Localité : PFNK/15.

Nombreux spécimens malheureusement tous extrêmement contractés. Cette espèce a déjà été signalée au Congo chez plusieurs espèces d'antilopes ainsi que chez le buffle noir et les bovidés (Mahon, 1954; Baer et Fain, 1955).

Famille DILEPIDIDAE Fuhrmann, 1907.

Echinorhynchotaenia tritesticulata Fuhrmann, 1909.

Hôte. — *Anhinga rufa rufa* (Daudin). (n° 1542). Localité : II/Fd/17.

Quelques fragments très macérés et sans scolex de cette espèce très commune chez cet hôte.

Famille DAVAINEIDAE Fuhrmann, 1907.

Sous-famille DAVAINEINAE Braun, 1900.

1. — **Raillietina** (**Raillietina**) **mahonae** Baer et Fain, 1955.

Hôte. — *Choeromys harrisoni* (Thomas and Wroughton). Localité : II/hd/4. (n° 1336) et II/gd/8 (n° 1424).

Nous avons décrit cette espèce chez *Thryonomys swinderianus* (Temminck) au Parc National de l'Upemba. Le nouvel hôte *Choeromys harrisoni* est zoologiquement très voisin du précédent et il n'est donc pas surprenant d'y retrouver ce même parasite. Les spécimens provenant de *Choeromys* n° 1336 correspondent bien aux types originaux sauf toutefois par les dimensions, sensiblement plus grandes, de la poche du cirre qui mesure ici de 200 à 240 µ de long pour 75 à 90 µ de large, Ces spécimens sont longs de 26 à 56 mm et larges de 1 à 2,2 mm .Les crochets du rostre, au nombre de 70 à 100, sont disposés sur 2 rangs. Ces crochets mesurent de 33 à 36 µ (rangée externe) et 39 à 45 µ (rangée interne). Ventouses très finement épineuses. La poche du cirre est munie de parois épaisses. Testicules au nombre de 50 environ disposés en 2 groupes séparés par l'ovaire, le groupe poral ne comptant que 9 à 12 testicules. Latéralement les testicules dépassent les canaux excréteurs. Le cirre est interne. Les segments gravides comptent de 140 à 160 capsules ovifères renfermant chacune de 5 à 9 œufs. Les

spécimens provenant du *Choeromys* n° 1424 sont extrêmement contractés et ne mesurent que 9 mm de long au maximum.

Nous rattachons provisoirement tous ces spécimens à *R.* (*R.*) *mahonae* malgré les dimensions sensiblement plus grandes de la poche du cirre et quelques autres caractères différentiels moins importants.

2. — **Raillietina** (**Raillietina**) **macrocirrosa** FUHRMANN, 1909.

Hôte. — *Centropus senegalensis senegalensis* (LINNÉ) (n° 19). Localité : I/a/4.

Plusieurs spécimens tous incomplets, sans scolex. La poche du cirre mesure 105 μ de long pour 60 μ de large. Il y a 32 à 41 testicules; capsules ovifères contenant de 5 à 6 œufs; atrium génital entouré d'un épais sphincter.

3. — **Raillietina** (**Raillietina**) **hertwigi** (MOHA, 1907).

Hôte. — *Aquila rapax raptor* BREHM. Localité : Ppk/42 (n° 1682).

Plusieurs spécimens incomplets sans scolex.

4. — **Raillietina** sp.

Hôte inconnu (1721). Localité : Pali/9.

Spécimens extrêmement contractés, non identifiables spécifiquement.

Sous-famille IDIOGENINAE FUHRMANN, 1907.

1. — **Chapmania macrocephala** FUHRMANN, 1943.

Hôte. — *Neotis cafra denhami* (CHILDREN). Localité : Ppk/90 (n° 1426 et n° 1440).

Le plus long spécimen avec scolex mesure 20 cm, l'organe parutérin apparaît dans les derniers segments du strobile.

Ces spécimens correspondent bien à la description originale.

2. — **Sphyronchotaenia uncinata** RANSOM, 1911.

Hôte. — *Neotis cafra denhami* (CHILDREN). Localité : Ppk/90 (n° 1426).

Plusieurs spécimens immatures et mal conservés.

Famille HYMENOLEPIDIDAE Fuhrmann, 1907.

Sous-famille HYMENOLEPIDINAE Perrier, 1897.

Hymenolepis sp.

Hôte. — *Sarkidiornis melanotos* (Pennant) (n° 1723). Localité : Mabanga.

Un spécimen extrêmement contracté sans scolex.

Famille TAENIIDAE Ludwig, 1886.

Taenia parva Baer, 1924.

Hôte. — *Genetta* sp. (n° 1725). Localité : II/gc/4.

Spécimens très contractés. Les crochets mesurent respectivement de 360 à 400 µ pour les grands, 230 à 260 µ pour les petits.

CESTODES LARVAIRES.

Sparganum.

Hôtes. — *Leptopelis* (n° 1535), dans la bouche : Localité II/gd/4 et *Crocidura* sp. (n° 1751), dans les muscles : Localité : II/gd/10.

CESTODES INDÉTERMINABLES.

N° 20 : *Numida meleagris major* (Hartlaub) : spécimens indurés et très contractés.

N° 597 : *Gypophierax angolensis* (Gmelin) : fragments macérés indéterminables.

N° 1435 : *Anthus leucophrys zenkeri* Neumann : plusieurs fragments macérés indéterminables.

N° 1721 : Hôte inconnu : Plusieurs spécimens extrêmement contractés.

N° 1849 : *Nycteris hispida* (Schreber) : fragments indéterminables.

LISTES DES HÔTES ET DE LEURS PARASITES.

Reptiles :

Leptopelis.
Sparganum sp.

Xenopus muelleri (PETERS).
Cephalochlamys namaquensis (COHN).

Bitis lachesis (LAURENTI).
Ophiotaenia theileri RUDIN.

?*Python sebae* GMELIN.
Bothridium pithonis (BLAINVILLE).

Oiseaux :

Centropus senegalensis senegalensis (LINNÉ).
Raillietina (R.) macrocirrosa (FUHRMANN).

Neotis cafra denhami (CHILDREN).
Chapmania macrocephala FUHRMANN.
Sphyronchotaenia uncinata RANSOM.

Anhinga rufa rufa (DAUDIN).
Echinorhynchotaenia tritesticulata FUHRMANN.

Sarkidiornis melanotos (PENNANT).
Hymenolepis sp.

Aquila rapax raptor BREHM.
Raillietina (R.) hertwigi (MOLA).

Mammifères :

Genetta sp.
Taenia parva BAER.

Crocidura sp.
Sparganum.

Choeromys harrisoni (THOMAS and WROUGHTON).
Raillietina (R.) mahonae BAER et FAIN.

Mastomys coucha (SMITH).
Catenotaenia lobata BAER.

Alcelaphus lelwel (HEUGLIN).
Avitellina centripunctata (RIVOLTA).

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BAER, J. G. et FAIN, A., 1955, Exploration du Parc National de l'Upemba, Mission G. F. DE WITTE, Cestodes, fasc. 36, pp. 3-38.

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Fascicule 21 (2)

EUAESTHETINAE [1]

(COLEOPTERA POLYPHAGA)

Fam. **STAPHYLINIDAE**

BY

DAVID H. KISTNER (Chico)

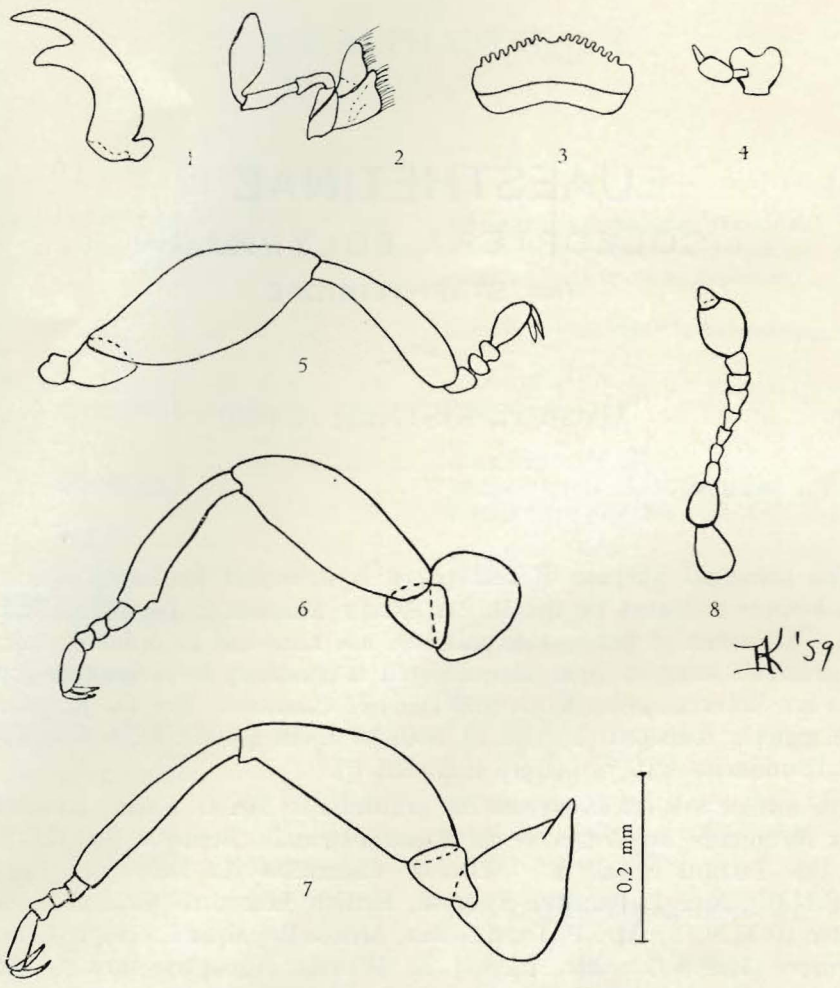
The principal purpose of this paper is to report the seven species of *Euasthetinae* collected by the H. DE SAEGER Mission in Garamba National Park. All seven of the species collected are new and in order to describe and illustrate some of them adequately it is necessary to revise two genera. These are *Schatzmayrina* KOCH and *Doletica* CAMERON. For the purposes of these generic revisions, species of both of these genera from outside the park boundaries will be herein included [2].

The author wishes to express his gratitude to Mr. G. FAGEL, Institut des Parcs Nationaux du Congo et du Ruanda-Urundi, Brussels (I.P.N.C.R.U.) and the Institut royal des Sciences naturelles de Belgique, Brussels (I.R.S.N.B.); Mr. J. BALFOUR-BROWNE, British Museum (Natural History), London (B.M.N.H.); Mr. P. BASILEWSKY, Musée Royal de l'Afrique Centrale, Tervuren (M.R.A.C.); Mr. Rupert L. WENZEL, Chicago Natural History Museum, Chicago (C.N.H.M.); Mr. A. DE BARROS MACHADO and Mr. Ed. JUNE, Laboratório de Investigacões Biológicas, Dundo (L.I.B.), for the loan of specimens included in this study. The initials given in parentheses above will be used to indicate the institutions where specimens cited are deposited. Specimens retained in the collection of the author will be indicated (D.K.).

[1] This paper is part of a more general study of the *Euaesthetinae*, which has been supported in large part by the National Science Foundation (GRANT No. G-6126).

Manuscript deposited on January, 18, 1960.

[2] Specimens and species collected from localities outside of the boundaries of the park will be indicated between brackets.



FIGS. 1, 3, 5, 6, 7, 8. — *Doletica wittei* KISTNER.
1 : Mandible; 3 : Labrum; 5 : Prothoracic leg; 6 : Mesothoracic leg; 7 : Metathoracic leg; 8 : Antenna.

FIGS. 2, 4. — *Doletica leleupi* n. sp.
2 : Maxilla; 4 : Labium.

Genus **DOLETICA** CAMERON.

Doletica CAMERON, Bull. Mus. roy. d'Hist. nat. Belg., 14 (37), 1938, p. 1; Publ. Cult. Mus. Dundo, Comp. Diam. Angola, 7, 1950, p. 112.

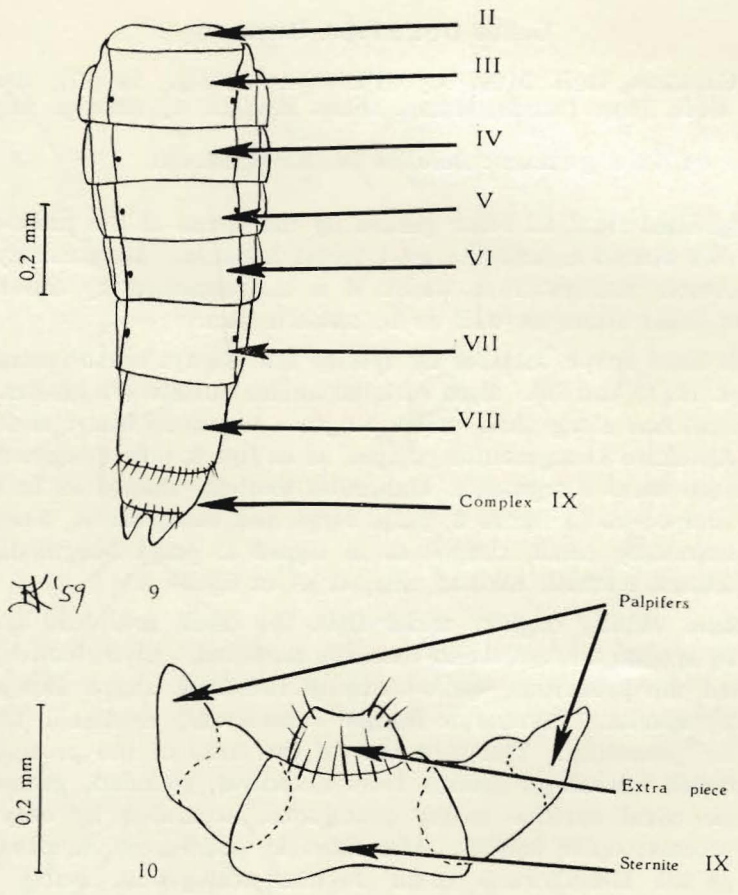
Type of the genus: *Doletica bicolor* CAMERON.

Distinguished from all other genera by the shape of the pronotum, the shape of the abdomen, and the 4-4-4 tarsal formula. Most closely related to *Ctenomastax* KRAATZ from which it is distinguished by the first two characters listed above as well as its smaller size.

Overall head shape variable by species but always dorso-ventrally flattened (figs. 14, 15 and 16). Eyes variable in size but always present. Gular sutures confluent along their entire length. Antennae insert at corner of vertex. Antennae 11-segmented, shaped as in fig. 8; note 2-segmented club and enlarged basal 2 segments. Mandibles toothed, shaped as in figure 1. Maxillae shaped as in figure 2; palpi large and conspicuous, 3-segmented. Labium extremely small, shaped as in figure 4; palpi 3-segmented, very small. Labium toothed, bilobed, shaped as in figure 3.

Pronotum usually slightly wider than the head, sculpture and shape variable by species, always dorso-ventrally flattened. Elytra usually a little wider than the pronotum, dorso-ventrally flattened; shape and sculpture variable by species. Prosternite formed considerably medial to the lateral edge of the pronotum. The inflection of the sides of the pronotum thus form flattened lateral projections from a central, rounded, pronotal disc. Prothoracic coxal cavities nearly contiguous, separated by only a very narrow process; open behind. Mesothoracic peritremes membranous, if present at all Mesothoracic coxal cavities contiguous, being partially separated by a very thin process. Mesosternum carinate along mid-line. Metasternum relatively long, smooth, with no unusual features. Secondary wings with usual staphylinid venation. Prothoracic legs shaped as in figure 7. Tarsal formula 4-4-4.

Overall abdominal shape as in figure 9. Tergites numbered as shown in the figure. Note identation of the lateral edge of tergite III near anterior border. Two pairs of paratergites (relatively wide) on segments III, IV, V, and VI; one pair on segments VII and VIII; none on segmental complex IX. Sternite III carinate along the midline, all other sternites smooth. Structure of the segment IX complex of the female can be best observed by spreading it out in a straight line (unfolding it). The result of this unfolding look like figure 10. It can thus be seen that there is an extra piece at the posterior border which gives the appearance of another tergite. In the male, there may be indentations along the border of sternite VIII (figs. 17-23) or this may be smooth. Also in the male, the segment IX complex is entire dorsally,



FIGS. 9-10. — *Doletica leleupi* n. sp.
9 : Abdomen, dorsal view with segments labelled; 10 : Enlargement of the 9th abdominal segment complex of female rolled out into a single plane.

while a portion of the ventral surface is modified into a dagger-shaped lobe. There is no extra piece present as in the female. Male genitalia bulbous, relatively thinly chitonized, variable by species. Female spermatheca membranous if present.

Remarks. — CAMERON (1938) first described this genus in the *Oxytelinae* (*Piestini*). From the shape of the mouth-parts, the clubbed antennae, and the structure of the head, it is clear that it falls into the *Euaesthetinae*. It is presently considered most closely related to *Ctenomastax* KRAATZ.

KEY TO SPECIES.

1. Head with an indentation on the dorsal surface which extends from the rear border to about the center of the head along the midline, at which point it diverges to give the front part of the head a sunken appearance (figs. 14, 15). 2

— Head relatively flat on top; with no median dorsal indentation or at most only the faintest hint of one (fig. 16) 3

2. Pronotum with a smoothly rounded posterior border (fig. 15); male genitalia shaped as in figure 32, with strongly sclerotized internal sac *capitocleftus* n. sp. (p. 19).

— Pronotum with the posterior border notched, not smooth, (fig. 14); male genitalia shaped as in figure 33, with lateral lobes fused to the median lobe, without a strongly sclerotized internal sac ..... *minutus* n.sp. (p. 23).

3. Eytra relatively flat; with only one raised ridge at the very border, then one small depressed area, then a wide expanse of flat even area (fig. 13) ..... *flavescens* n. sp. (p. 20).

— Elytra more rough, with at least 2 depressed areas and/or 2 raised ridges (figs. 11, 12 or 16) 4

4. Body very large, distinctly two colors; male genitalia asymmetrical, shaped as in figure 30 ..... *bicolor* CAMERON (p. 17).

— Body smaller, usually concolorous with at most a slight difference in color between pronotum and elytra; male genitalia symmetrical ... 5

5. Punctation coarse; wings reduced to very small pads; elytra shorter than the pronotum at the midline 6

— Punctation finer; wings normal sized; elytra wider than the pronotum at the midline 7

6. Male genitalia large, shaped as in figure 27 ..... *brevipennis* CAMERON (p. 17).

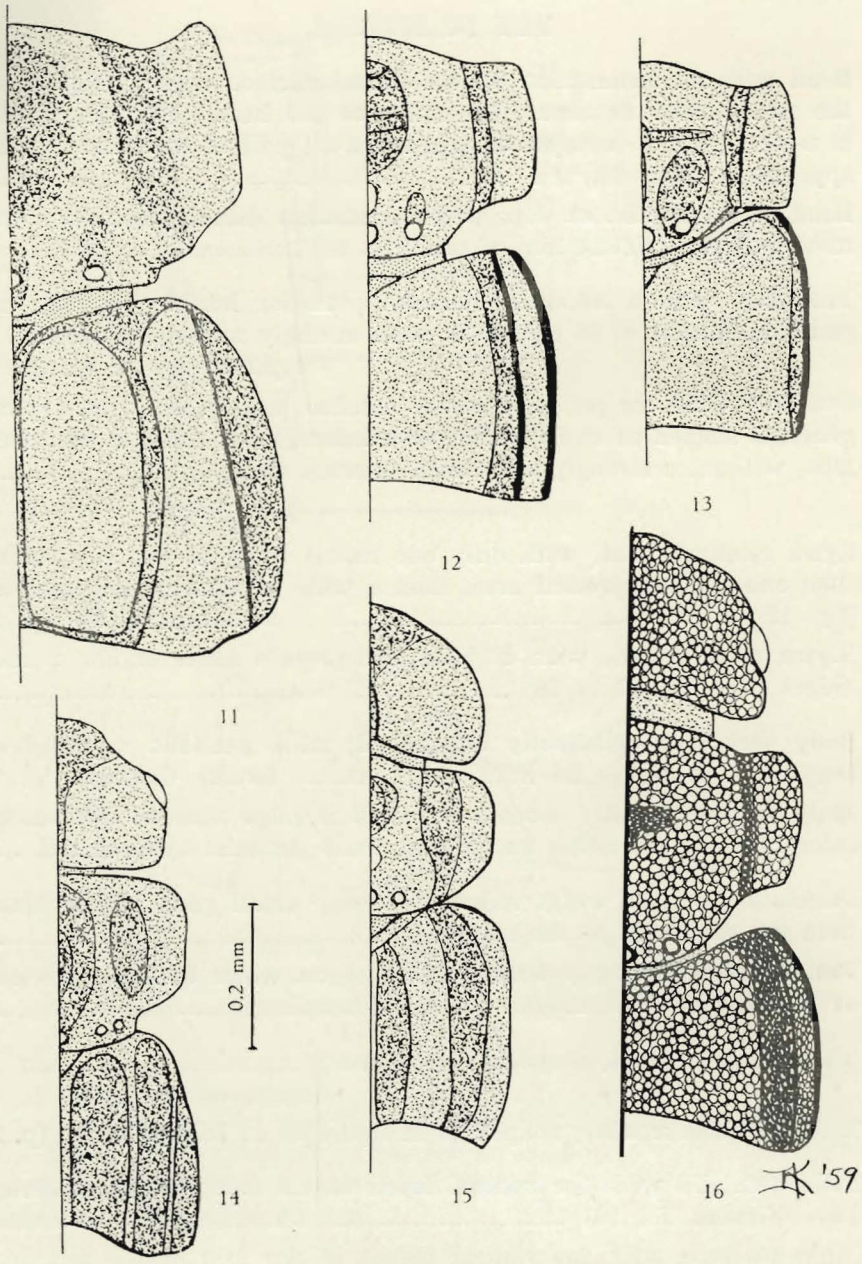
— Male genitalia smaller, shaped as in figure 28 ... *leleupi* n. sp. (p. 21).

7. Male genitalia with the ventral fovea at the front of the sclerotized bars (figures 25, 26) 8

— Male genitalia with the ventral fovaea at the rear of the sclerotized bars (shaped as in fig. 29) ..... *verschureni* n. sp. (p. 25).

8. Male genitalia shaped as in figure 25 ..... *machadoi* CAMERON (p. 21).

— Male genitalia shaped as in figure 26 ..... *wittei* KISTNER (p. 26).



FIGS. 11-13. — Pronotum and elytra; dorsal view, right side.
11 : *Doletica bicolor* CAMERON; 12 : *D. machadoi* CAMERON; 13 : *D. flavescens* n. sp.

FIGS. 14-16. — Head, pronotum, and elytra, dorsal view, right side.
14 : *Doletica minutus* n. sp.; 15 : *D. capitocleftus* n. sp.; 16 : *D. brevipennis* CAMERON.

[**Doletica bicolor** CAMERON.]

(Figs. 11, 17, 30.)

Doletica bicolor CAMERON, Bull. Mus. roy. d'Hist. nat. Belg., 14 (37), 1938, p. 1, Institut royal des Sciences naturelles de Belgique, Brussels, (Congo : Eala, January 1935, in the trunk of a rotten *Ficus*, J. Ghesquière).

Distinguished from all other species by the shape and sculpture of the pronotum and elytra, the shape of the male genitalia, and the shape of the male eighth sternite with its deep asymmetrical cleft.

Head and elytra dark brown in color; pronotum, abdomen and legs lighter, reddish brown in color, hence the name of the species. Ground sculpture of head, pronotum, and elytra finely shagreened. Head with no further sculpture. Pronotum (fig. 11) with a large shallow depression in center, with three small shallow depressions toward the posterior border. One of these is on the midline while the other two are off the midline, one on either side. Both contain deep large punctures. Pronotum also contains two side declivities after which the lateral projections of the pronotum are relatively smooth except for the ground sculpture. Elytra (fig. 11) with three longitudinal ridges on each; one at the mid-line, one approximately at the center, and one closer to the lateral margin. These ridges are associated with declivities in each case. Pronotum and elytra shaped as in figure 11. Secondary wings present and full length. Sternite VIII of male with a deep asymmetrical cleft, shaped as in figure 17. Male genitalia asymmetrical, shaped as in figure 30. The only variation seen in the genitalia was that the twisted parts might be twisted more tightly.

Measurements. — Head length, 0,30-0,33 mm; pronotum length, 0,34-0,40 mm; elytra length, 0,36-0,39 mm. Number measured, 10.

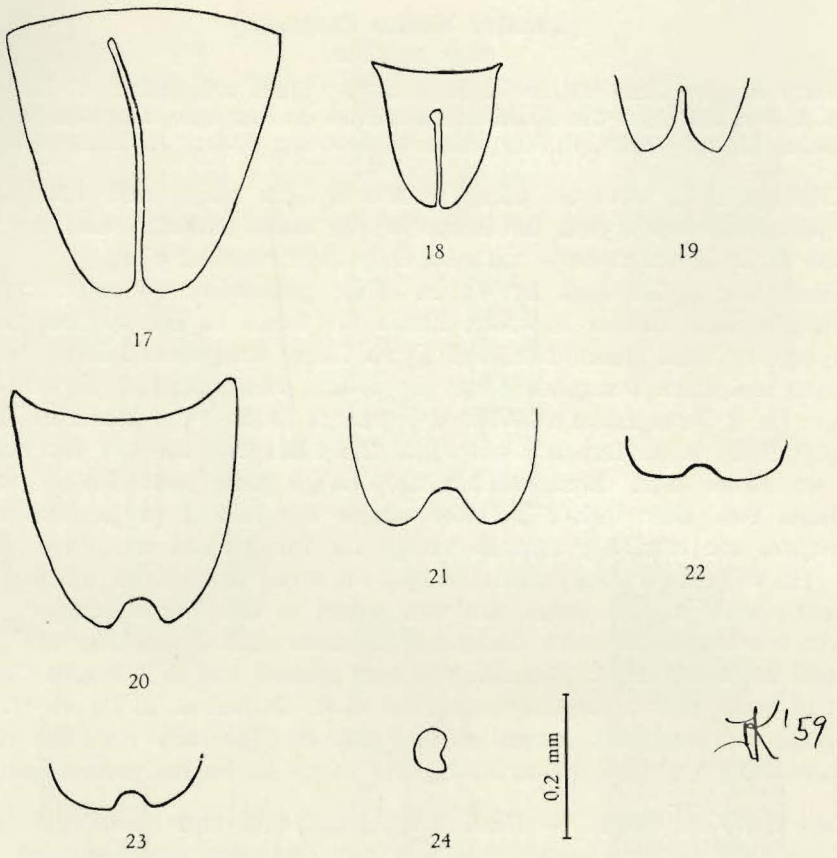
Material examined. — Congo : 1 female : N° 1321, Holotype, *D. bicolor* CAMERON, det. M. CAMERON, Eala, January 1935, J. GHESQUIÈRE, in the rotten trunk of a *Ficus* (I.R.S.N.B.); 7 (1 male, 2 females); Tshuapa, lac Tumba, near Bikoro, October 1955, 350 m, Coll. N. LELEUP (M.R.A.C., D.K.) : 1 male, 1 female : Tshuapa, Mabali, lac Tumba, November 1955, N. LELEUP, taken in claysoil on the shores of the lake (M.R.A.C., D.K.).

[**Doletica brevipennis** CAMERON.]

(Figs. 16, 20, 27.)

Doletica brevipennis CAMERON, Ann. Mus. Roy. Congo Belge, Tervuren, Sér. in-8°, Zool., 51, 1956, pp. 182, 183. — Musée Royal de l'Afrique Centrale, Tervuren (Ruanda; Tshuruyaga, forêt du Rugege, near Astrida, 22 January 1953, P. BASILEWSKY).

Distinguished from all other species by the shape and sculpture of the protonum and elytra together with the shape of the male genitalia. Most



FIGS. 17-23. — Male abdominal sternite VIII.

17 : *Doletica bicolor* CAMERON, whole sternite; 18 : *D. minutus* n. sp., whole sternite; 19 : *D. capitocleftus* n. sp., apex of sternite; 20 : *D. brevipennis* CAMERON, whole sternite; 21 : *D. wittei* KISTNER, apex of sternite; 22 : *D. verschureni* n. sp., apex of sternite; 23 : *D. leleupi* n. sp., apex of sternite.

FIG. 24. — *Doletica capitocleftus* n. sp. : Eye, lateral view.

closely related to *Doletica leleupi* n. sp. from which it is distinguished by the shape of the male genitala alone.

Color uniformly yellowish brown although the elytra may be a bit darker. Ground sculpture of the head, pronotum, and elytra shagreened, though coarser than the rest of the species (fig. 16). Head (fig. 16) with no further sculpture. Pronotum (fig. 16) with a shallow transverse depression near the center which sends lateral ramifications toward the sides;

also with three deep punctures at the posterior border, one of which is on the midline, the other two off to each side. Pronotum also contains two side declivities which taper off on each side to the relatively flat lateral projection of the pronotum. Elytra (fig. 16) considerably shorter than the pronotum, relatively flat, with but two ridges and their associated declivities. Secondary wings reduced to extremely small flaps, useless for flight. Sternite VIII of male with a shallow symmetrical notch, shaped as in figure 20. Male genitalia symmetrical, shaped as in figure 27.

Measurements. — Head length, 0,20-0,24 mm; pronotum length, 0,32-0,35 mm; elytra length, 0,20-0,22 mm. Number measured, 14.

Material examined. — Ruanda : 1 male : N° *e*1163, Holotype, *Doletica brevipennis* CAMERON, det. M. CAMERON, Tshuruyaga, forêt Rugege, 2.400 m, 22 January 1953, P. BASILEWSKY (M.R.A.C.); 1 male, 1 female : forêt de la Rugege, 2.000 m, February 1951, N. LELEUP (M.R.A.C., D.K.); 3 males, 1 female, forêt de la Rugege, 2.100 m, March 1951, N. LELEUP (M.R.A.C., D.K.); 9 (4 males, 2 females), forêt de la Rugege, 2.150 m, April 1951, N. LELEUP, collected from humus (M.R.A.C., D.K.); 1 male, Mushongi (Biumba), 1851 m, February 1951, N. LELEUP, mountain forest (M.R.A.C.).

Doletica capitocleftus n. sp.

(Figs. 15, 19, 24, 32.)

Distinguished from all other species by the shape and sculpture of the head, pronotum, and elytra together with the shape of the male genitalia. Most closely related to *D. minutus* n. sp. from which it is distinguished by all of above.

Color reddish-brown throughout. Ground sculpture of the head, pronotum, and elytra finely shagreened. Head (fig. 15) with a deep cleft along the mid-line toward the posterior edge which extends about midway where upon it becomes shallower but spreads out to a broad depression which extends to the place at which the antennae are inserted. Head shaped as in figure 15 with the eyes small, not visible from the dorsal surface. Lateral shape of eye as in figure 24. Pronotum (fig. 15) with a medium sized depression along the midline in the anterior half. Behind this depression is a small high spot and behind the small high spot is the midline puncture. To either side of the midline puncture is a lateral puncture. All three punctures are deep and distinct. The pronotum also has a lateral depression on each lateral third. Overall shape of pronotum as in figure 15, note smoothly rounded posterior border and very small lateral projection. Elytra (fig. 15) with three longitudinal ridges along with their associated declivities. Elytra relatively long, nearly as long as the pronotum; secondary wings full sized. Sternite VIII of male with relatively deep symmetrical cleft, shaped as in figure 19. Male genitalia symmetrical, shaped as in figure 32, with an

extremely well sclerotized and complicated internal sac (indicated in dotted lines).

Measurements. — Head length, 0,20 mm; pronotum length, 0,22 mm, elytra length, 0,21 mm. Number measured, 1.

Holotype : 1 male : N° *e*107, Congo, Parc National de la Garamba, II/fd/6, 28 September 1951, collected by H. De Saeger (2618). In the collection of the Institut des Parcs Nationaux du Congo et du Ruanda-Urundi, Brussels.

Remarks. — De Saeger (1956) gives the following details on the capture of the above specimen. II/fd/6 refers to section fd of the second biological cell. The number 6 refers to herbaceous savanna without woody plants on alluvial sand. The specimen was berlesed out of a 3 dm^3 sample of dirt taken from beneath a clump of *Hyparrhenia rufa*.

[**Doletica flavescens** n. sp.]

(Figs. 13, 31.)

Distinguished from all other species by the shape and sculpture of the head, pronotum and elytra together with the shape of the male genitalia. Not very closely related to any of the other species but its sculpture is most similar to that of *D. machadoi* Cameron, although sufficiently distinct as can be seen from figure 13.

Color yellowish brown throughout. Ground sculpture of the head, pronotum, and elytra finely shagreened. Head with no sculpture other than the ground sculpture. Pronotum (fig. 13) with a transverse depression along the midline and extending laterally to a point near the longitudinal depression. Base of pronotum with three deep punctures, one on the midline, the others to each side. The lateral puncture is contained in a rather large shallow depression. Lateral depressions form indentations in the lateral projections of the pronotum which are relatively flat. Pronotum shaped as in figure 13 with a sinuate or notched posterior broder. Elytra relatively flat with but one ridge at the lateral border (fig. 13) and one shallow depression preceding that ridge. Elytra shaped as in figure 13 and nearly as long as the pronotum. Secondary wings normal sized. Sternite VIII of male with no notch or cleft of any kind. Male genitalia small for the size of the abdomen; symmetrical, shaped as in figure 31. Internal sac tubular, outlined with dotted lines in figure 31.

Measurements. — Head length, 0,18-0,21 mm; pronotum length, 0,26-0,28 mm; elytra length, 0,21-0,24 mm. Number measured, 6.

Holotype : 1 male : N° *e*47, Sumatra, from tobacco. In the Fauvel collection of the Institut royal des Sciences naturelles de Belgique, Brussels.

Paratypes : 5 females, same data as the holotypes (I.R.S.N.B., D.K.).

[**Doletica leleupi** n. sp.]

(Figs. 2, 4, 9, 10, 23, 28.)

Distinguished from all other species by the shape and sculpture of the head, pronotum, and elytra together with the shape of the male genitalia. Most closely related to *Doletica brevipennis* CAMERON from which it is distinguished by the shape of the male genitalia alone.

Color yellowish brown throughout. Ground sculpture of the head, pronotum, and elytra shagreened, through coarser than the rest of the species, like *D. brevipennis* CAMERON (fig. 16). Head with no further sculpture. Pronotum with a shallow transverse depression near the center which sends out lateral ramifications towards the sides; also with three deep punctures at the posterior border, one of which is on the midline, the other two off to each side. Pronotum also contains two side declivities which taper off on each side to a relatively flat lateral projection. Pronotum shaped as in *D. brevipennis* (fig. 16) with a sinuate posterior border. Elytra considerably shorter than the pronotum; relatively flat with but two ridges with their associated declivities. Secondary wings reduced to extremely small flaps, useless for flight. Appearance of head, pronotum and elytra is exactly as that of *D. brevipennis* CAMERON, so reference to figure 16 will help in the interpretation of the above. Sternite VIII of male with a very shallow, symmetrical notch, somewhat more shallow than *D. brevipennis* CAMERON, shaped as in figure 23. Male genitalia symmetrical, shaped as in figure 28.

Measurements. — Head length, 0,21-0,24 mm; pronotum length, 0,32-034 mm; elytra length, 0,20-0,22 mm. Number measured, 12.

Holotype : 1 male, N° *e*801, Congo, Kivu, Nyakasiba, Kabare, 1.800 m, June 1951, N. LELEUP, from a vestigial forest. In the collection of the Musée Royal de l'Afrique Centrale, Tervuren.

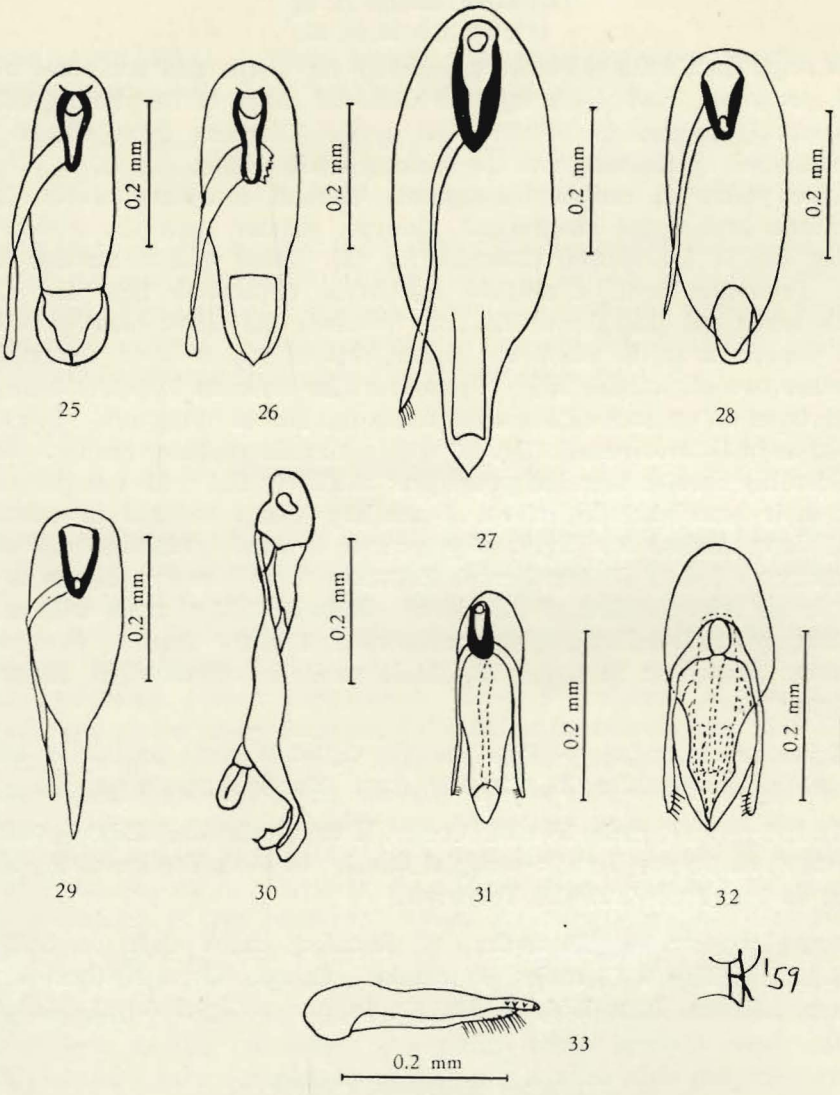
Paratypes : 60 (13 males, 13 females), same data as holotype, (M.R.A.C., D.K.); 9 (2 males, 2 females), Congo, Kivu, Nyakasiba near Kabare, 1.600 m, June 1951, N. LELEUP, from a vestigial forest (M.R.A.C., D.K.).

[**Doletica machadoi** CAMERON.]

(Figs. 12, 25.)

Doletica machadoi CAMERON, Publ. Cult. Mus. Dundo, Comp. Diam. Angola, 7, 1950, p. 112. — British Museum (Natural History), London (Angola, Dundo, June 1949).

Distinguished from all other species by the shape and sculpture of the head, pronotum, and elytra together with the shape of the male genitalia. Most closely related to *D. wittei* KISTNER and *D. verschureni* n.sp. from which it is distinguished by the shape of the male genitalia alone.



FIGS. 25-32. — Male genitalia, median and lateral lobes, ventral view.

25 : *Doletica machadoi* CAMERON; 26 : *D. wittei* KISTNER; 27 : *D. brevipennis* CAMERON; 28 : *D. leleupi* n. sp.; 29 : *D. verschureni* n. sp.; 30 : *D. bicolor* CAMERON; 31 : *D. flavescens* n. sp.; 32 : *D. capitocleftus* n. sp.

FIG. 33. — *D. minutus* n. sp. : male genitalia, median and lateral lobes, lateral view.

Color uniform light brown throughout. Ground sculpture of the head, pronotum, and elytra finely shagreened. Head with no futher sculpture. Pronotum (fig. 12) with a large but shallow depression along the midline and extending forward to the anterior 3/40ths of the pronotum. In the center of this shallow depression is a deeper transverse depression just a little anterior of the center of the pronotum. Just behind the large shallow depression along the midline is a small hillock and behind this small hillock is located the middle puncture of a series of three punctures located along the posterior border of the pronotum. The other two punctures are lateral to the middle one just described. Shape of the pronotum as in figure 12 with a sinuate posterior border; between the center portion or " disc " and the lateral projections is an area which is depressed in a progressive way until the relatively flat area of the lateral projections is attained. Elytra (fig. 12) with three ridges (continuous dark lines in the figure), the second one of which (from the lateral border) has a shallow depression between it and the third ridge. Rest of the elytra relatively flat. Secondary wings present and of full size. Sternite VIII of male shaped exactly as in *D. brevipennis* CAMERON (fig. 20) with a shallow, symmetrical notch on the posterior border. Male genitalia symmetrical, shaped as in figure 25.

Measurements. — Head length, 0,20-0,21 mm; pronotum length, 0,28-0,32 mm; elytra length, 0,25-0,32 mm. Number measured, 10.

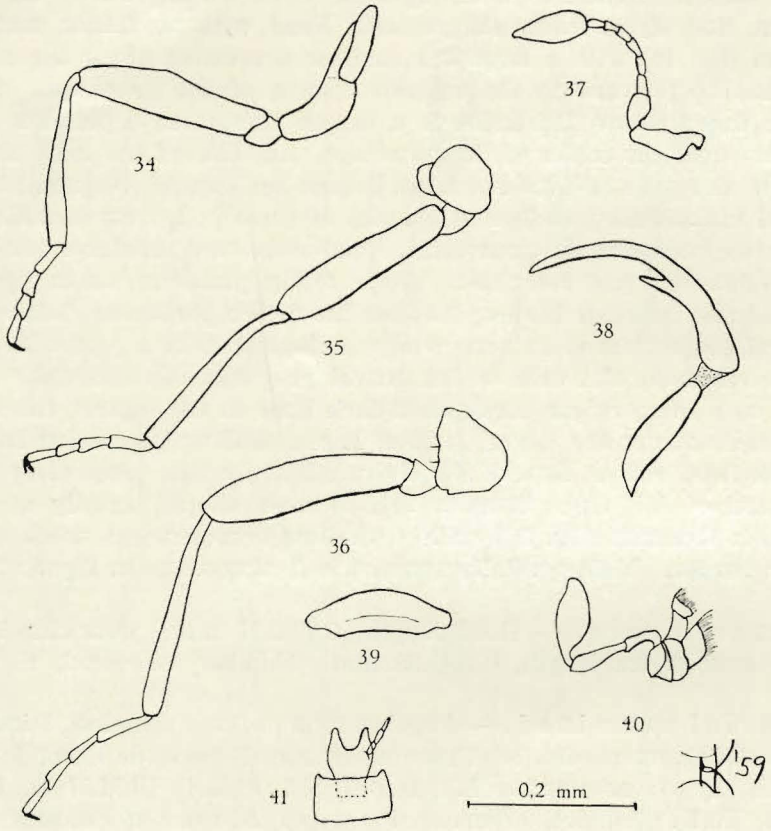
Material examined. — Angola : 10 (5 males, 2 females), Paratypes, *D. machadoi* CAMERON, det. M. CAMERON, Dundo, Estrada de Caconda, June 1949, Coll, by A. DE BARROS MACHADO (ANG. 1525.1) (B.M.N.H., L.I.B., C.N.H.M., D. K.); 2 males, 3 females, Paratypes, *D. machadoi* CAMERON, det. M. CAMERON, Dundo, Parque Carrisso, 20 June 1949, Coll. by A. DE BARROS MACHADO (ANG. 1519.10) (L.I.B.).

[**Doletica minutus** n. sp.]

(Figs. 14, 18, 33.)

Distinguished from all other species by the shape and sculpture of the head, pronotum, and elytra together with the shape of the male genitalia. Most closely related to *D. capitocleftus* n. sp. from which it is distinguished by the more shallow groove in the head in addition to all of the other characters listed above.

Head and elytra dark brown in color; pronotum, abdomen, and legs light brown. Ground sculpture the head, pronotum, and elytra finely shagreened. Head (fig. 14) relatively flat, but with a very shallow depressions starting at the posterior border of the head and preceeding along the midline about half the length of the head at which point it flares out laterally and extends to the corner of the vertex or the point of antennal insertion. Pronotum (fig. 14) with a shallow depression in the center along



FIGS. 34-41. — *Schatzmayrina nigritula* n. sp.

34 : Prothoracic leg; 35 : Mesothoracic leg; 36 : Metathoracic leg; 37 : Antenna; 38 : Mandible including the part which is internal and upon which the flexor muscles attach; 39 : Labrum; 40 : Maxilla; 41 : Labium and submentum.

the midline which extends from the mid-line puncture to near the anterior border of the pronotum. This depression gets progressively deeper toward the center with a little spot along the mid-line approaching the appearance of a puncture. Pronotum with five punctures near the posterior border; one along the mid-line with two others off to each side. Pronotum with a lateral depression on each side. Pronotum convex; without a clear distinction between the lateral projections and the disc; shaped as in figure 14 with a notched (or accentuated sinuate) posterior border. Elytra (fig. 14) with two lateral ridges and one slight ridge at the mid-line and shallow depressions between ridges. Elytra relatively long; shaped as in fig 14; secondary wings present and of full size. Sternite VIII of male with a

slightly asymmetrical notch at the posterior border; notch is long and slender; shaped as in figure 18. Male genitalia symmetrical, extremely small, with lateral lobes completely fused to the median lobe, and a shape which would not permit microprojection from the ventral surface. Lateral shape distinctive, as in figure 33.

Measurements. — Head length, 0,21 mm; pronotum length, 0,26 mm; elytra length, 0,20 mm. Number measured, 1.

Holotype: 1 male, N° *e*487, Congo, Kibali-Ituri, Mambasa-Mungbere near Epulu, 900 m, February 1954, Coll. by N. LELEUP. In the collection of the Musée Royal de l'Afrique Centrale, Tervuren.

Doletica verschureni n. sp.

(Figs. 22, 29.)

Distinguished from all other species by the shape and sculpture of the head, pronotum, and elytra together with the shape of the male genitalia. Most closely related to *D. machadoi* CAMERON and *D. wittei* KISTNER from which it is distinguished by the shape of the male genitalia alone.

Color uniformly brown throughout. Ground sculpture of head, pronotum, and elytra finely shagreened. Head with no further sculpture. Sculpture as well as shape of pronotum and elytra are exactly as in *D. machadoi* CAMERON so that reference to figure 12 will be helpful in interpreting the following. Pronotum with a large but shallow depression along the midline and extending forward to the anterior 3/40ths of the pronotum. In the center of this shallow depression is a deeper transverse depression just a little anterior of the center of the pronotum. Just behind the large shallow depression along the midline is a small hillock and behind this small hillock is located the center puncture of a series of three punctures located along the posterior border of the pronotum. The other two punctures are lateral to the middle one just described. Pronotum with a sinuate posterior border. Pronotum also with a lateral area which is depressed in a progressive way to level off to the lateral projections, which are relatively flat. This depression marks the boundary between the pronotal disc and the pronotal projections. Elytra with three ridges, the second one of which has a shallow declivity between it and the third ridge. Rest of elytra relatively flat. Secondary wings present and of full size. Sternite VIII of male with a symmetrical notch on its posterior border (fig. 22) which is somewhat more shallow than the notch in *D. machadoi* CAMERON. Male genitalia symmetrical and shaped as in figure 29.

Measurements. — Head length, 0,18-0,20 mm; pronotum length, 0,26-0,28 mm; elytra length, 0,22-0,28 mm. Number measured, 20.

Holotype : 1 male, No. *c*214, Congo, Parc National de la Garamba, II/fd/17, 8 March 1951, dry gallery forest, Coll. by H. De Saeger (1371), Berlese ; humid organic material not yet decomposing. In the collection of the Institut des Parcs Nationaux du Congo et du Ruanda-Urundi, Brussels.

Paratypes : Congo : Parc National de la Garamba : 12, same data as holotype (I.P.N.C.R.U., D. K.); 1, II/fc/17, 15 February 1952, gallery forest, Coll. H. De Saeger (3173), Berlese : dry leaves littering the ground in shade (I.P.N.C.R.U.); 1 female, II/ke/8, 12 February 1952, head of source with degraded forest, Coll. H. De Saeger (3128), Berlese : ground collected at the base of a hollow tree (I.P.N.C.R.U.); 2 (1 male), II/fd/6, 28 September 1951, low ground of herbaceous savanna, Coll. H. De Saeger (2618), Berlese ; 3dm³ of ground taken from beneath a clump of *Hyparrhenia rufa* (I.P.N.C.R.U., D. K.); 2 males, 1 female, II/fd/15, 24 May 1951, swampy plain with islets of Gramineae, not burned, Coll. H. De Saeger (1815), Berlese : organic and decomposing materials from the surface of the ground under the herbaceous strata (I.P.N.C.R.U., D.K.); 1 female, II/ba/5. 10 May 1951, Coll. J. Verschuren (1711), from the surface of a nest of *Otomys* (No. Z. 3367/6) (rodent) (I.P.N.C.R.U.); 2 (1 male), II/gd/8, 13 December 1951, head of source, area formerly containing woods, Coll. H. De Saeger (2930), Berlese : 4 dm³ of ground taken in the excavation of a hollow tree (I.P.N.C.R.U., D.K.); 1 female, II/ba/5, 10 May 1951, Coll. J. Verschuren, from the depths of a nest of a shrew-mouse (Z. 3362/6) (I.P.N.C.R.U.); 1 female, II/gd/8, 7 January 1952, head of source, partly swampy, Coll. H. De Saeger (2983), Berlese : superficial humid soil collected under « Cypéracées » (I.P.N.C.R.U.); 1 female, II/gd/11, 21 April 1952, swampy coulee, Coll. H. De Saeger (3337), Berlese : 4 dm³ of ground taken under the foot of *Urelytrum* (Gramineae), environment humid (I.P.N.C.R.U.); 2 females, Morubia/9, 12 March 1952, gallery forest, Coll. H. De Saeger (3236), Berlese : dry ground collected in an excavation at the base of a large tree (I.P.N.C.R.U., D.K.); 1 female, II/gd/5, 21 January 1952, herbaceous savanna, Coll. H. De Saeger (3050), Berlese : 4 dm³ of ground from 0-10 cm deep under cluster of *Urelytrum giganteum* (Gramineae) (Bot. 1361), at the edge of a humid coulee before the passage of fire (I.P.N.C.R.U.).

[Kivu : 3 (2 males, 1 female), near Uvira, 800 m, May 1951, Coll. N. Leleup, collected from humus in a vestigial sclerophilous forest (M.R.A.C., D.K.).]

Remarks. — The ecological situations given above on specimens collected by the H. De Saeger Mission have been given by De Saeger (1956). The designations II/fd/17 and all other such designations are explained by De Saeger (*loc. cit.*) and refer to the second biological cell.

[**Doletica wittei** Kistner.]

(Figs. 1, 3, 5-8, 21, 26.)

Doletica wittei Kistner, Explor. Parc Nat. Upemba, Miss. G. F. de Witte et al., 1947-1949, fasc. 59(4), 1960, p. 116, figs. 1, 2. Institut des Parcs Nationaux du Congo et du Ruanda-Urundi (Several locations within the Upemba National Park).

Distinguished from all other species by the shape and sculpture of the head, pronotum and elytra together with shape of the male genitalia. Most

closely related to *D. machadoi* CAMERON and *D. verschureni* n. sp. from which it is distinguished by the shape of the male genitalia alone.

Color uniform yellowish brown throughout. Ground sculpture of the head, pronotum, and elytra finely shagreened. Head with no futher sculpture. Sculpture as well as the shape of the pronotum and elytra are exactly as in *D. machadoi* CAMERON so that reference to figure 12 will be helpful in interpreting the following. Pronotum with a large but shallow depression along the midline, which extends forward to the anterior 3/40ths of the pronotum. In the center of this shallow depression is a deeper transverse depression just a little anterior of the center of the pronotum. Just behind the large shallow depression along the midline is a small hillock and behind this small hillock is located the center puncture of a series of three punctures located along the posterior border of the pronotum. The other two punctures are lateral to the middle one just described. Pronotum with a sinuate posterior border. Pronotum also with a lateral area which is depressed in a progressive way to level off to the relatively flat lateral projections of the pronotum. This depression marks the boundary between the pronotal disc and the lateral projections. Elytra with three ridges, the second one of which has a shallow declivity between it and the third ridge. Rest of elytra relatively flat. Secondary wings present and of full size. Sternite VIII of male with a symmetrical notch in the posterior border (fig. 21) which is somewhat deeper than in *D. verschureni* n. sp. or *D. machadoi* CAMERON. Male genitalia symmetrical, shaped as in figure 26.

Measurements. — Head length, 0,20-0,22 mm; pronotum length, 0,30-0,32 mm; elytra length, 0,29-0,32 mm. Number measured, 11.

Material examined. — Only the type series.

Remarks. — The description given here amplifies the original description which was necessarily shorter and less comprehensive than the description above which can be done when cross-references to all the species of the genus can be given.

Genus **SCHATZMAYRINA** KOCH.

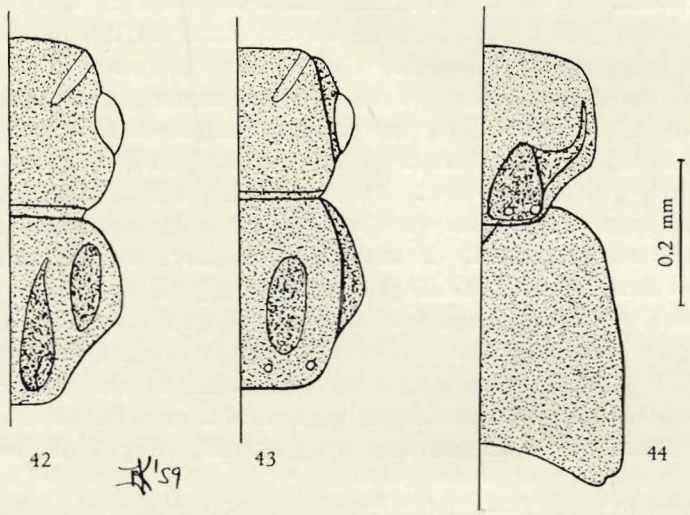
Schatzmayrina KOCH, Bull. Soc. Roy. Ent. d'Egypte, 1934, p. 63.

Type of Genus: *Schatzmayrina oxyclypea* KOCH.

Distinguished from all other genera by the shape of the head, pronotum, and elytra together with the condition of the abdomen and the nine-segmented antennae. The precise taxonomic position of this genus is not entirely clear at this time but it is nevertheless a distinct entity and therefore

worthy of being revised. It is related to *Stenaesthetus* SHARP through the smooth labrum together with the form of the head and pronotum. It is distinguished from that genus by the tarsal formula, the nine-segmented antennae together with the prominent paratergites on abdominal segments III-VI.

Overall head shape somewhat variable by species but always dorso-ventrally flattened (figs. 42 and 43). Eyes always present, usually of the



FIGS. 42-43. — Outline of head and pronotum showing main features of the sculpture. 42 : *Schatzmayrina oxyclypea* KOCH; 43 : *S. nigritula* n. sp.

FIG. 44. — *Schatzmayrina congoensis* n. sp. : outline of pronotum and elytra.

same relative size (figs. 42 and 43). Gular sutures confluent along their entire length. Antennae insert at the corner of the vertex before the eyes; a slightly raised ridge extends from the point of insertion of the antennae in toward the center of the head in all the species noted (figs. 42 and 43). Antennae 9-segmented, shaped as figure 37. Mandibles toothed, shaped as in figure 38; note the length and the shape of the sclerotized part which fits into the interior of the head. Maxillae small, shaped as in figure 40; palpi 3-segmented, large and conspicuous. Labium extremely small, shaped as in figure 41; palpi 3-segmented. Labrum smooth, bilobed, shaped as in fig. 39.

Pronotum sligthly wider than the head; sculpture and shape variable by species; overall shape quite tubular with little dorso-ventral flattening. Elytra always a little wider than the pronotum, shape and sculpture as in figure 44. Prothoracic coxal cavities contiguous and open behind; lateral

edges formed by the deflected sides of the pronotum rather than by the prosternum. Mesothoracic peritremes membranous, if present at all. Mesothoracic coxal cavities contiguous, being separated by a very narrow process which is not visible until the legs are dissected off. Mesosternum carinate along midline. Metasternum relatively long and smooth with no unusual features. Secondary wings with usual staphylinid venation. Prothoracic legs shaped as in figure 34; coxal processes relatively long but with even edges. Mesothoracic legs shaped as in figure 35. Metathoracic legs shaped as in figure 36. Tarsal formula 4-4-4.

Overall abdominal shape as in *Doletica* CAMERON (fig. 7), but without the lateral indentations of tergite III. Two pairs of paratergites on segments III, IV, V and VI; one pair on segments VII and VIII; none on segmental complex IX. Structure of the segment IX complex of female as in *Doletica* CAMERON. In the male, sternite VIII is notched along the posterior border. Segment IX is entire dorsally while a portion of the ventral part is modified into a part which is shaped as in figure 51. Male genitalia bulbous, variable by species. The males of all the species have a sclerotized tracheal tube (figs. 48-50), the exact shape of which is variable by species. This sclerotized tube is found anterior to the male genitalia and surrounds the tracheal trunk which enters the male genitalia by the median ventral fossa. The anterior and posterior (left and right in the figure) ends of this sclerotized tube are heavily sclerotized while the middle portion is thinly sclerotized, flexible, and transparent. In life, a muscle bundle or two wrap around this tube in a helical figure. Spermatheca of the female membranous if present at all.

R e m a r k s . — So far as I know, the sclerotized tracheal tube reported above is unique to certain genera of the *Euaesthetinae* and has never been reported before. It is the presence of this tube which makes the systematic position of this genus somewhat debatable. It looks at first sight to be related to *Stenaesthetus* SHARP and the sclerotized tube seems to confirm this relationship. However, *Schatzmayrina* has a 4-4-4 tarsal formula while *Stenaesthetus* has a 5-5-4 tarsal formula. *Schatzmayrina*, if related to *Stenaesthetus*, must be more primitive because of the condition of the paratergites, which is a more conservative character than the tarsal formula. There is, therefore, a conflict in the evidence regarding the placement of this genus and considering it related to *Stenaesthetus* would lead to difficulties in explaining how a 5-5-4 tarsal formula was evolved from a 4-4-4 tarsal formula. Another hypothesis would be that *Schatzmayrina* is related to *Edaphus* MOTSCHULSKY. This would eliminate the conflict between the morphological evidence presented above, but would lead to difficulties regarding the interpretation of the sclerotized tube which has not been found yet in the *Edaphus* complex. However, these difficulties of interpretation may be resolved when the revision of the *Edaphus* complex is finished.

KEY TO SPECIES.

1. Pronotum with four deep distinct punctures; two on each side of the pronotum (figs. 43 and 44) 2
— Pronotum without deep distinct punctures. Male genitalia shaped as in figure 45; sclerotized tracheal tube shaped as in fig. 49 ..... *oxyclypea* KOCH (p. 30).

2. Pronotum with a distinct ridge which delineates the lateral reflection of the pronotum (fig. 43); male genitalia shaped as in figure 46; sclerotized tracheal tube shaped as in figure 48 *nigritula* n. sp. (p 31).
— Pronotum without a distinct ridge which delineates the lateral reflection of the pronotum (fig. 44); male genitalia shaped as in figure 47; sclerotized tracheal tube as in figure 50 ..... *congoensis* n. sp. (p. 33).

[**Schatzmayrina oxyclypea** KOCH.]

(Figs. 42, 45, 49.)

Schatzmayrina oxyclypea KOCH, Bull. Soc. Roy. Ent. d'Egypte, 1934, p. 69, fig. 17 (head) (Egypt : Pyramids of Ghizeh, 29 July 1933; Sakkarah, 15 and 23 september 1933, in fields under stones, swarms over dirt on the shore of the Nile).

Distinguished from all other species by the shape and sculpture of the head and pronotum, the shape of the male genitalia, and the shape of the sclerotized tracheal tube. It il also lighter in color than the rest of the species.

Color yellowish brown throughout. Ground sculpture of the head, pronotum, and elytra finely shagreened. Head with no further sculpture except a raised ridge which extends from the corner of the vertex where the antennae insert to a point approximately a third of the way in toward the center of the head (see fig. 42). Head and pronotum shaped as in figure 42. Pronotum with two very shallow depressions. One extends from a short distance from the posterior border to the anterior fourth of the pronotum. The other is lateral to the previously described one and extends from a short distance from both the posterior and anterior borders of the pronotum. Elytra without further sculpture, shaped as in *S. congoensis* n. sp. (fig. 44). Male genitalia thinly sclerotized, shaped as in figure 45. Sclerotized tracheal tube of male shaped as in figure 49. (The specimen figured happened to have an inflated spot in the tracheal trunk which runs through the tube; all specimens do not have this.)

Measurements. — Head length, 0,20 mm; pronotum length, 0,26-0,28 mm; elytra length, 0,26 mm. Number measured, 2.

Material examined. — 1 female, N° *e*1298, Cotype, *Schatzmayrina oxyclypea* KOCH, det. C. KOCH, Egypt : Cairo, Pyramids, 27 July 1933, WALTER WITTMER (C.N.H.M.); 1 male, Egypt, Mansourieh, 23 July 1933, A. ALFIERI « 2nd » Collection of Egyptian Coleoptera (C.N.H.M.).

Schatzmayrina nigritula n. sp.

(Figs. 34-41, 43, 46, 48, 51-52.)

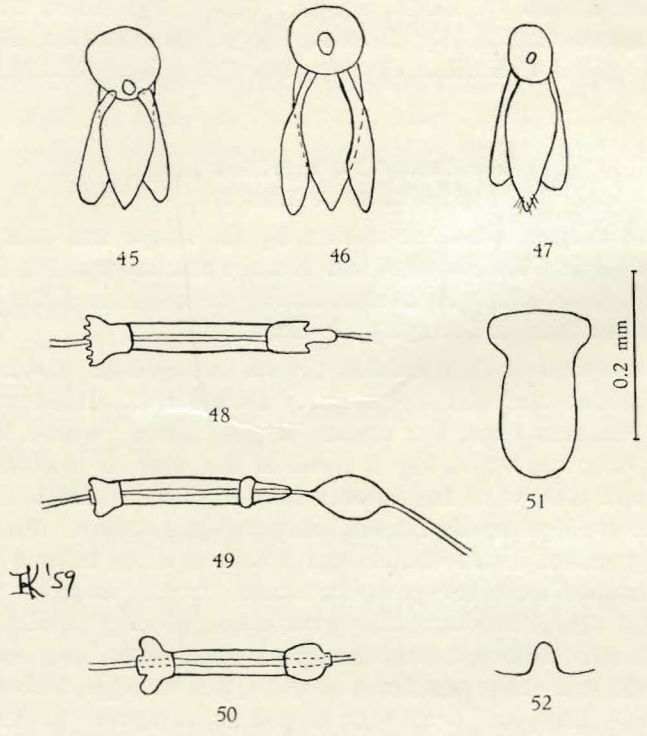
Distinguished from all other species by the shape and sculpture of the head and pronotum, the shape of the male genitalia, and the shape of the sclerotized tracheal tube. It is also darker in color and the shagreening is a little coarser than in *S. oxyclypea* KOCH.

Color dark brown or dark reddish brown throughout. Ground sculpture of the head, pronotum, and elytra finely shagreened. Head with a raised ridge which extends from the corner of the vertex, where the antennae insert, to a point approximately a third of the way in toward the middle (fig. 43). Head also with the lateral border quite distinct so that there appears to be a ridge at the lateral border of the vertex. Pronotum with a shallow depression in the center half which extends from a point which is a short distance from the posterior border to the anterior third of the pronotum (fig. 43). Pronotum also with a lateral ridge which separates a depressed lateral reflection of the pronotum from the central disc. Pronotum with four deep punctures at the posterior edge, two on each side of the midline. Head and pronotum shaped as in figure 43. Elytra shaped as in *S. congoensis* n. sp. (fig. 44); with no further sculpture. Male genitalia thinly sclerotized, shaped as in figure 46. Sclerotized tracheal tube of male shaped as in figure 48.

Measurements. — Head length, 0,18-0,21 mm; pronotum length, 0,24-0,30 mm; elytra length, 0,24-0,32 mm. Number measured, 11.

Holotype : 1 male : Congo, Parc National de la Garamba, Mabanga/10, 7 February 1952, Coll. J. VERSCHUREN (No. 3114), gathered from a nest made of grasses on swampy soil next to a dry stream (*Lophuromys*, No. V. 4362). In the collection of the Institut des Parcs Nationaux du Congo et du Ruanda-Urundi, Brussels.

Paratypes : Congo, Parc National de la Garamba : 1, same data as holotype (D.K.); 1 female, II/fd/17, 5 September 1951, dense gallery forest, Coll. H. DE SAEGER (2411), Berlese : 2 dm³ of ground collected in a hollow (I.P.N.C.R.U.); 1 male, 2 females, II/ke/8, 12 February 1952, head of source with degraded woods, Coll. H. DE SAEGER (3128), Berlese : ground collected at the base of a hollow tree (I.P.N.C.R.U., D.K.); 1 male, II/eb/4, 24 May 1951, Coll. J. VERSCHUREN (1820), 21 April 1952, swampy valley, Coll. H. DE SAEGER (3337), Berlese : 4 dm³ of ground found under a clump of *Urelytrum* (Gramineae) (I.P.N.C.R.U.); 1 male, II/gd/6, 26 March 1952, herbaceous savanna at the edge of Garamba, Coll. H. DE SAEGER (3248), from nests in burrows in grasses, nests were of the rodent, « Gwa » (Z. 4412/2) (I.P.N.C.R.U.); 1 male, II/gd/4,



FIGS. 45-47. — Male genitalia.

45 : *Schatzmayrina oxyclypea* KOCH; 46 : *S. nigritula* n. sp.; 47 : *S. congoensis* n. sp.

FIG. 48-50. — Sclerotized tracheal tube located along the tracheal trunk anterior to the male genitalia.

48 : *Schatzmayrina nigritula* n. sp.; 49 : *S. oxyclypea* KOCH; 50 : *S. congoensis* n. sp.

FIG. 51. — *Schatzmayrina nigritula* n. sp., male ninth abdominal sternite.

FIG. 52. — *Schatzmayrina nigritula* n. sp., posterior border of male eighth abdominal sternite.

25 January 1952, herbaceous savanna burned in December, Coll. H. DE SAEGER (3048), Berlese : 4 dm³ of ground, 0-0,10 m deep from savanna with *Sorghum arundinaceum* (I.P.N.C.R.U.); 1 female, II/gd/4, 18 May 1952, close to a bog, Coll. J. VERSCHUREN (1767), sifting : 9 nests of rodents at the surface in a savanna which was not burned (I.P.N.C.R.U.); 1 male, II/ec/13, 27 April 1951, Coll. J. VERSCHUREN (1652), from diverse debris under *Cyperus auricomus* (I.P.N.C.R.U.).

Remarks. — The geographical designations II/gd, etc. can all be located on the map of the second biological cell which is provided by DE SAEGER (1956).

[**Schatzmayrina congoensis** n. sp.]

(Figs. 44, 47, 50.)

Distinguished from all other species by the shape and sculpture of the head and pronotum, the shape of the male genitalia, and the shape of the sclerotized tracheal tube. It is more reddish in color than *S. nigritula* n. sp. and darker than *S. oxyclypea* KOCH. The shagreening is coarser than in both *S. oxyclypea* KOCH and *S. nigritula* n. sp.

Color reddish brown throughout. Ground sculpture of head, pronotum and elytra shagreened. Head with a raised ridge which extends from the corner of the vertex where the antennae insert to a point approximately a third of the way in toward the middle as in *S. nigritula* n. sp. (fig. 43). Head also with the lateral border quite distinct so that there appears to be a ridge at the lateral border of the vertex. Pronotum (fig. 44) with a shallow depression which is deeper posteriorly but which sends a lateral ramification anteriorly; this depression is shaped and oriented as in figure 44 (dark shading). Pronotum also with four deep punctures along the posterior border; two on each side of the mid-line. Head shape as in *S. nigritula* n. sp. (fig. 43); with no further sculpture. Male genitalia thinly sclerotized, shaped as in fig. 47. Sclerotized tracheal tube of male shaped as in figure 50.

Measurements. — Head length, 0,17-0,19 mm; pronotum length, 0,24-0,25 mm; elytra length, 0,28 mm. Number measured, 2.

Holotype: 1 male, N° *e*259, Congo, Kivu, Uvira, 800 m., May 1951, vestigial sclerophilous forest, Coll. N. LELEUP, collected from humus. In the collection of the Musée Royal de l'Afrique Centrale, Tervuren.

Paratype: 1 male, same data as holotype (D.K.).

The following species are new from the park, but it is not convenient to revise the genera at this time. They will, therefore, be merely described and illustrated here.

Stenaesthetus afer n. sp.

(Fig. 53.)

Distinguished from all other species by the shape of the male genitalia. Most closely related to *Stenaesthetus gerardi* BERNHAUER from which it is distinguished by its generally darker color, its somewhat coarser punctation as well as the shape of the male genitalia.

Color dark reddish brown to black throughout. Surface of head, pronotum, and elytra punctate with coarse punctures. Spaces between the coarser punctures is shagreened. Head, pronotum, and elytra with no further sculpture. Male genitalia shaped as in figure 53.

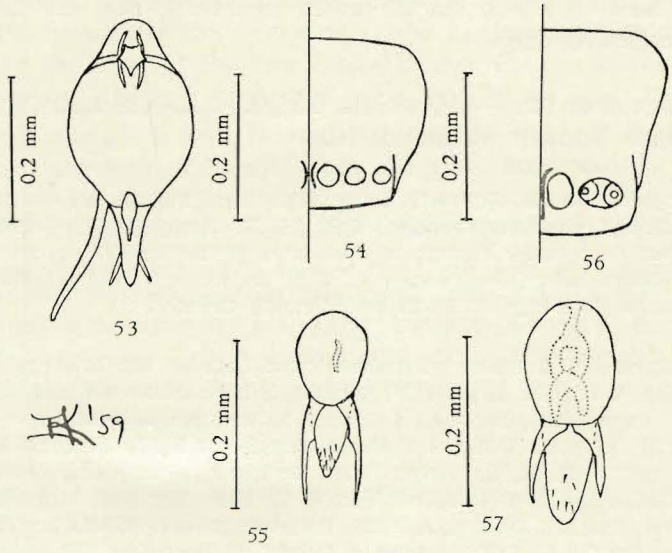
Measurements. — Head length, 0,24-0,29 mm; pronotum length, 0,40-0,46 mm; elytra length, 0,36-0,41 mm. Number measured, 17.

Holotype : 1 male, N° *e*169, Congo, Parc National de la Garamba, Mabanga/10, 7 February 1952, dry stream bed, Coll. J. VERSCHUREN (3114), sifting : nest made of grass on swampy soil, made by *Lophuromys* (No. V. 4362). In the collection of the Institut des Parcs Nationaux du Congo et du Ruanda-Urundi, Brussels.

Paratypes : Congo : Parc National de la Garamba : 6 (2 males, 1 female), same data as the holotype (I.P.N.C.R.U., D.K.); 1 male, Mpaza/9, 24 January 1952, gallery forest with *Mitragyna*, Coll. H. DE SAEGER (3068), sifting : bark of *Mitragyna* and the ground at the base of the trees (I.P.N.C.R.U.); 1 male, II/fc/11, 25 June 1952, swampy plain, Coll. H. DE SAEGER (3695), sifting : soil under grasses in savanna which was not burned plus accumulation of vegetable detritus from the preceding season (I.P.N.C.R.U.); 1 female, II/ke/8, 12 February 1952, head of source with degraded woods, Coll. H. DE SAEGER (3128), Berlese : ground collected from base of hollow tree (I.P.N.C.R.U.); 3 females, II/fd/17, 20 March 1952, gallery forest, Coll. H. DE SAEGER (3258), collected from flowers of *Caloncoba schweinfurthii* which had fallen on to the ground (I.P.N.C.R.U., D.K.); 2 females, II/fc/17, 3 February 1951, Coll. H. DE SAEGER (1222), from decomposing leaves and the trimmings from the gallery (I.P.N.C.R.U., D.K.); 1 male, II/hc/8, 5 April 1951, head of source, Coll. H. DE SAEGER (1509), from under leaves decomposing on the ground (I.P.N.C.R.U.); 7 (2 males, 2 females), Morubia/9, 12 March 1952, gallery forest, Coll. H. DE SAEGER (3236), Berlese : dry ground collected in an excavation at the base of a large tree (I.P.N.C.R.U., D.K.); 2 males, 2 females, II/gd/5, 21 January 1952, herbaceous savanna, Coll. H. DE SAEGER (3050), Berlese : 4 dm³ of ground 0-10 cm deep under clumps of *Urelytrum giganteum* (Gramineae) (Bot. 1361) at the border of a humid coulee before the passage of fire (I.P.N.C.R.U., D.K.); 1 male, 1 female, II/hd/4, 7 April 1952, herbaceous savanna, Coll. H. DE SAEGER (3296), sifting : dry stems of *Nauclea latifolia*, dead from the passage of fire in February (I.P.N.C.R.U., D.K.); 1 female, II/fd/17, 8 March 1951, dry gallery forest, Coll. H. DE SAEGER (1371), Berlese : Organic humid material not presently decomposing (I.P.N.C.R.U.); 5 (3 females), II/dd/4, 17 January 1952, savanna burned the previous night, Coll. J. VERSCHUREN (3035), collected from the swampy course of the Nambirima, at 200 m downstream from the source. All of the surrounding savanna had been burned the preceeding night (I.P.N.C.R.U., D.K.); 2 males, 1 female, II/fd/7‴, 5 May 1952, peripheral part, Coll. H. DE SAEGER (3443), Berlese : 4 dm³ of ground from 0-0,15 m deep under dense vegetation from diverse plants (paludicoles and savanna) from a swampy depression (I.P.N.C.R.U., D.K.); 1 female, II/gd/4, 18 May 1951, near the trail of the park, Coll. J. VERSCHUREN (1768), sifting : 3 rodent nests in savanna which was not burned (I.P.N.C.R.U.); 1 female, II/ge/8, 16 May 1951, gallery forest, Coll. H. DE SAEGER (1776), Berlese : detritus, sawdust, and ground at the base of a hollow tree (I.P.N.C.R.U.); 1 male, 1 female, II/fd/15, 24 May 1951, swampy plain with islets of grasses not burned, Coll. H. DE SAEGER (1815), Berlese : organic decomposing material at the surface of the ground under the herbaceous stratum (I.P.N.C.R.U., D.K.); 1 female, II/fd/18, 4 June 1951, gallery forest, Coll. H. DE SAEGER (1910), decomposing nest of undetermined rodent constructed of clumps of grasses near to the soil (I.P.N.C.R.U.); 1 male, II/gc/6, 5 April 1952, herbaceous savanna, Coll. H. DE SAEGER (3288), sifting : soil, grey alluvial sand (I.P.N.C.R.U.); 1 male, II/gd/8, 7 January 1952, head of source, partly swampy, Coll. H. DE SAEGER (2983), Berlese : Superficial humid soil collected under the Cyperaceae (I.P.N.C.R.U.); 4 males, 1 female, II/cd/9, 8 February 1951, Coll. J. VERSCHUREN (1237), Berlese : dead leaves in decomposition from near the swampy river under the gallery

(I.P.N.C.R.U., D.K.); 1 male, II/gc/4, 17 May 1952, herbaceous savanna, Coll. H. De Saeger (3544), off of mushrooms with tender integuments (I.P.N.C.R.U.).

Remarks. — The designations II/gc, etc. refer to the second biological cell and are fully explained by De Saeger (1956) and can be located on the map provided by him.



Figs. 53, 55, 57. — Male genitalia.

53 : *Stenaesthetus afer* n. sp.; 55 : *Edaphus adazla* n. sp.; 57 : *E. garambicus* n. sp.

Figs. 54 and 56. — Pronotum, right half.

54 : *Edaphus adazla* n. sp.; 56 . *E. garambicus* n. sp.

Edaphus adazla n. sp.

(Figs. 54, 55.)

Distinguished from all other species, by the shape of the male genitalia. Also distinguished from *E. basilewskyi* Kistner and *E. spectabilis* Bernhauer by its antennal club of two joints. Also distinguished from *E. angolensis* Cameron, *E. sechellarum* Bernhauer and *E. africanus* Eppelsheim by the presence of six pronotal fossae instead of four. Also distinguished from *E. marshalli* Bernhauer by the presence of six distinct pronotal fossae instead of having the lateral two on each side contained in a common depression.

Color reddish brown throughout. Surface of head, pronotum, and elytra smooth and shiny with a very few fine yellow recumbent setae which are slightly more dense of the elytra than on the pronotum and head. Antennal club composed of two joints. Pronotum with six distinct basal fossae which are of decreasing size from the middle to the lateral edge (fig. 54). The two middle fossae are separated by two crescent shaped carinas (fig. 54). Pronotum otherwise with no further sculpture. Elytra longer than the pronotum (see measurements); secondary wings present and full-sized. Male genitalia shaped as in figure 55, note the shape of the internal sac (dotted line).

Measurements. — Pronotum length, 0,24-0,28 mm; elytra length, 0,29-0,32 mm. Number measured, 16.

Holotype : 1 male, N° *c*197, Congo, Parc National de la Garamba, II/gd/4, 24 January 1952, herbaceous savanna, Coll. H. De Saeger (3049), Berlese : 4dm³ of ground 0-10 cm deep under clumps of *Urelytrum giganteum* (Gramineae) (Bot. 1361). Collected 24 hours before the passage of fire. In the collection of the Institut des Parcs Nationaux du Congo et du Ruanda-Urundi, Brussels.

Paratypes : 6 (1 male, 2 females), same data as the holotype (I.P.N.C.R.U., D.K.); 2 males, 1 female, II/gd/5, 23 April 1952, herbaceous savanna in the valley, Coll. H. De Saeger (3566), Berlese : 4 dm³ of ground gathered under a dense clump of grasses (I.P.N.C.R.U., D.K.); 1 male, 1 female, II/fd/17, 16 June 1952, clearing in gallery forest, Coll. H. De Saeger (3674), Berlese : decomposing leaves on humid soil (I.P.N.C.R.U., D.K.); 2 females, II/ke/8, 12 February 1952, degraded woods at head of source, Coll. H. De Saeger (3128), Berlese : ground collected at the base of a hollow tree (I.P.N.C.R.U., D.K.); 1 female, II/hc/8, 12 December 1951, degraded gallery forest, Coll. H. De Saeger (2929), Berlese : ground under a corbelling formed by *Platycerium* (an epiphytic fern) (I.P.N.C.R.U.); 1 female, Delele/R., heap of granite rocks with numerous trees, 8 February 1952, Coll. J. Verschuren (3113), Berlese : 2 kg of guano of Chiroptera (Molosside/V. 4356) collected in a long fissure on a *Vitex*. The Chiroptera were present; 15 individuals over the guano deposit (I.P.N.C.R.U.); 1 male, Morubia/9, gallery forest, 12 March 1952, Coll. H. De Saeger (3236), Berlese : dry ground collected in an excavation at the base of a large tree (I.P.N.C.R.U.); 1 female, II/je/9, degraded gallery forest along the river, 15 October 1951, Coll. H. De Saeger (2657), Berlese : dead branches of *Erythrophloeum* (I.P.N.C.R.U.); 1 female, II/gd/5, herbaceous savanna, 21 January 1952, Coll. H. De Saeger (3050), Berlese : 4 dm³ ground 0-10 cm deep under a clump of *Urelytrum giganteum* (Gramineae) (Bot. 1361) before the passage of the fire (I.P.N.C.R.U.).

Remarks. — The designation II/gd/, etc., refer to positions in the second biological cell, a map of which is given by De Saeger (1956).

Edaphus garambicus n. sp.

(Fig. 56, 57.)

Distinguished from all other species by the shape of the male genitalia. Also distinguished from *E. basilewskyi* KISTNER and *E. spectabilis* BERNHAUER by its antennal club of two joints. Also distinguished from *E. angolensis* CAMERON, *E. sechellarum* BERNHAUER and *E. africanus* EPPELSHEIM by the presence of six pronotal fossae instead for four. Also distinguished from *E. marshalli* BERNHAUER by the presence of two small carinas, one on each of the midline of the pronotum. Also distinguished from *E. adazla* n. sp. by the presence of the two lateral fossae in a common depression rather than being distinct, its darker color, and larger size.

Color dark reddish brown throughout, tending toward black. Surface of the head, pronotum, and elytra smooth and shiny with a sparse but more or less even covering of yellow recumbent setae. Antennal club 2-segmented. Pronotum with six basal fossae; the one just lateral of the midline distinct; the two more lateral ones on each side contained in a shallow but common depression (fig. 56). The two medial fossae are separated from each other by two small elongate crescent shaped carinas (fig. 56). Elytra longer than the pronotum; secondary wings present and full-sized. Male genitalia shaped as in figure 57; note the shape of the internal sac (dotted lines).

Measurements. — Pronotum length, 0,24-0,28 mm; elytra length, 0,35-0,38 mm. Number measured, 8.

Holotype : 1 male, N° *e*187, Congo, Parc National de la Garamba, II/gd/11, swampy valley, 21 April 1952, Coll. H. DE SAEGER (3337), Berlese : 4 dm³ of ground gathered under the foot of *Urelytrum* (Gramineae). In the collection of the Institut des Parcs Nationaux du Congo et du Ruanda-Urundi, Brussels.

Paratypes : Congo, Parc National de la Garamba : 1 male, 1 female, same data as the holotype (I.P.N.C.R.U., D.K.); 1 male, 1 female, II/fd/18, gallery forest, 4 June 1951, Coll. H. DE SAEGER (1910), from the nest of an undetermined rodent constructed from a clump of grasses close to the soil. The organic materials forming the nest were decomposing (I.P.N.C.R.U., D.K.); 1 male, II/ke/8, head of source with degraded woods, 12 February 1952, Coll. H. DE SAEGER (3128), Berlese : ground collected at the base of a hollow tree (I.P.N.C.R.U.); 1 male, II/gc/8, head of source, wooded, 22 February 1951, Coll. H. DE SAEGER (1319), Berlese : bark and sawdust detritus at the base of a dead tree (I.P.N.C.R.U.); 1 female, II/gc/8, head of source, feebly wooded, 30 April 1952, Coll. H. DE SAEGER (3434), Berlese : decomposing wood of *Voacanga obtusa* (humid powder stage) (I.P.N.C.R.U.).

Remarks. — The designation II/gd, etc., refers to specific locations in the second biological cell. These may be located by the use of the map provided by DE SAEGER (1956).

Octavius sp.

Material examined :

1 female, Congo, Parc National de la Garamba, II/ed/16, gallery forest, 20 March 1951, Coll. H. De Saeger (1436), from carpophores of *Fomes lignosus*.

Remarks. — This species is related to *Octavius sulcicollis* (Bernhauer) and *O. ituriensis* Kistner through the eye shape. It cannot be identified with certainty until a male specimen is available for study.

Genus sp ?

Material examined :

1 male, Congo, Parc National de la Garamba, II/ke/8, head of source with degraded forest, 12 February 1952, Coll. H. De Saeger (3128), Berlese : ground collected at the base of a hollow tree.

Remarks. — This interesting species is related to the genus *Edaphus*, but more material is needed to determine it with certainty. It may be a new genus; it certainly is a new species.

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