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Contribution to the tribe Brachinini (Coleoptera: Carabidae) - I. Redescription of five species of the genera *Brachinus* and *Styphlomerus* from Africa

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Abstract. The following new combination is proposed: *Styphlomerus collarti* (Basilewsky, 1948) comb. n. (from *Brachinus* Weber, 1801). Five African species: *Brachinus sexnotatus gerardi* Burgeon, 1937, *Brachinus connectus seydeli* Burgeon, 1937, *Brachinus connectus ovalis* Liebke, 1934, *Brachinus stappersi* Liebke, 1934 and *Styphlomerus collarti* (Basilewsky, 1948) are redescribed and illustrated. Male genitalia of existing males from type material: *Brachinus connectus ovalis* Liebke, 1934, *Brachinus stappersi* Liebke, 1934, *Styphlomerus collarti* (Basilewsky, 1948) is illustrated.

INTRODUCTION

In the African continent (incl. Madagascar) the genus *Brachinus* Weber, 1801 is represented by 110 species, the genus *Styphlomerus* Chaudoir, 1875 by 47 species. The last complete revision of the tribe Brachinini was published by Chaudoir (1876). A work aimed at the African continent was published later by Liebke (1934), but it included only a part of species. Madagascar was considered by Jeannel (1949). Descriptions of a majority of species and further published data are obsolete, male genitals were not studied. Figures are only schematic if any. Thus, the identification and new descriptions are very complicated. The first step to the improvement of this adverse condition is redescription, which could make possible subsequent revisions, at least of groups of species. A reliable differentiation at the generic level was published by Erwin (1970), based on which one species was reclassified into the genus *Styphlomerus*. It is likely that the existing unclear classification of the genus *Brachinus* into subgenera will be considerably altered in the future and thus, the redescribed species were intentionally not included into subgenera.

MATERIAL AND METHODS

Type material was loaned by the Royal Museum for Central Africa, Tervuren. The types were cleaned with alcohol and aedeagi were extracted from male specimens. Photos of specimens used for the redescriptions were provided. Given the age of the type specimens and methods

of their killing and mounting, the antennae are not straight and thus, their measurements are less precise compared to those in fresh material. The body length was measured from anterior margins of mandibles to posterior margin of elytra. The elytra length was measured from the anterior margin of the scutellum to the posterior margin of the elytra. Exact label data are cited for the type material, separate lines on labels are indicated by „/“, separate labels by „//“. Autor´s remarks and comments are found in square brackets. [p] - the preceding data were printed; [hw] - the same was hand-written.

TAXONOMY

Brachinus sexnotatus gerardi Burgeon, 1937

(Fig. 11)

Brachinus sexnotatus var. *Gérardi* Burgeon, 1937: 390.
Brachinus sexnotatus ssp. *Gérardi*: Basilewsky, 1951: 19.
Brachinus (*Metabrachinus*) *sexnotatus* ssp. *gerardi*: Lorenz, 1998: 17.

Type locality: „Kiambi“ in Congo Belge (Burgeon, 1937) [= DEMOCRATIC REPUBLIC OF CONGO, Katanga Province, Tanganika District, Manono Terr., Kiambi city].

Type material. Holotype (♀) labelled: „HOLOTYPE [p, red label] // MUSÉE DU CONGO [p] / Tanganika : Moero [p] / Kiambi-VI-VII-1930 [hw] / Dr P. Gérard [p, white label] // Brachinus [hw] / Gérardi Burg. [hw] / dét. L. Burgeon [p, white label] // Brachinus [p] / sexnotatus gerardi [p] / Burgeon, 1937 [p] / (Holotype) [p] / det. Jan Hrdlička, 2006 [p, white label]“. Holotype is pinned and is not damaged.

Redescription of the female holotype. A medium sized *Brachinus*. Body length 11.10 mm; 2.27 times longer its width. Body convex (body length (11.10 mm) / maximum dorso-ventral height of body (3.25 mm) = 3.42). Body and appendages yellow, elytra dark brown with yellow pattern.

Head yellow, eyes large (silver-grey). Head with eyes markedly wider than pronotum (width of head (2.09 mm) / width of pronotum (1.88 mm) = 1.11). Margin and apex of mandibles and lateral fringe of eyes brown. Head smooth and shiny dorsally, frontal furrows combined in the shape of arc with several striae. Anterior corners of frons with a number of setae. Head behind eyes strongly constricted, only sparsely setose. Mandibles in side-view with plurisetose scrobe. Mentum without tooth at anterior edge. Labrum transverse, with the anterior margin slightly concave and bearing 6 setae. Clypeus trapezoidal, with the anterior margin slightly concave and bearing 2 setae.

Antennae long, narrow. Antennomeres 1-4 yellow, 1-2 with sporadic long setae, 3-4 pubescent, with shorter setae, 5-11 rusty red and densely pubescent with short setae and sporadic longer setae. Ratio of relative lengths of antennomeres from base to apex as follows: 0.67: 0.23: 1.00: 0.80: 0.67: 0.67: 0.67: 0.60: 0.64: 0.60: 0.74. Ratio (length / largest width) of antennomeres from base to apex as follows: 2.06: 0.92: 4.38: 3.50: 2.92: 3.18: 3.18: 2.86: 3.19: 3.00: 3.71. Elongation index of the antennae (body length (11.10 mm) / antennal length (7.64 mm) = 1.45).

Maxillary palpus and labial palpus yellow, narrow, relatively long, last article truncate apically. Ratio (length / most width) of last maxillar palpomere is 3.64.

Pronotum yellow. Sides of pronotum cordiform, with narrow dark brown line, maximum width at the end of first quarter. Pronotum a little longer than wide (maximum length (1.89 mm) / maximum width (1.88 mm) = 1.01). Width of anterior margin 1.40 mm. Maximum width (at the end of first quarter of pronotum) 1.88 mm. Minimum width (at the beginning of last fifth of pronotum) 1.16 mm. Width of posterior margin 1.30 mm. Disc strongly convex, with punctation, with yellow pubescence. Some punctures are interconnected, thus reminding of transversely wrinkled structures. Anterior margin of pronotum with indistinct longitudinal wrinkles which are reduced in length from centre to lateral margins of pronotum. Anterior and posterior margins of pronotum with dense rows of setae. Posterior angles of pronotum acute, pointed at apex. Median line of pronotum deepened apicad, ending at the beginning of last quarter of pronotum.

Ventral side of body. Mainly yellow. Epimeron of mesothorax, episternum of metathorax, epimeron of metathorax, ventrites 6-7 and margins of ventrites 1-5 dark brown. Prothorax smooth, without setae, mesothorax, and ventrites with punctuation and yellow setae.

Scutellum yellow.

Elytra dark brown. Exterior margin, epipleura and spots yellow. Elytral disc convex, sides of elytra rounded, humeri distinct. Elytra approximately 1.48 times longer than together wide. Maximum width (approximately at the beginning of last third) 4.90 mm. Maximum length 7.25 mm. Each elytron with 7 rounded costae. Elytral disc with microsculpture (polygonal meshes). Elytra with uniform dense punctation and yellow pubescence (inclusive of costae). Anterior and exterior margin with yellow strip inclusive of epipleura. In anterior quarter, a narrow, thin, elongate, yellow spot ending ca. at the second third of elytra is separated from the yellow strip. Humerus with elongate yellow spot, anteriorly combined with yellow lateral margin of elytron. Central part of elytron with an isolated, smaller, irregular, round yellow spot (length 1.10-1.25 mm). Apical part of elytron with a U-shaped spot, opened in direction of head, touching by its bottom margin the yellow lateral margin of elytra. This spot yellow present only at end of the tip at elytral suture, remaining part less distinct (pale brown). Thus, at first sight it erroneously seems to be isolated round spot. Posterior margin of elytra with membranous fringe without setae (setae not visible even with zoom 50x).

Legs long and narrow, yellow. Femora sparsely pubescent, tibia and tarsi densely pubescent. Tarsomeres of protarsus symmetrical, with ventral vestiture consisting of two parallel rows of spatulate setae parallel with axis of tarsus.

Male unknown.

Differential diagnosis. *Brachinus sexnotatus gerardi* Burgeon, 1937 closely related to *Brachinus sexnotatus sexnotatus* Liebke, 1934 (described and known from Tanzania - Tanga), from which it is different by the elytral pattern, narrower elytra, narrower pronotum as well as still known distribution.

Distribution. Known only based on two specimens from localities: Democratic Republic of Congo - Kiambi (Burgeon, 1937), Albertville (Basilewsky, 1951).

Biology. In accordance with published data, the first specimen was caught in June (vi.30) (Burgeon, 1937) and second in November (12.xi.1946) (Basilewsky, 1951). No other data about the biology of this species are known.

Discussion. For distinct establishing of the taxonomic position of the *Brachinus sexnotatus gerardi* Burgeon, 1937 it will be necessary to accumulate more specimens from different localities. I have still no knowledge concerning the existence of the holotype of the *Brachinus sexnotatus sexnotatus* Liebke, 1934. It was likely destroyed during the World War II. In my collection, there are three specimens (females) resembling the *Brachinus sexnotatus sexnotatus* Liebke, 1934 from Kenya and further two slightly different specimens from South Africa and Zambia (male and female). More definite solution will be perhaps possible after providing a sufficient number of specimens, measuring ratios of their dimensions and comparing their aedeagi.

***Brachinus connectus seydeli* Burgeon, 1937**
(Fig. 12)

Brachinus connectus ssp. *Seydeli* Burgeon, 1937: 389.
Brachinus (*Metabrachinus*) *connectus* ssp. *seydeli*: Lorenz, 1998: 17.

Type locality: „Kisumba“ in Congo Belge (Burgeon, 1937) [= DEMOCRATIC REPUBLIC OF CONGO, Katanga Province, Haut Katanga District, Likasi Terr., Kisunka city].

Type material. Holotype (♀) labelled: „HOLOTYPUS [p, red label] // MUSÉE DU CONGO [p] / Katanga : [p] / Kisunka -2-IV-1925 [hw] / Ch. Seydel [p, white label] // Kisunka / 2 Avril 1925 / Ch.Seyde! [p, white label] // Brachinus / connectus Dej. / ssp. Seydeli Burg [hw] / dét. L. Burgeon [p, white label] // Brachinus [p] / connectus seydeli [p] / Burgeon, 1937 [p] / (Holotype) [p] / det. Jan Hrdlička, 2006 [p, white label]“. Holotype is pinned and damaged (lacking 8 antennomeres of right antenna).

Redescription of the female holotype. A medium sized *Brachinus*. Body length 12.80 mm; 2.33 times longer its width (in original description length of 12.00 mm is alleged, but holotype has his head tilted down). Body flat (body length (12.80 mm) / maximum dorso-ventral height of body (3.25 mm) = 3.94). Body and appendages red (different nuances), elytra black-brown with red pattern.

Head rusty red, eyes large (silver-grey). Head with eyes wider than pronotum (width of head (2.31 mm) / width of pronotum (2.13 mm) = 1.09). Margin and apex of mandibles and lateral fringe of eyes brown. Head smooth and shiny dorsally, with frontal furrows. Anterior corners of frons with a number of setae. Head behind eyes strongly constricted, only sparsely setose. Mandibles in side-view with plurisetose scrobe. Mentum without tooth at anterior edge. Labrum transverse, with the anterior margin slightly concave and bearing 6 setae. Clypeus trapezoidal, with the anterior margin slightly concave and bearing 2 setae.

Antennae long, narrow. Antennomeres 1-4 rusty red, 1-2 with sporadic long setae, 3-4 pubescence by shorter setae, 5-11 red-brown and densely pubescence by short setae with

sporadic longer setae. Ratio of relative lengths of antennomeres from base to apex as follows: 0.60: 0.25: 1.00: 0.67: 0.69: 0.69: 0.69: 0.67: 0.63: 0.60: 0.76. Ratio (length / largest width) of antennomeres from base to apex as follows: 1.96: 1.33: 4.39: 3.12: 3.44: 3.67: 3.67: 3.79: 3.57: 3.69: 4.62. Elongation index of the antennae (total body length (12.80 mm) / antennal length (8.05 mm) = 1.59).

Maxillary palpus and labial palpus rusty red, narrow, relatively long, last article truncate apically.

Ratio (length / most width) of last maxillar palpomere is 3.08.

Pronotum rusty red. Sides of pronotum cordiform with narrow brown line, maximum width in the end of first quarter. Pronotum a little longer than wide (maximum length (2.17 mm) / maximum width (2.13 mm) = 1.02). Width of anterior margin 1.68 mm. Maximum width (at the end of first quarter of pronotum) 2.13 mm. Minimum width (at the beginning of last sixth of pronotum) 1.50 mm. Width of posterior margin 1.61 mm. Disc convex, shiny, with sporadic yellow pubescence on corners, with irregular, transversely wrinkled sculpture. Anterior margin of pronotum very finely punctate. Anterior and posterior margin of pronotum with dense row of setae. Posterior angles of pronotum acute, little rounded at apex. Median line of pronotum deepened apicad, ending at the beginning of last sixth of pronotum.

Ventral side of body. Mesothorax and metathorax red. Median parts of ventrites 1-5 brown-red. Epimeron of mesothorax, episternum of metathorax, epimeron of metathorax, ventrites 6-7 and margins of ventrites 1-5 brown-black. Other parts rusty red. Prothorax smooth, without setae, mesothorax, metathorax and ventrites with punctuation and yellow setae.

Scutellum rusty red.

Elytra black-brown. Exterior margin, epipleura and spots rusty red. Elytral disc flat, sides of elytra almost straight (rounded at the last quarter), humeri distinct (less prominent compared to preceding species). Elytra approximately 1.47 times longer than together wide. Maximum width (approximately at the beginning of last quarter) 5.50 mm. Maximum length 8.10 mm. Elytral disc with little distinct microsculpture (polygonal meshes). Elytra with punctation and yellow pubescence (between costae). Each elytron with 7 (little distinct) rounded and smooth costae (costa 7 distinct at the posterior half of elytra). Exterior margin with rusty red strip inclusive of epipleura. Humeri with big, elongate rusty red spot with irregular margins, anteriorly narrowly combined with rusty red elytral epipleura. At the beginning of last third of elytra, there is an isolated, smaller, irregular, rusty red spot, divided into two parts by black-brown costa 3. Elytra posteriorly, at outer corner with a small, less distinct spot, touching by its bottom part rusty red lateral margin of elytra. Posterior margin of elytra with membranous fringe without setae (setae not visible even with zoom 50x).

Legs long and narrow, rusty red. Hind coxa and hind trochanter red. Femora sparsely pubescent, tibia and tarsi densely pubescent. Tarsomeres of protarsus symmetrical, with ventral vestiture consisting of two parallel rows of spatulate setae parallel with axis of tarsus.

Male unknown.

Differential diagnosis. *Brachinus connectus seydeli* Burgeon, 1937 is obviously closely related to the *Brachinus connectus ovalis* Liebke, 1934 (described and known from Cameroon

- Joko), from which it differs by more elongate elytra and different elytral pattern. Burgeon (1937) also mentioned that the *Brachinus distinctus* Péringuey, 1896 differs by punctate elytral intervals.

Distribution. Known only based on one specimen from locality: Democratic Republic of Congo - Kisumba (Burgeon, 1937).

Biology. Based on still published data, only one specimen was caught in April (iv.25) (Burgeon, 1937). No other data about the biology of this species are known.

Discussion. For a clear definition of the taxonomic position of the *Brachinus connectus seydeli* Burgeon, 1937 it is desirable to accumulate more numerous material from the type locality as well as from other localities. Thereafter, a definite solution of the problem will perhaps be possible based on measuring the ratios of dimensions and comparing the aedeagi.

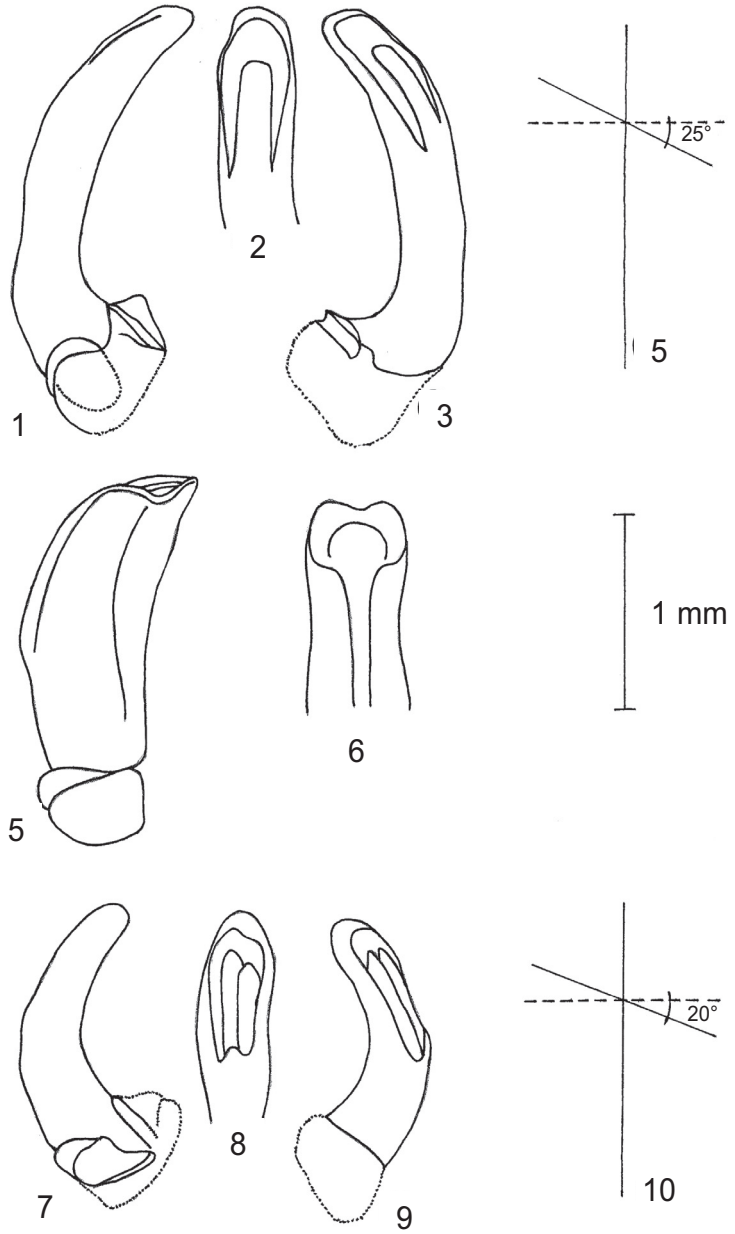
***Brachinus connectus ovalis* Liebke, 1934**

(Figs 1-4, 13)

Brachynus connectus ssp. *ovalis* Liebke, 1934: 22, fig. 4.
Brachinus connectus ssp. *ovalis*: Burgeon, 1937: 389.
Metabrachinus connectus ssp. *ovalis*: Basilewsky, 1953: 238.
Brachinus (*Metabrachinus*) *connectus* ssp. *ovalis*: Lorenz, 1998: 17.

Type locality: „Kamerun“ (Liebke, 1934) [= CAMEROON].

Type material. Paratype 1 (♂) labelled: „PARATYPE [p, red label] // MUSÉE DU CONGO [p] / Kamerun: Joko [p] / Don. Moser [p, white label] // Kotype [p, pink label] // R. DÉT. [p] / 1712 [p] / F [hw, white label] // Brach. connectus [hw] / ssp. ovalis Lbk. [hw] / det. M. Liebke. Hamburg [p, white label] // Brachinus [p] / connectus ovalis [p] / Liebke, 1934 [p] / (Paratype 1) [p] / det. Jan Hrdlička, 2006 [p, white label]“. Paratype 1 is pinned and damaged (lacking 10 antennomeres of right antenna, 1/2 last antennomere of left antenna, mesotarsus and metatarsus on left side, metatarsus on right side). Aedeagus mounted with glue. Paratype 2 (♀♀) labelled: „PARATYPE [p, red label] // MUSÉE DU CONGO [p] / Kamerun: Joko [p] / Don. Moser [p, white label] // Kotype [p, pink label] // R. DÉT. [p] / 1712 [p] / F [hw, white label] // Brach. connectus [hw] / ssp. ovalis Lbk. [hw] / det. M. Liebke. Hamburg [p, white label] // Brachinus [p] / connectus ovalis [p] / Liebke, 1934 [p] / (Paratype 2) [p] / det. Jan Hrdlička, 2006 [p, white label]“. Paratype 2 is pinned and damaged (lacking hind leg on left side and 3 tarsomeres of metatarsus on right side). Paratype 3 (♀) labelled: „PARATYPE [p, red label] // MUSÉE DU CONGO [p] / Kamerun: Joko [p] / Don. Moser [p, white label] // Kotype [p, pink label] // R. DÉT. [p] / 1712 [p] / F [hw, white label] // Brach. connectus [hw] / ssp. ovalis Lbk. [hw] / det. M. Liebke. Hamburg [p, white label] // ovalis [hw] / Lbke [hw] / P. Basilewsky det., 19 [p, white label] // Brachinus [p] / connectus ovalis [p] / Liebke, 1934 [p] / (Paratype 3) [p] / det. Jan Hrdlička, 2006 [p, white label]“. Paratype 3 is pinned and damaged (lacking 2 maxillary palpomeres on left side, whole maxillary palpus on right side, 1 labial palpomere on left side, 1 tarsomere of left mesotarsus).



Figs 1-10: aedeagus. Figs 1-4: *Brachinus connectus ovalis* Liebke, 1934, Figs 5-6: *Brachinus stappersi* Liebke, 1934, Figs 7-10: *Styphlomerus collarti* (Basilewsky, 1948). 1,3,5,7,9- lateral view; 2,6,8- dorsal view; 4,10- deflection of the apical flattened part from the plane perpendicular to the aedeagus axis - frontal view.

Redescription of the male paratype 1. A medium sized *Brachinus*. Body length 10.50 mm; 2.19 times longer its width. Body rather flat (body length (10.50 mm) / maximum dorso-ventral height of body (2.75 mm) = 3.82). Body and appendages rusty red, elytra black-brown with red pattern.

Head rusty red, eyes large (silver-grey). Head with eyes almost as wide as pronotum (width of head (2.03 mm) / width of pronotum (2.00 mm) = 1.02). Margin and apex of mandibles and lateral fringe of eyes brown. Head smooth and shiny dorsally, with frontal furrows. Anterior corners of frons with a number of setae. Head behind eyes strongly constricted, only sparsely setose. Mandibles in side-view with plurisetose scrobe. Mentum without tooth at anterior edge. Labrum transverse, with the anterior margin slightly concave and bearing 6 setae. Clypeus trapezoidal, with the anterior margin slightly concave and bearing 2 setae.

Antennae long, narrow. Antennomeres 1-2 rusty red with sporadic long setae, 3-4 black-brown and pubescence by shorter setae, 5-11 red-brown and densely pubescence by short setae with sporadic longer setae. Part of antennomere 11 absent. Ratio of relative lengths of antennomeres from base to apex as follows: 0.57: 0.29: 1.00: 0.63: 0.60: 0.60: 0.60: 0.57: 0.57: 0.57: x. Total length of antennae (without part of antennomere 11) 7.37 mm. Ratio (length / most width) of antennomeres from base to apex as follows: 2.00: 1.25: 4.19: 2.50: 2.52: 2.65: 2.65: 2.50: 2.78: 2.94: x. Elongation index of the antennae cannot be established in this specimen due to the damage.

Maxillary palpus and labial palpus rusty red, narrow, relatively long, last article truncate apically.

Ratio (length / most width) of last maxillar palpomere is 3.00.

Pronotum rusty red. Sides of pronotum cordiform with narrow brown line, maximum width at the end of first quarter. Pronotum a little longer than wide (maximum length (2.03 mm) / maximum width (2.00 mm) = 1.02). Width of anterior margin 1.43 mm. Maximum width (at the end of first quarter of pronotum) 2.00 mm. Minimum width (at the beginning of last sixth of pronotum) 1.25 mm. Width of posterior margin 1.37 mm. Disc convex, shiny, with sporadic yellow pubescence on corners, irregular transversely wrinkled microsculpture is missing or it is only weak and restricted to apical half of pronotum at median line. Anterior and posterior margin of pronotum punctate. Anterior and posterior margin of pronotum with dense row of setae. Posterior angles of pronotum acute, pointed at apex. Median line of pronotum deepened apicad, reach at the posterior margin of pronotum.

Ventral side of body. Mainly rusty red. Epimeron of mesothorax, episternum of metathorax, epimeron of metathorax, margins of ventrites 1-5 and prevalent proportion of ventrites 6-8 brown. Prothorax smooth, without setae, mesothorax, metathorax and ventrites with punctuation and yellow setae.

Scutellum rusty red.

Elytra black-brown. Exterior margin, epipleura and spots rusty red.

Elytral disc flat, sides of elytra rounded, humeri distinct (slightly less prominent compared to the preceding species). Elytra approximately 1.43 times longer than together wide. Maximum width (approximately at the beginning of last third) 4.80 mm. Maximum length 6.85 mm. Elytral disc with little distinct microsculpture (polygonal meshes). Elytra with punctation and yellow pubescence (between costae). Each elytron with 7 (little distinct)

rounded and smooth costae (costa 7 distinct from the posterior second third of elytra). Exterior margin with rusty red strip inclusive of epipleura. Humeri with irregular, rusty red spot touching rusty red lateral margin of elytra. Anterior margin of spot not interconnected with elytral epipleura. At the beginning of last third of elytra, there is an isolated, round, rusty red spot. Elytra slightly immature in posterior outer corners.
Posterior margin of elytra with membranous fringe without setae (setae not visible even with zoom 50x).

Legs long and narrow, rusty red. Femora sparsely pubescent, tibia and tarsi densely pubescent. Tarsomeres of protarsus asymmetrical, with ventral vestiture consisting of two parallel rows of spatulate setae diagonally arranged with respect to tarsus axis. Tarsomeres of mesotarsus and metatarsus symmetrical.

Male genitalia (Figs 1-4). Aedeagus long and narrow, strongly bent at base. Approximately basal two third of aedeagus has circular cross section, apical third flattish dorso-ventrally. Flattish part is at angle of about 25° to plane perpendicular to aedeagus axis. The tip is obliquely truncate, with round corners.

Variability. Based on three type specimens, the variability is most considerable in the elytral pattern. Humeral spot in paratype 2 does not touch the lateral rim, but it is anteriorly narrowly interconnected with the epipleuron; in paratype 3, it is quite separated from the lateral rim as well as anteriorly from the epipleuron. Apical spots are different in both shape and size. Paratypes 2 and 3 have no brown field in posterior corners of elytra. Body length 10.50-11.50 (aver. 11.10) mm. Pronotum (maximum length / maximum width = 1.02-1.09, aver. 1.06). Elytra 1.36-1.45 times longer than together wide (aver. 1.41).

Differential diagnosis. *Brachinus connectus ovalis* Liebke, 1934 closely related to *Brachinus connectus connectus* Dejean, 1831 from Senegal. Liebke (1934) mentioned that the *Brachinus connectus ovalis* has smaller and isolated apical spots on elytra. Humeral spots are also isolated from red lateral margins of elytra. Pronotum narrower.

Distribution. Known as many specimens from localities: Cameroon - Kamerun (Liebke, 1934), Joko (Burgeon, 1937); Democratic Republic of Congo - Kansenia (Burgeon, 1937), Parc National de l´Upemba (Kamitunu, Gorges de la Pelenge, Lusinga, Kabwe, Kembwile) (Basilewsky, 1953); Guinea - Mt. Nimba (Kéoulenta) (Basilewsky, 1952); Rwanda - Mahembe (Basilewsky, 1956); Burundi - Kitega (Basilewsky, 1956).

Biology. Based on published data, 18 specimens were collected in savannah of Guinea in July-August (Basilewsky, 1952). More numerous specimens were caught in the Parc National de l´Upemba in the Democratic Republic of Congo at 1.050-1.760 m a.s.l. in February, March, May, July (Basilewsky, 1953). 1 specimen was caught in Rwanda at 1.400 m a.s.l. in January and 1 specimen in Burundi at 1.600-1.700 m a.s.l. in March (Basilewsky, 1956). No other data about the biology of this species are known.

Discussion. Liebke (1934) mentioned that the type is deposited in „Hamburger Zoologischen Museum“ and further specimens in „Kongo-Museum, Tervuren, Museum für Tierkunde, Dresden, Zoolog. Museum, Berlin“ and in coll. Liebke. The original type was likely destroyed during the World War II. I also have no information concerning the existence of the above mentioned paratypes except three specimens from the Royal Museum for Central Africa,

Tervuren. I still have no complete information whether some type specimens were not still saved and thus, I do not establish neotype. Establishing of male neotype will be desirable, if the holotype is not found (paratype 1).

Brachinus stappersi Liebke, 1934

(Figs 5-6, 14)

Brachynus stappersi Liebke, 1934: 26, fig. 8.
Brachinus Stappersi: Burgeon, 1937: 389.
Brachinus (*Metabrachinus*) *stappersi*: Lorenz, 1998: 17.

Type locality: „Ufer des Ruzizi-Sees“ in Kongo-Staat (Liebke, 1934) [= DEMOCRATIC REPUBLIC OF CONGO].

Type material. Holotype (♀) labelled: „HOLOTYPE [p, red label] // Type [p, pink label] // MUSÉE DU CONGO [p] / Rives de la Ruzizi [hw] / 24.VII.1912 [hw] / Dr. Stappers [p] / 1262 [hw, white label] // R. DÉT. [p] / 1712 [p] / D [hw, white label] // Brachynus [hw] / stappersi Lbk. [hw] / det. M. Liebke. Hamburg [p, white label] // Brachinus [p] / stappersi [p] / Liebke, 1934 [p] / (Holotype) [p] / det. Jan Hrdlička, 2006 [p, white label]“. Holotype is pinned and damaged (lacking middle leg on right side). Paratype 1 (♂) labelled: „PARATYPE [p, red label] // Kotype [p, pink label] // MUSÉE DU CONGO [p] / Rives de la Ruzizi [hw] / 24.VII.1912 [hw] / Dr. Stappers [p] / 1262 [hw, white label] // R. DÉT. [p] / 1712 [p] / D [hw, white label] // Brachynus [hw] / stappersi Lbk. [hw] / det. M. Liebke. Hamburg [p, white label] // Brachinus [p] / stappersi [p] / Liebke, 1934 [p] / (Paratype 1) [p] / det. Jan Hrdlička, 2006 [p, white label]“. Paratype 1 is pinned, slightly immature and damaged (lacking 9 antennomeres of right antenna, 2 antennomeres of left antenna, 3 tarsomeres of metatarsus on right side and 2 tarsomeres of metatarsus on right side). Aedeagus is mounted with glue. Paratype 2 (♀) labelled: „PARATYPE [p, red label] // Kotype [p, pink label] // MUSÉE DU CONGO [p] / Rives de la Ruzizi [hw] / 24.VII.1912 [hw] / Dr. Stappers [p] / 1262 [hw, white label] // R. DÉT. [p] / 1712 [p] / D [hw, white label] // Brachynus [hw] / stappersi Lbk. [hw] / det. M. Liebke. Hamburg [p, white label] // Brachinus [p] / stappersi [p] / Liebke, 1934 [p] / (Paratype 2) [p] / det. Jan Hrdlička, 2006 [p, white label]“. Paratype 2 is pinned, damaged (lacking 2 tarsomeres of protarsus on right side, hind leg on left side and metatarsus on right side).

Redescription of the female holotype. A medium sized *Brachinus*. Body length 8.85 mm; 2.39 times longer its width. Body rather convex (body length (8.85 mm) / maximum dorso-ventral height of body (2.38 mm) = 3.72). Body and appendages dark brown-yellow, elytra brown-black with dark brown-yellow lateral margin.

Head brown-yellow (dark-ochre), eyes large (silver-grey). Head with eyes wider than pronotum (width of head (1.58 mm) / width of pronotum (1.47 mm) = 1.07). Head smooth and shiny dorsally, with frontal furrows. Anterior corners of frons with a number of sporadic setae. Head behind eyes strongly constricted, finely wrinkled, only sparsely setose. Mandibles in side-view with plurisetose scrobe. Mentum without tooth at anterior edge. Labrum transverse,

with the anterior margin slightly concave and bearing 6 setae. Clypeus trapezoidal, with the anterior margin slightly concave and bearing 2 setae.

Antennae long, narrow, yellow-brown (ochre). Antennomeres 1-2 with sporadic long setae, 3-4 pubescence by shorter setae, 5-11 densely pubescence by short setae with sporadic longer setae. Ratio of relative lengths of antennomeres from base to apex as follows: 0.67: 0.25: 1.00: 0.63: 0.62: 0.63: 0.63: 0.58: 0.58: 0.57: 0.71. Ratio (length / most width) of antennomeres from base to apex as follows: 2.12: 1.15: 4.00: 2.53: 2.47: 2.71: 2.71: 2.50: 2.50: 2.43: 3.31. Elongation index of the antennae (total body length (8.85 mm) / antennal length (5.78 mm) = 1.53).

Maxillary palpus and labial palpus yellow-brown (ochre), narrow, relatively long, last article truncate apically. Ratio (length / most width) of last maxillar palpomere is 3.20.

Pronotum brown-yellow (dark-ochre). Sides of pronotum cordiform, maximum width in the end of first quarter. Pronotum a little longer than wide (maximum length (1.54 mm) / maximum width (1.47 mm) = 1.05). Width of anterior margin 1.19 mm. Maximum width (at the end of first quarter of pronotum) 1.47 mm. Minimum width (at the beginning of last sixth of pronotum) 1.02 mm. Width of posterior margin 1.12 mm. Disc convex, little dull with microsculpture, with sporadic yellow pubescence, with irregular transversely wrinkled sculpture. Anterior and posterior margin of pronotum punctate. Anterior and posterior margin of pronotum with dense row of setae. Posterior angles of pronotum acute, pointed at apex. Median line of pronotum deepened apicad, reaching the posterior margin of pronotum.

Ventral side of body. Mainly brown-yellow (dark-ochre). Margins of ventrites 1-5 and prevalent portion of ventrites 6-7 brown-black. Prothorax smooth, without setae, mesothorax, metathorax and ventrites with punctuation and yellow setae.

Scutellum brown-yellow (dark ochre).

Elytra brown-black. Exterior margin and epipleura brown-yellow (dark-ochre). Elytral disc convex, sides of elytra rounded, humeri distinct. Elytra approximately 1.45 times longer than together wide. Maximum width (approximately at the beginning of last third) 3.70 mm. Maximum length 5.35 mm. Elytral disc with microsculpture (polygonal meshes). Elytra with punctation and yellow pubescence (between costae). Each elytron with 7 (little distinct) rounded and smooth costae (costa 7 distinct from the posterior second third of elytra). Exterior margin with brown-yellow (dark ochre) strip inclusive of epipleura. Posterior margin of elytra with membranous fringe without setae (setae not visible even with zoom 50x).

Legs long and narrow, brown-yellow (dark-ochre). Femora sparsely pubescent, tibia and tarsi densely pubescent. Tarsomeres of protarsus symmetrical, with ventral vestiture consisting of two parallel rows of spatulate setae parallel with tarsus axis.

Male genitalia (Figs 5-6). Aedeagus short and robust, cylindrical, with blunt end. The specimen is immature and thus, the aedeagus is weakly sclerosed, and it is strongly deformed laterally. The tip is sclerosed, obliquely cut, with characteristic waved margin.

Variability. Body length 8.50-8.85 (aver. 8.70) mm. Pronotum (maximum length / maximum width = 1.05-1.11, aver. 1.07). Elytra 1.45-1.57 times longer than together wide (aver. 1.50).

Differential diagnosis. *Brachinus stappersi* Liebke, 1934 is very similar to *Brachinus promontorii* Péringuey, 1888 from South Africa and Madagascar. Liebke (1934) mentioned

that the *Brachinus stappersi* is smaller, narrower, slender, with pale rim of elytra. The illustration of the aedeagus *Brachinus promontorii*, published by Jeannel (1949), is obviously different.

Distribution. Known only based on four type specimens from locality: Democratic Republic of Congo - Ufer des Ruzizi-Sees (Liebke, 1934) and (Burgeon, 1937).

Biology. Specimens caught in July (24.vii.1912) (Liebke, 1934). No other data about the biology of this species are known.

Discussion. Liebke (1934) mentioned four type specimens. Three of them are in Royal Museum for Central Africa, Tervuren (including holotype). The fourth one was reported from „coll. Liebke" and it was likely not saved. Given the immaturity of the only male specimen saved, it would be desirable to study aedeagi of possible further specimens from the Democratic Republic of Congo. Even in spite of the immaturity, I believe that aedeagus of the *Brachinus promontorii* Péringuey, 1888 is considerably different.

***Styphlomerus collarti* (Basilewsky, 1948) comb. n.**

(Figs 7-10, 15)

Brachinus Collarti Basilewsky, 1948: 47.
Brachinus collarti: Lorenz, 1998: 19.

Type locality: „Kibali-Ituri: Blukwa (Nizi)" in Congo Belge (Basilewsky, 1948) [= DEMOCRATIC REPUBLIC OF CONGO].

Type material. Paratype 1 (♂) labelled: „PARATYPUS [p, red label] // Congo-belge:Nizi [p] / Blukwa- [p] 2-II-1929 [hw, p] / A. Collart [p, white label] // COLL. MUS. CONGO [p] / Col. P. Basilewsky [p, white label] // Brachinus [hw] / Collarti n.sp. [hw] / P. BASILEWSKY det. [p] / Paratype [hw, white label] // Styphlomerus [p] / collarti [p] / (Basilewsky, 1948) [p] / (Paratype 1) [p] / det. Jan Hrdlička, 2006 [p, white label]". Paratype 1 is mounted with glue and damaged (lacking protarsus on right side, middle tibia and mesotarsus on right side). Left antenna is glued on another card together with aedeagus. Paratype 2 (♂) labelled: „PARATYPUS [p, red label] // Congo-belge:Nizi [p] / Blukwa- [p] 2-II-1929 [hw, p] / A. Collart [p, white label] // COLL. MUS. CONGO [p] / Col. P. Basilewsky [p, white label] // Brachinus [hw] / Collarti n.sp. [hw] / P. BASILEWSKY det. [p] / Paratype [hw, white label] // Styphlomerus [p] / collarti [p] / (Basilewsky, 1948) [p] / (Paratype 2) [p] / det. Jan Hrdlička, 2006 [p, white label]". Paratype 2 is mounted with glue and damaged (lacking all labial palpi on both sides, protarsus on left side, front leg on right side, metatarsus on right side). Paratype 3 (♀) labelled: „PARATYPUS [p, red label] // Congo-belge:Nizi [p] / Blukwa- [p] 2-II-1929 [hw, p] / A. Collart [p, white label] // COLL. MUS. CONGO [p] / Col. P. Basilewsky [p, white label] // Brachinus [hw] / Collarti n.sp. [hw] / P. BASILEWSKY det. [p] / Paratype [hw, white label] // Styphlomerus [p] / collarti [p] / (Basilewsky, 1948) [p] / (Paratype 3) [p] / det. Jan Hrdlička, 2006 [p, white label]". Paratype 3 is mounted with glue and damaged (lacking front tibia and protarsus on left side). Paratype 4 (♀) labelled: „PARATYPUS [p, red label] // Congo belge:Blukwa [p] / 31-i-1929 [p] / A. Collart [p, white label] // COLL. MUS. CONGO [p] / Col. P. Basilewsky [p, white label] // Brachinus [hw] / Collarti n.sp. [hw] / P.

Figs 11-15. Fig. 11: *Brachinus sexnotatus gerardi* Burgeon, 1937, Fig. 12: *Brachinus connectus seydeli* Burgeon, 1937, Fig. 13: *Brachinus connectus ovalis* Liebke, 1934, Fig. 14: *Brachinus stappersi* Liebke, 1934, Fig. 15: *Styphlomerus collarti* (Basilewsky, 1948). Figs 11,12,14-holotype; 13,15- paratype.

BASILEWSKY det. [p] / Paratype [hw, white label] // Brachinus [hw] / Collarti m. [hw] / P. Basilewsky det. [p, green label] // Styphlomerus [p] / collarti [p] / (Basilewsky, 1948) [p] / (Paratype 4) [p] / det. Jan Hrdlička, 2006 [p, white label]". Paratype 4 is mounted with glue and damaged (lacking protarsus on left side, front tibia and protarsus on right side).

Other material examined: „Malawi / Dedza / 15.i.1998 / Kondler lgt. // , 1 ♀, coll. Jan Hrdlička".

Redescription of the male paratype 1. Body length 6.25 mm; 2.23 times longer its width. Body rather convex (body length (6.25 mm) / maximum dorso-ventral height of body (1.75 mm) = 3.57). Body and appendages yellow. Antennae dark, abdomen and elytra black. Elytra with yellow pattern.

Head yellow, eyes large (silver-grey). Head with eyes narrower than pronotum (width of head (1.35 mm) / width of pronotum (1.48 mm) = 0.91). Margin and apex of mandibles

and lateral margins of head (behind eyes) dark brown. Head with microsculpture dorsally (frons without microsculpture). Entire surface of head coarsely punctate and densely pubescent, with frontal furrows. Head behind eyes scarcely constricted, densely punctate and pubescent. Mandibles in side-view with unisetose scrobe. Mentum with tooth at anterior edge. Labrum with microsculpture, only slightly transverse, with the anterior margin slightly concave, anterior corner strongly concave and bearing 6 setae. Clypeus with microsculpture, trapezoidal, with the anterior margin slightly concave, bearing 2 long setae and a number of shorter setae.

Antennae shorter, more robust. Antennomere 1 yellow with sporadic long setae, 2-4 black and pubescent, with shorter setae, 5-11dark brown-yellow (dark-ochre) and densely pubescent, with short setae and sporadic longer setae. Ratio of relative lengths of antennomeres from base to apex as follows: 0.98: 0.39: 1.00: 0.76: 0.76: 0.76: 0.83: 0.78: 0.83: 0.83: 1.15. Ratio (length / most width) of antennomeres from base to apex as follows: 1.88: 1.00: 2.20: 1.67: 1.79: 1.92: 2.08: 2.00: 2.25: 2.25: 3.46. Elongation index of the antennae (total body length (6.25 mm) / antennal length (4.17 mm) = 1.50).

Maxillary palpus and labial palpus yellow, more robust, relatively short, last article truncate apically.

Ratio (length / most width) of last maxillar palpomere is 2.67.

Pronotum yellow. Sides of pronotum with S-shaped margins with narrow dark brown line, maximum width at the end of first quarter. Pronotum transverse (maximum length (1.20 mm) / maximum width (1.43 mm) = 0.84). Width of anterior margin 1.09 mm. Maximum width (at the end of first quarter of pronotum) 1.43 mm. Minimum width (at the posterior margin of pronotum) 0.98 mm. Disc flat, with coarse punctuation, with dense yellow pubescence.

Without microsculpture. Anterior and posterior margin of pronotum without dense row of setae. Posterior angles of pronotum obtuse, little rounded at apex. Median line of pronotum uniformly deep, ending at the beginning of last sixth of pronotum.

Ventral side of body. Mainly yellow. Margin parts of ventrite 1 brown. Ventrites 2-8 black. Ventral side of body prevalently with sparsely minute yellow pubescence. Ventrites with dense yellow pubescence and with dense punctuation.

Scutellum yellow. Prothorax smooth, without setae, mesothorax, metathorax and ventrites with punctuation and yellow setae.

Elytra black with yellow spots. Elytra oblong, elytral disc convex, sides of elytra moderately rounded, humeri rounded. Elytra approximately 1.49 times longer than together wide. Maximum width (approximately at the beginning of last third) 2.80 mm. Maximum length 4.18 mm. Each elytron with 7 rounded costae. Elytral disc with microsculpture (polygonal meshes). Elytra with uniform dense punctuation and yellow pubescence (between costae). Epipleura black. In anterior third there is an oblong oval yellow humeral spot with irregular margin extending from costa 4 to lateral margin of elytron, but not touching the margin. In hind quarter of elytra there is a yellow spot with irregular margin extending from costa 3 to lateral margin of elytron, but not touching the margin. Posterior margin of elytra with membranous fringe with downward directed setae.

Legs shorter, yellow. Femora sparsely pubescent, tibia and tarsi densely pubescent. Tarsomeres of protarsus asymmetrical, with ventral vestiture consisting of two parallel

rows of spatulate setae diagonally arranged with respect to the tarsus axis. Tarsomeres of mesotarsus and metatarsus symmetrical.

Male genitalia (Figs 7-10). Aedeagus minute, angularly bent in the middle. Approximately first half of aedeagus has oval cross section, apical half flattish dorso-ventrally. Flattish part is at an angle of 20° to the plane perpendicular to the aedeagus axis. The tip rounded. The shape is typical for the genus *Styphlomerus*.

Variability. Body length 5.6 - 7.25 (aver. 6.21) mm. Pronotum (maximum length / maximum width = 0.81-0.84, aver. 0.83). Elytra 1.36-1.49 times longer than together wide (aver. 1.42).

Differential diagnosis. Basilewsky (1948) mentioned that the species belongs to the „*apicalis* group", but that it is differentiated by a characteristic structure of elytra with distinct costae and by the body length. He also considered it as very similar to the *Styphlomerus ovalipennis* Liebke, 1934 and *Styphlomerus ludicrus* (Erichson, 1843). However, due to its general characterization, he included it quite erroneously into the genus *Brachinus*.

Distribution. Known based on 12 specimens from locality: Democratic Republic of Congo Kibali-Ituri: Blukwa (Nizi) (Basilewsky, 1948), new to Malawi.

Biology. Based on the data published, the specimens were caught from January (31.i.1929) to March (29.iii.1929) (Basilewsky, 1948). No other data about the biology of this species are known.

Discussion. Basilewsky (1948) did not specify the sites of deposition of the holotype and paratypes. I have not yet been able to locate the holotype. Paratypes from the Royal Museum for Central Africa, Tervuren belong to the paratype series by Basilewsky. They agree with the original description and thus, based on them, I am reclassifying the species from the genus *Brachinus* to the genus *Styphlomerus*.

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