

New species and new faunistic records of Heteroceridae from the Afrotropical Region (Coleoptera: Heteroceridae)

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Abstract

A new species of Heteroceridae, *Heterocerus haladai* sp.n. (Coleoptera: Heteroceridae), is described from Tanzania. Nine species, *Augyles pallens* (CHARPENTIER, 1965), *A. parvus* (GROUVELLE, 1909), *Heterocerus atroincertus* CHARPENTIER, 1965, *H. elongatus* GROUVELLE, 1896, *H. incertus* GROUVELLE, 1896, *H. nodieri* GROUVELLE, 1919, *H. ornatus* GROUVELLE, 1906, *H. planoincertus* CHARPENTIER, 1979, and *H. vulpes* GROUVELLE, 1906, are reported from various Afrotropical countries for the first time.

Key words: Coleoptera, Heteroceridae, *Heterocerus*, taxonomy, new species, new records, Afrotropical Region, Tanzania.

Introduction

The knowledge of the Heteroceridae of the Afrotropical Region is relatively good; currently, 49 species are known, belonging to two genera (39 species of *Heterocerus* FABRICIUS, 1792 and 10 species of *Augyles* SCHIÖDTE, 1866). Their occurrence in individual countries has been recorded in many articles. A further 13 species are distributed in the African part of the Palearctic Region, and some of these can be assumed to occur also in the Afrotropical Region.

During the study of a series of unidentified Afrotropical Heteroceridae deposited in the BZL, FGIC, and NHML, I recognized one species as new to science, which is described below and compared with similar species.

New distributional records of nine species (*A. pallens* (CHARPENTIER, 1965), *A. parvus* (GROUVELLE, 1909), *Heterocerus atroincertus* CHARPENTIER, 1965, *H. elongatus* GROUVELLE, 1896, *H. incertus* GROUVELLE, 1896, *H. nodieri* GROUVELLE, 1919, *H. ornatus* GROUVELLE, 1906, *H. planoincertus* CHARPENTIER, 1979 and *H. vulpes* GROUVELLE, 1906) are provided for various Afrotropical countries.

Acronyms:

BZL	Oberösterreichisches Landesmuseum, Biologiezentrum, Linz-Dornach, Austria
CSU	Coll. S. Skalický, Ústí nad Orlicí, Czechia
FGIC	Coll. F. Génier Gatineau (Québec), Canada
MZLU	Biological Museum, Lund University, Sweden
NHML	Natural History Museum, London, UK
NMW	Naturhistorisches Museum Wien, Austria

Separate labels are indicated by double slashes, locality data are cited verbatim in “quotation marks”.

Taxonomy

Heterocerus haladai sp.n.

TYPE MATERIAL: **Holotype** ♂ (BZL): “TANZ[ANIA]-Pwani pr. 15Km E Utete S08°03' E38°53' 75m 16.1.2007 J. Halada lgt.” // “HOLOTYPE *Heterocerus haladai* Skal. det. Skalický 2025” [red label]. **Allotype** ♀ (BZL): same data as holotype, but with red “Allotype” label. **Paratypes** (6 exs.): (1 ♂, 3 ♀ ♀ BZL, 2 ♂ ♂ CSU): same data as holotype, but with red “Paratype” label.

DESCRIPTION: Holotype: Total length 2.85 mm (to apex of labrum); elytra 1.75 mm long, 1.10 mm wide across shoulders. Ground colour pale brown, elytra and pronotum with darker diffuse pattern (Fig. 1). Head black to brown, clypeus darker with reddish-brown tips anteriorly about 1.80 times as wide as long, rounded laterally, anterior edge with apex in the middle; finely granulate; setae short, adjacent, with intermixed thin, long erect setae. Mandibles (Fig. 2) relatively strong, slightly curved, with acute apex. Inner edge with two teeth; without tooth on the latero ventral ridge, lateral surface with rounded dorsal subapical tooth. Prostheca (Fig. 2) with shallow prosthecal notch, with sparse series relatively strong teeth. Head finely granular, setae dense and short except for long setae above eyes. Visible part of labrum (Fig. 3) about 1.8 times wider than long, rounded laterally, anterior angles softly serrate in median portion surface finely granulate; setae fine, recumbent, intermixed with longer erect setae. Clypeus without pair of anterior horns, anterior margin deep emarginate; coarsely granular, with short, adjacent setae. Antennae 11-segmented, with 7-segmented club. Scape triangular, pedicel oval, funicles very short. First two antennomeres with sparse long erect setae, club setae very short, dense and adjacent. Pronotum oval, wider than long (ratio 1.70: 1), slightly narrower than base of elytra; pronotal base completely rimmed. Surface of pronotum sparse granular, granules approximately as large as 1.2 times eye facets; setae black, short, semi-erect, adjacent, longer laterally. Scutellum triangular, about 1.5 times as long as wide, anterior corners rounded, posterior angle pointed, base of scutellum beneath elytral line. Elytra without longitudinal striae, scutellar depressions absent, humeral depressions extending obliquely towards suture at on third of elytron. Surface of elytra coarsely granular, granules approximately as large as 2.5 times eye facets; setae black to dark brown, sparse, short, erected, without longer setae. Ventral surface relatively densely and finely granular, granules approximately as large as 0.5 times eye facets; setae adjacent, light, short. Epipleural ridge absent. Metaventricle with pronounced post-mesocoxal ridge. Mesoventrite with five fine bumps in front of each mesocoxa. Prosternal spine short, rounded. Post-metacoxal line incomplete. Stridulatory arch marked, with well-developed striae. Protibia with 11 stout spines, meso- and metatibiae with 10 weak spines. Spiculum gastrale (Fig. 4) 0.75 mm long, V-shaped, arms connected by membrane apically. Aedeagus (Figs. 5–7) 0.60 mm long, elongate, well sclerotized, parameres long, rounded, fused with phallobase, supporting sheath long, border posteriorly. Penis without internal sac without processus accessorius.

Allotype: Total length 3.20 mm (incl. labrum); elytra 2.00 mm long, 1.25 mm wide across shoulders. Elytra without darker diffuse pattern with finely marked shallow longitudinal furrows. Externally similar to male.

VARIABILITY: Size with slight variation (total length 2.60–3.20 mm in both sexes). No substantial morphological variation observed in the type series.

DIFFERENTIAL DIAGNOSIS: The shape of the aedeagus of *H. haladai* indicates that it belongs to the *H. alluaudi* group (sensu CHARPENTIER 1965). This group contains 11 previously described taxa on the African continent. All known species of this group have 11-segmented antennae and a post-mesocoxal ridge on the metaventricle, except *H. mus* CHARPENTIER, 1965, which lacks a post-mesocoxal ridge and has 10-segmented antennae. All species also have a darker colour with a more extensive pattern of spots on the elytra. Only two species, *H. nodieri*

and *H. ornatus*, occur also in Tanzania. *Heterocerus haladai* is partially similar to the widespread *H. nodieri*, from which it differs mainly in the ground colour (pronotum and elytra reddish-brown to dark brown in *H. nodieri*), elytral pattern (see CHARPENTIER 1965: fig. 58), granulation of pronotum and elytra (largest punctures slightly larger than eye facets in *H. nodieri*), and mainly in the morphology of the male genitalia (see CHARPENTIER 1965: fig. 95).

NOTE: Four other species of Heteroceridae were collected together with *H. haladai* at the same location: *Augyles parvus*, *Heterocerus elongatus*, *H. nodieri* and *H. ornatus*.

ETYMOLOGY: Dedicated to Mr. Jiří Halada, (České Budějovice, Czechia), Hymenoptera specialist, and collector of the type series.

New faunistic records of Heteroceridae from the Afrotropical Region

Literature data on the distribution of the species are based on the following articles: CHARPENTIER (1962, 1968, 1965, 1979), GROUVELLE (1919), MASCAGNI (2012), MASCAGNI & MONTE (2000, 2002, 2003a–b, 2005, 2009), SAZHNEV & PROKIN (2019), SKALICKÝ (1996, 2019).

Augyles pallens (CHARPENTIER, 1965)

MATERIAL EXAMINED:

CAMEROON: 11 exs.: “Cameroon N-W prov. Obang (near Bafut), 3-7.xii.2009, forest, 650m 6°11'N, 10°05'E J. Horák lgt. BMNH{E}2016-44” // “NHMUK” [and serial number + QR code] (NHML); 17 exs.: “Cameroon N-W prov. Obang (near Bafut), 3-8.xii.2009, Mezam river, 625m 6°10'N, 10°04'E J. Horák lgt. BMNH{E}2016-44” // “NHMUK” [and serial number + QR code] (NHML); 12 exs.: “Cameroon N-W prov. Wum Vill. env. UV light 6°23'10"N, 10°04'59"E 10.xii.2010 local collector BMNH{E} 2016-44” // “NHMUK” [and serial number + QR code] (10 exs. NHML, 2 exs. CSU).

ETHIOPIA: 23 exs.: “Ethiopia - GLS 10km NW Sheh Husein N07°46', E040°37' 1.6.2015 900m. A. Kudrna Jr. lgt.” (CSU).

DISTRIBUTION: Kenya, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe. First records for Cameroon and Ethiopia.

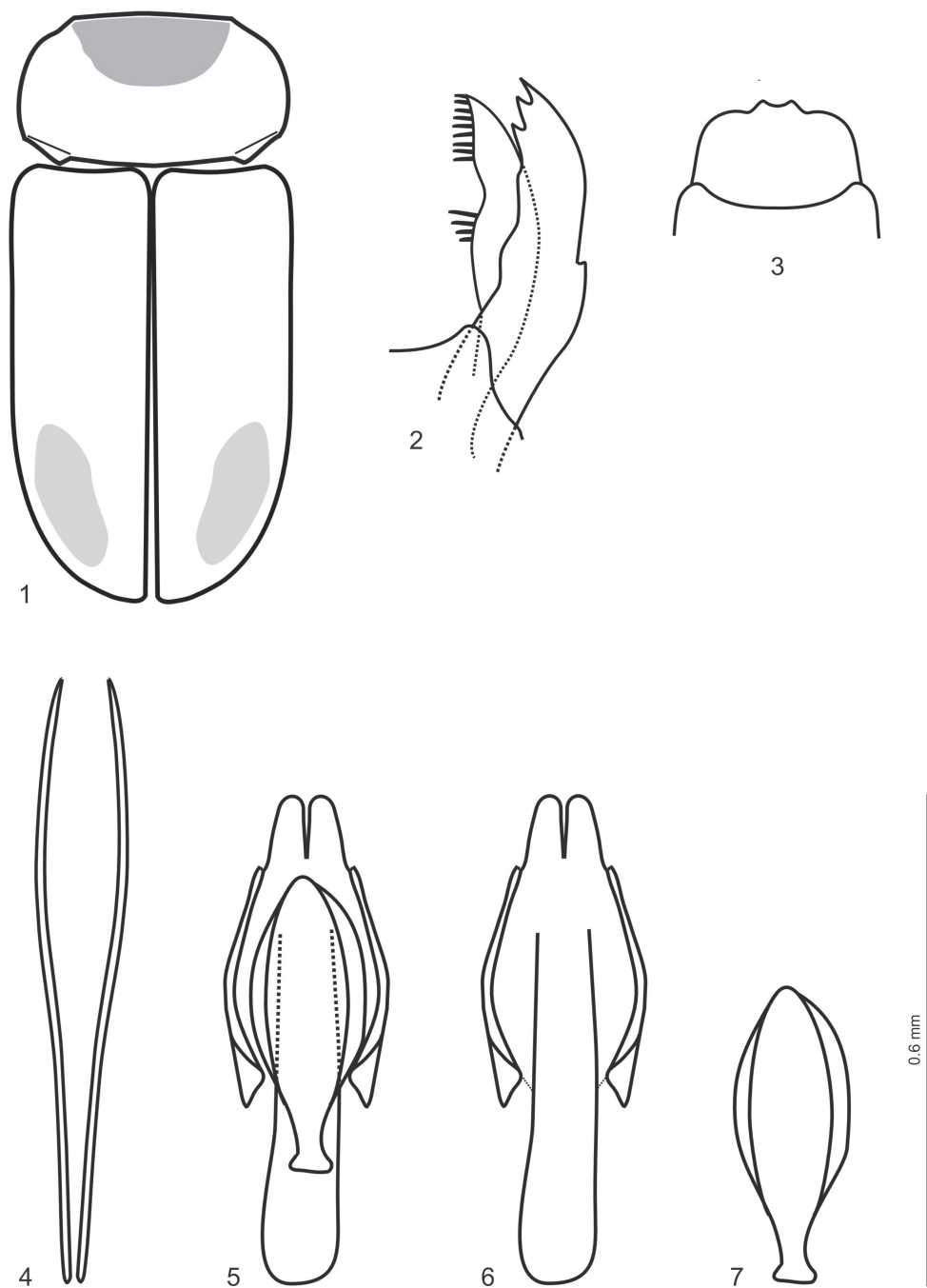
Augyles parvus (GROUVELLE, 1909)

MATERIAL EXAMINED:

CAMEROON: 73 exs.: “Cameroon N-W prov. Obang (near Bafut), 3-7.xii.2009, forest, 650 m 6°11'N, 10°05'E J. Horák lgt. BMNH(E)2016-44” (NHML); 129 exs.: “Cameroon N-W prov. Obang (near Bafut), 3-8.xii.2009, Mezam River, 625m 6°10'N, 10°04'E J. Horák lgt BMNH(E)2016-44” (NHML); 90 spec: “Cameroon N-W prov. Wumvill. Env., UV light 6°23'10"N, 10°04'59"E 10.xii.2010, local collector MNHN(E)2016-44” (89 exs. NHML, 1 ex. CSU).

TOGO: 117 exs.: “Togo 415m Fazao-Malfakassa NP Point de vue campsite Sudanian savannah 8°48'50"N, 0°49'3.2"E 16-23.viii.2018. // Actinic light trap Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B., leg. ANHRT: 2018.31, BMNH(E) 2018-148” // “NHMUK” [and serial number + QR code] (115 exs. NHML, 2 exs. CSU); 27 exs.: “Togo 505m Fazao-Malfakassa NP Mare aux crocodiles campsite Sudanian savannah/dry forest 8°44'58.8"N, 0°48'51.8"E // 26.viii-7.ix.2018 MV light trap Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B., leg. ANHRT: 2018.31, BMNH(E) 2018-148” // “NHMUK” [and serial number + QR code] (25 exs. NHML, 2 exs. CSU); 8 exs.: “Togo 505m Fazao-Malfakassa NP Mare aux crocodiles Campsite Gallery forest 8°44'58.8"N, 0°48'51.8"E 27-31.viii.2018. // LepiLed light trap Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B., leg. ANHRT: 2018.31, BMNH(E) 2018-148” // “NHMUK” [and serial number + QR code] (NHML).

DISTRIBUTION: Central African Republic, Chad, Congo, Côte d'Ivoire, DR Congo, Guinea, Mali, Nigeria, Senegal, Tanzania. First records for Cameroon and Togo.



Figs. 1–7: *Heterocerus haladai*, holotype: 1) pronotum and elytra, dorsal view; 2) right mandible and prosthema, dorsal view; 3) visible part of labrum, dorsal view; 4) spiculum gastrale, dorsal view; 5) aedeagus, dorsal view; 6) parameres, phallobase and supporting sheath, dorsal view, 7) penis, dorsal view. Figs. 1–3 not to scale.

Heterocerus atroincertus CHARPENTIER, 1965

MATERIAL EXAMINED:

MADAGASCAR: 1 ex.: "SC Madagascar Fianarantsoa p., Isalo N.P., Ananalava forest margin, Tanambao vill. Env., 27.-29.i.2014, 22°35.028'S; 45°7.672'E, 724m, M. Trýzna leg., BMNH(E)2010-29" (NHML); 16 exs. "Madagascar 95 MAHAJANGA distr. Ampatika env., Nov. 17.2., J. Stolarczyk leg." (CSU).

SENEGAL: 1 ex. "Senegal, 15.7.2004 Niokolo Koba NP 13°01.1'N, 13°18.5'W leg. Marek Halada" (BZL); 2 exs.: "Senegal – E 35 km W Kedougou Nbebou, 23.6.2004 leg. Marek Halada" (BZL).

DISTRIBUTION: Botswana, Congo, DR Congo, Ethiopia, Kenya, Malawi, Mali, Mozambique, South Africa, Tanzania, Zambia and Zimbabwe. First records for Madagascar and Senegal.

Heterocerus elongatus GROUVELLE, 1896

MATERIAL EXAMINED:

DJIBOUTI: 22 exs.: "Djibouti, Tadjoura distr. Forêt d'Andaba, 3km SW of Doubá, 21.-22.x.2023, 290m 12°17'39.135"N, 42°23'49.921"E, leg. P. Kabátek" (CSU).

SIERRA LEONE: 6 exs.: "SIERRA LEONE 420m Mansonia village at the foothills of Loma Mts. N09°07'47";W11°05'06"" // "6.iv.16 Edwards Trap leg. Takano, Miles & Goff Trip Ref: SL-001 (ANHRT 18) BMNH(E) 2016-196" // "NHMUK" [and serial number + QR code] (5 exs. NHML, 1 ex. CSU); 1 ex.: "SIERRA LEONE 420m Loma Mountains farmland/forest mosaic N09°07'47";W11°05'24"" // "11 - 15.vi.16 Light Trap leg. Takano, Miles & Goff Trip Ref: SL-001 (ANHRT 18) BMNH(E) 2016-196" // "NHMUK" [and serial number + QR code] (NHML).

DISTRIBUTION: Benin, Botswana, Burkina Faso, Cameroon, Central African Republic, Congo, Côte d'Ivoire, DR Congo, Ethiopia, Gambia, Ghana, Kenya, Liberia, Madagascar, Malawi, Mauritania, Mali, Mozambique, Namibia, Nigeria, Senegal, Somalia, South Africa, Sudan, Tanzania, Togo, Zambia, Zimbabwe. First records for Djibouti and Sierra Leone.

Heterocerus incertus GROUVELLE, 1896

MATERIAL EXAMINED:

MOZAMBIQUE: 1 ex.: "MOZ[AMBIQUE] CABO DELGADO Ravia (site 1), N.P. Quirimbas 280m., 12°39'41"S 39°25'22"E 2.I.2013, eastern Miombo woodlands, light trap, F& J. Génier & M. Denja, 2013-26" (FGIC); 1 ex.: "MOZ[AMBIQUE] CABO DELGADO Namaluco (site 1), N.P. Quirimbas 130m., 12°19'18"S 40°16'48"E 28.XI.2012, degraded eastern Miombo woodlands, light trap, F& J. Génier & M. Denja, 2012-12" (FGIC).

TOGO: 4 exs.: "Togo 415m Fazao-Malfakassa NP Point de vue campsite Sudanian savannah 8°48'50"N, 0°49'3.2"E 16-23.viii.2018." // "Actinic light trap Aristophanous, M., Geiser, M., Moretto, P., Sambena, B. Leg. ANHRT: 2018.31, BMNH(E) 2018-148" // "NHMUK" [and serial number + QR code] (NHML); 1 ex.: "Togo 505m Fazao-Malfakassa NP Mare aux crocodiles Campsite Gallery forest 8°44'58.8"N, 0°48'51.8"E 27-31.viii.2018." // "LepiLed light trap Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B., leg. ANHRT: 2018.31, BMNH(E) 2018-148" // "NHMUK" [and serial number + QR code] (NHML); 3 exs.: "Togo 505m Fazao-Malfakassa NP Mare aux crocodiles campsite Sudanian savannah/dry forest 8°44'58.8"N, 0°48'51.8"E" // "26.viii-7.ix.2018 MV light trap Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B., leg. ANHRT: 2018.31, BMNH(E) 2018-148" // "NHMUK" [and serial number + QR code] (NHML).

DISTRIBUTION: Angola, Congo, Côte d'Ivoire, DR Congo, Ethiopia, Ghana, Kenya, Madagascar, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia, Zimbabwe. First records for Mozambique and Togo.

Heterocerus nodieri GROUVELLE, 1919

MATERIAL EXAMINED:

CENTRAL AFRICAN REPUBLIC: 6 exs.: "Central African Rep. Bamingui-Bangoran Pr. 75 km SSW NDELE 08.-12.07.2011 450m. A. Kudrna Jr. Lgt." (CSU); 1 ex.: "Central African Rep. Nana-Mambere Pr. 20-60 km W BOUAR 25.-27.03.2010 650 m. A. Kudrna Jr. Lgt." (CSU).

MALAWI: 1 ex.: "Malawi S, Mulanje Mts. env., 22.-26.xii.2001 J. Bezděk lgt." (NHMP); 1 ex.: "AFRICA – MALAWI 20 km SE Zomba Jali, 27.XII.2001 Jiří Halada leg." (BZL); 1 ex.: "AFRICA – MALAWI 160 km SE Lilongwe Balaka, 20.XII.2001 J. Halada leg." (BZL); 2 exs.: "MALAWI centr. Nkhotakota env., 2.-3.i.2002 J. Bezděk lgt." (FGIC, CSU).

TOGO: 1 ex.: "Togo 505m Fazao-Malfakassa NP Mare aux crocodiles campsite Sudanian savannah/dry forest 8°44'58.8"N, 0°48'51.8"E" // "26.viii-7.ix.2018 MV light trap Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B., leg. ANHRT: 2018.31, BMNH(E) 2018-148" // "NHMUK" [and serial number + QR code] (NHML); 6 exs.: "Togo 415m Fazao-Malfakassa NP Point de vue campsite Sudanian savannah 8°48'50"N, 0°49'3.2"E 16-23.viii.2018." // "Actinic light trap Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B., leg. ANHRT: 2018.31, BMNH(E) 2018-148" // "NHMUK" [and serial number + QR code] (5 exs. NHML, 1 ex. CSU).

DISTRIBUTION: Burkina Faso, Congo, Côte d'Ivoire, DR Congo, Ghana, Guinea, Kenya, Nigeria, Senegal, South Africa, Tanzania, Zambia, Zimbabwe. First record for the Central African Republic, Malawi, and Togo.

NOTE: *Heterocerus nodieri* was originally described from Senegal, Badoumbe based on an unspecified number of specimens (GROUVELLE 1919). Currently, the locality of Badoumbé [village] is located in Mali, Kayes Region.

Heterocerus ornatus GROUVELLE, 1906

MATERIAL EXAMINED:

ETHIOPIA: 25 exs.: "Ethiopia Central Bulbula 14.V.2016 S. Prepsl leg." (CSU); 1 ex.: "Ethiopia-S 50km NE Mega 1420m N04°13' E38°28' 24.4.2007 J. Halada leg." (BZL).

SENEGAL: 3 exs.: "W Africa, Senegal Richard Toll 13.vi.1983 J. Lancaster" // "light trap 20:00 21:00 h" // "BMNH (E) 2017-133" // "NHMUK" [and serial number + QR code] (NHML).

TOGO: 3 exs.: "Togo 505m Fazao-Malfakassa NP Mare aux crocodiles campsite Sudanian savannah/dry forest 8°44'58.8"N, 0°48'51.8"E" // "26.viii-7.ix.2018 MV light trap Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B., leg. ANHRT: 2018.31, BMNH(E) 2018-148" // "NHMUK" [and serial number + QR code] (NHML).

DISTRIBUTION: Botswana, Guinea, Kenya, Madagascar, Mozambique, Namibia, Somalia, South Africa, Tanzania, Zambia and Zimbabwe. First records for Ethiopia, Senegal and Togo.

Heterocerus planoincertus CHARPENTIER, 1979

MATERIAL EXAMINED:

KENYA: 50 exs.: "Kenya, Eastern Katutu-Kithioko 27.11.1999 Lgt. M. Snížek" (43 exs. BZL, 6 exs. CSU, 1 ex. NHML).

DISTRIBUTION: Nigeria. First record for Kenya.

NOTE: This species was described after a single specimen from Nigeria. The holotype (MZLU) is labelled as follows: "Nigeria: Badeggi RRS NW State 19 III 1972 J. T. Medler Coll." // "Holotypus *Heterocerus planoincertus* ♂ Charpentier 1978" [red label] // "MZLU 00247868" [yellow label] // "Zool.Mus.Lund Sweden Heteroceridae Type No. 1843:1".

I do not know of any other representatives of this species besides those listed above. The material from Kenya has external characters identical to the holotype, including shape of the male genitalia. There is some variability in the presence of faint longitudinal furrows on the elytra and coarser punctuation of the elytra in some Kenyan specimens.

Heterocerus vulpes GROUVELLE, 1906

MATERIAL EXAMINED:

ANGOLA: 23 exs.: “Angola Ninda, Hundo Lake, 1104m, 14.97396S, 21.62966E; 4-5.xii.2019” // “UV LED Matsumoto, K. leg. Okavango Wilderness Project, BMNH (E) 2020-30” // “NHMUK” [and serial number + QR code] (NHML); 175 exs.: “Angola Ninda, Hundo Lake, 1104m, 14.97396S, 21.62966E; 3-6.xii.2019” // “UV LED Matsumoto, K. leg. Okavango Wilderness Project, BMNH (E) 2020-30” // “NHMUK” [and serial number + QR code] (NHML); 2 exs.: “Angola Lutembo, Luvu River, 1080m, 13.71185S, 21.83503E; 6-8.xii.2019” // “UV LED Matsumoto, K. leg. Okavango Wilderness Project, BMNH (E) 2020-30” // “NHMUK” [and serial number + QR code] (NHML).

DISTRIBUTION: Botswana, Madagascar, South Africa, Zambia and Zimbabwe. First record for Angola.

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