

Two new genera of Keroplatidae (Diptera), with an updated key to the World genera of Keroplatini

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Abstract. Two new genera of Keroplatidae (Diptera), *Afrokeroplatus* gen. nov. and *Asiokeroplatus* gen. nov., are proposed for two new species, *Afrokeroplatus ashleyi* sp. nov. from South Africa, and *Asiokeroplatus tiger* sp. nov. from northern Thailand. An updated key to the World genera of the tribe Keroplatini is presented.

Key words. Diptera, Bibionomorpha, Sciaroidea, Keroplatinae, fungus gnats, new genus, new species, taxonomy, key, Afrotropical Region, Oriental Region

Introduction

Fungus gnats of the family Keroplatidae (Diptera) comprise about 1000 described species belonging to 91 extant and additionally 5 fossil genera (EVENHUIS 2006; PAPP 2008; ŠEVČÍK 2009, 2012a,b; ŠEVČÍK & PAPP 2009). Four subfamilies of Keroplatidae are currently recognized – Arachnocampinae, Macrocerinae, Keroplatinae and Sciarokeroplatinae (see MATILE 1990, PAPP & ŠEVČÍK 2005). The subfamily Keroplatinae is the most speciose and traditionally consists of two tribes – Keroplatini and Orfeliini. The tribe Keroplatini is characterized mainly by short, two-segmented palpi and laterally compressed or otherwise modified antennae. A total of 153 extant species in 21 genera have been described in this tribe up to the present (EVENHUIS 2006, PAPP et al. 2006, XU et al. 2007, AMORIM et al. 2008, ŠEVČÍK & PAPP 2009, ŠEVČÍK 2012a,b).

Studying collections of the Natural History Museum (London), National Museum of South Africa (Bloemfontein) and material collected within the TIGER project (see Acknowledgements), we found specimens of several undescribed taxa of Keroplatidae and among them also two new genera of the tribe Keroplatini. They are described as new in this contribution, together with their type species. The opportunity is also taken to present an updated key to the World genera of the tribe Keroplatini based on the original key of MATILE (1990).

Material and methods

Type specimens were collected by Malaise traps and pinned or stored in 70% ethanol. Male terminalia were cleared in a 10% solution of KOH. Abdomens of the holotype of *Afrokeroplatus ashleyi* sp. nov. and a paratype of *Asiokeroplatus tiger* sp. nov. were used for DNA extraction and subsequently stored in glycerol in a pinned microvial. The holotype of the latter species is stored in ethanol. The morphological terminology principally follows that of MATILE (1990), the terminology of wing veins is showed in Fig. 3.

The voucher specimens are deposited in the following institutions:

- BMNH Natural History Museum, London, United Kingdom (E. McAlister, V. Blagoderov);
NMPC National Museum, Prague, Czech Republic (M. Tkoč);
NMSA National Museum, Bloemfontein, South Africa (A. Kirk-Spriggs);
QSBG Queen Sirikit Botanic Garden, Chiang Mai, Thailand.

Taxonomy

Afrokeroplatus gen. nov.

Type species. *Afrokeroplatus ashleyi* sp. nov., here designated.

Diagnosis. A medium-sized keroplatid fungus gnat with unmarked wings and remarkably pectinate antennae (Figs 1, 2). Mouthparts reduced, including the labellum, palpus with two short palpomeres. Thorax without distinct subscutellar membranous area. Wing (Fig. 3) covered with microtrichia, without macrotrichia. Vein R_4 relatively long, oblique. Stem of M-fork shorter than r-m. Vein M_1 distally bent posteriorly. Both Cu_1 (= CuA of some authors) and A_1 (= CuP of some authors) strong, reaching wing margin. Tibia with setae forming distinct longitudinal rows and with several sparsely distributed short setae. Gonostylus with two strong apical teeth.

Differential diagnosis. The new genus is characterised by its pectinate antennae in combination with unmarked wings, reduced mouthparts, bare laterotergites, tibial trichia in regular rows, and by its wing venation. Within the group of genera of Keroplatini with pectinate antennae, bare laterotergites and tibial trichia in rows (see couplets 6 to 9 in the key below), it may be distinguished by the absence of the subscutellar membranous area, and by unmarked wings with the stem of M-fork shorter than r-m fusion, the long and oblique R_4 , and M_1 bent posteriorly. Interestingly, most of the wing characters correspond to those of *Macrocera* Meigen, 1803 or *Hesperodes* Coquillett, 1900 (e.g. short stem of M-fork, long and oblique R_4 , strong A_1 reaching wing margin, parallel and bent M_1 and M_2), but in *Afrokeroplatus* gen. nov. the veins M_4 and Cu_1 are not so close to each other basally and Sc is shorter, not reaching the level of r-m fusion. Also the structure of the antennae and head is different from those in Macrocerinae. Concerning the male terminalia, the gonostylus with two strong apical teeth is similar to the Afrotropical Orfeliini genera *Asynaphleba* Matile, 1974 and *Schizocyttara* Matile, 1974, as well as in many taxa of Macrocerini.

Etymology. The generic name is derived from Africa, referring to its distribution, and *Keroplatatus* Bosc, 1792, a related genus. Gender is masculine.



Figs 1–2. *Afrokeroplatus ashleyi* gen. & sp. nov. 1 – male habitus (scale bar 1 mm); 2 – male head, frontal view.

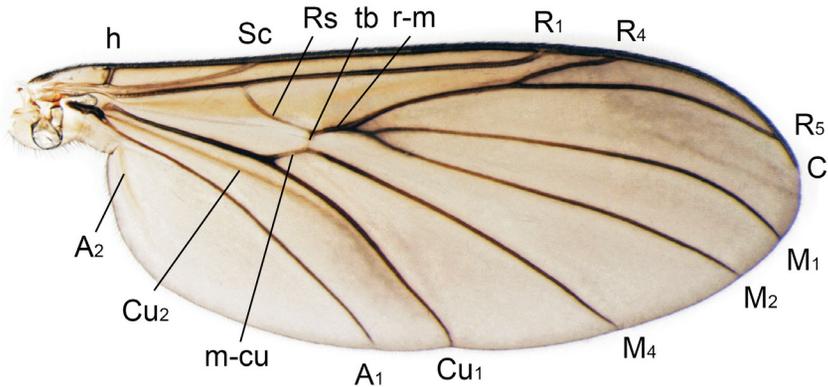
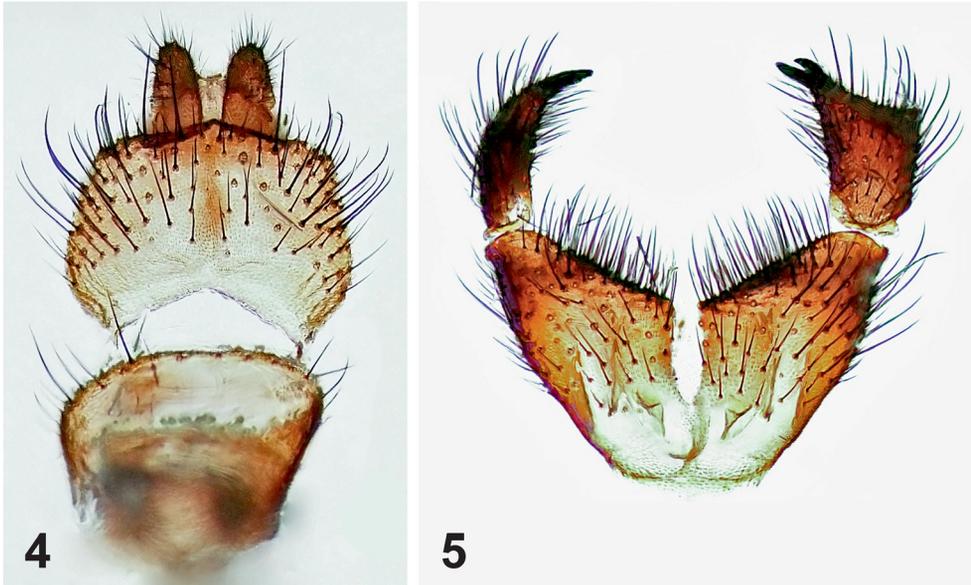


Fig. 3. *Afrokeroplatus ashleyi* gen. & sp. nov., wing.



Figs 4–5. *Afrokeroplatus ashleyi* gen. & sp. nov., male terminalia. 4 – dorsal view; 5 – ventral view.

Afrokeroplatus ashleyi sp. nov.

(Figs 1–5)

Type material. HOLOTYPE: ♂, **REPUBLIC OF SOUTH AFRICA: WESTERN CAPE:** Cederberg, Jamaka farm at: 32°20.506'S, 19°05.022'E, 16.–17.ix.2013, 485 m, Malaise trap, Mountain Fynbos, in gully, A. H. Kirk-Spriggs leg., coll. NMSA, specimen No. BMSA (D) 58009 [pinned, with the abdomen, right wing and both hind legs in a microvial with glycerol].

Description. Male. Body length 9.0 mm. Wing length 6.5 mm. Length of terminalia 0.65 mm.

Head. Light brown. Three ocelli in a triangular position, placed on a dark triangle. The distance between lateral ocelli slightly more than their diameter. Lateral ocellus separated

from the eye margin for a distance of about 1.5 times as its diameter. Median ocellus smaller (about half of the diameter of lateral ocellus), situated at anterior end of a distinct dark sagittal furrow between lateral ocelli. Distinct dark furrow, perpendicular to the sagittal one, connects also lateral ocellus with the eye margin. Compound eyes 1.3 times as high as broad in lateral view, shortly pubescent. Antennae (Fig. 2) long, about 3 times as long as the height of head, remarkably pectinate. Scape slightly shorter than wide, yellowish brown. Pedicel darker and shorter, about 1.5 as wide as long, rounded. Flagellum blackish brown, with 14 flagellomeres, each with a distinct ventral projection. Flagellomere 1 with a simple short straight projection, about as long as the height of the flagellomere. Flagellomeres 2 to 13 each with a long, S-shaped, dorsoventrally flattened projection, 3 to 4 times as long as the height of the flagellomere (Fig. 2). The last flagellomere apically bifid. Mouthparts reduced, especially labellum. Palpus with two palpomeres.

Thorax. Mostly yellowish brown. Scutum with three submedian lateral dark stripes. Scutellum dark brown, with a row of subapical setae, not longer than scutellum. Mediotergite bare, slightly protruding, brown, paler along margins, without any membranous area behind scutellum. Laterotergite bare, dark brown with the upper third paler. Anteprepronotum and propisternum setose, light brown. Anterior spiracle and membranous area around it yellowish, without setae. Anepisternum all dark brown, bare. Preepisternum 2 bare, dark brown. Anepimeron reaching between preepisternum 2 and laterotergite. Haltere light brown, about as long as the first abdominal tergite.

Wing (Fig. 3). Hyaline, unmarked, only slightly brownish, its membrane covered with microtrichia, without macrotrichia. Costa produced beyond R_5 to 1/3 of the distance of the tips of R_5 and M_1 . Sc short, ending in C well before r-m fusion. Radio-median fusion distinct, three times as long as the stem of M-fork. Basal portion of media not distinctly developed. R_4 relatively long, oblique, ending at C. Vein M_1 distally bent posteriorly. Cu_1 strong, slightly downcurved towards the tip. A_1 strong, reaching wing margin. Alula absent.

Legs. Mostly yellowish brown, covered with dark trichia. Coxae brownish yellow, mid and hind coxa slightly darkened apically. Coxa 1 covered with setae on all of anterolateral (dorsal) side, C2 with setae at apical two thirds, C3 with posterolateral setae in distal half. Femora all yellowish brown, clothed with fine trichia, not longer than maximum width of femur. All tibiae with numerous short trichia forming distinct longitudinal rows and with several sparsely distributed setae, shorter than tibial diameter. The apex of fore tibia only slightly widened, without distinct tibial organ. Fore tibia with one apical spur, slightly shorter than maximum tibial diameter. Two spurs present on both mid and hind tibia, the internal (posteroventral) almost twice as long than the external one (anteroventral). Tarsal claws small and simple. Pulvilli absent. Empodium small, filiform.

Abdomen. Mostly yellowish brown, anterior halves of tergites dark (Fig. 1).

Terminalia (Figs 4–5). Dark brown. Tergite 9 subrectangular, slightly broader than long, its posterior margin slightly pointed medially. Gonocoxites partially fused, posteriorly forming a narrow V-shaped excavation reaching to about the proximal third of the gonocoxites. Gonostylus distinctly shorter than gonocoxite, laterally flattened, apically with a pair of strong black teeth.

Female. Unknown.

Etymology. The species is named after Ashley Kirk-Spriggs, who collected the holotype, to acknowledge his achievements in the study of the Afrotropical Diptera.

Biology. Unknown.

Asiokeroplatus gen. nov.

Type species. *Asiokeroplatus tiger* sp. nov., here designated.

Diagnosis. A medium-sized keroplatid fungus gnat with unmarked wings and with posterior third of its abdomen bent ventrally. Three ocelli in a triangular position. Median ocellus distinctly smaller, rudimentary. Antennae with cylindrical flagellomeres, each flagellomere about as long as wide or shorter. Mouthparts strongly reduced, palpus with only two short palpomeres. Wing transparent, brownish, without markings. Vein R_4 absent. Stem of M-fork relatively long, about half as long as M_2 . Cu_1 distinctly curved towards the tip. A_1 weak, not reaching wing margin. Terminalia with a long aedeagal complex, reaching internally to the 7th abdominal segment.

Differential diagnosis. The new genus differs from most genera of the Keroplatidae mainly in wing characters, such as the absence of R_4 , long stem of M-fork, strongly downcurved vein Cu_1 and reduced A_1 . It is similar in most characters to the recently described Neotropical genus *Pseudochetoneura* Ševčík, 2012, especially in overall habitus, shape of antennae, reduced palpi, ventrally bent abdomen and the outline of the male terminalia, especially the long apodeme of aedeagal complex. *Asiokeroplatus* gen. nov. differs from *Pseudochetoneura* mainly in distinctly larger body size and in different wing venation (basal cell and R-M fusion are strongly reduced in *Pseudochetoneura*). The bent male abdomen and the long aedeagal complex in these two genera are reminiscent of those of *Urytalpa* Edwards, 1929 (Orfeliini) but in the other characters (mainly on the head and wing) they are sufficiently different. In the wing venation, *Asiokeroplatus* gen. nov. shows also some similarities with the Oriental *Chetoneura* Colless, 1962 and *Microkeroplatus* Ševčík & Papp, 2009, but both the latter genera have quite different male terminalia and antennae (see ŠEVČÍK 2012a, ŠEVČÍK & PAPP 2009).

Etymology. The generic name is derived from Asia, referring to its distribution, and *Keroplatus* Bosc, 1792, a related genus. Gender is masculine.

Asiokeroplatus tiger sp. nov.

(Figs 6–8)

Type material. HOLOTYPE: ♂, THAILAND: CHIANG MAI: Doi Inthanon NP, checkpoint 2, 18°31.559'N 98°29.941'E, 1700 m, Malaise trap, 9.–16.viii.2006, Y. Areluck leg., T180 (QSBG, in alcohol). PARATYPE: ♂, THAILAND: PHETCHABUN: Thung Salaeng Luang NP, pine forest; Gang Wang Nam Yen, 16°35.805'N 100°52.286'E, 726 m, Malaise trap, 6.–13.vii.2007, Pongpitak & Sathit leg., T2070 (NMPC, in a pinned microvial with glycerol, right fore leg, both mid legs and left hind leg missing).

Other material examined (not included in the type series). NEPAL: Kakani, 2070 m, secondary pine/oak forest, 9.–23.viii.1983, Malaise trap, H. G. Allen leg. (BMNH, in ethanol, all legs and terminalia missing).

Description. *Male.* Body length: holotype 4.6 mm, paratype 3.5 mm. Wing length: holotype 3.7 mm, paratype 2.6 mm. Length of terminalia: holotype 0.65 mm, paratype 0.45 mm. Length of gonocoxite: holotype 0.25 mm, paratype 0.20 mm.

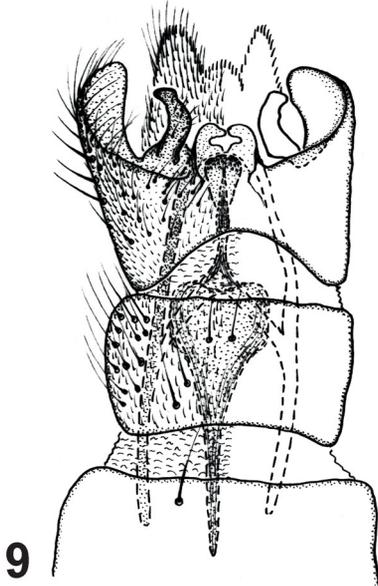
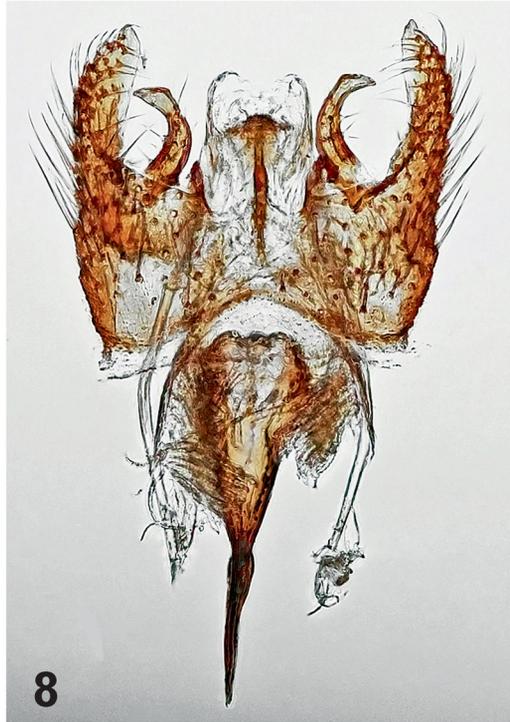
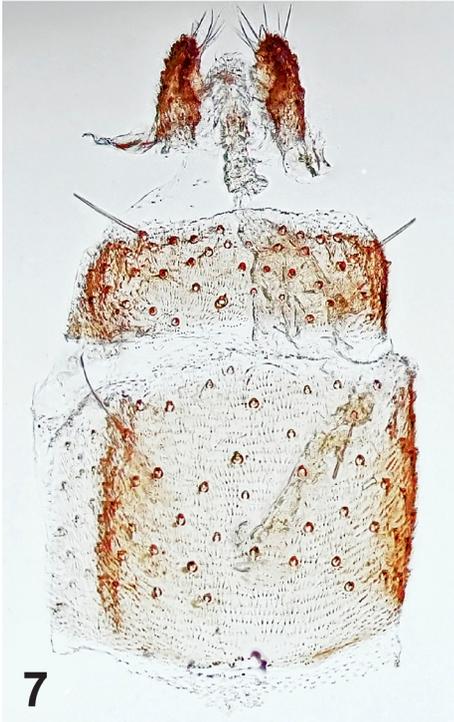
Head. Dark brown. Three ocelli in a triangular position. The distance between lateral ocelli slightly less than their diameter. Lateral ocellus separated from the eye margin for a distance of about its diameter. Median ocellus distinctly smaller (less than half of the diameter of lateral ocellus), rudimentary, situated at anterior end of a sagittal furrow between lateral



Fig. 6. *Asiokeroplatus tiger* gen. & sp. nov., holotype, male habitus (scale bar 1 mm).

ocelli. Compound eyes relatively narrow, 1.8 times as high as broad in lateral view, shortly pubescent. Antennae about 3 times as long as the width of head. Scape slightly shorter than wide. Pedicel about as long as wide, rounded. Flagellum dark brown (apical half paler), with 14 cylindrical, only slightly laterally compressed flagellomeres. Flagellomere 1 elongate, about twice as long as wide, flagellomeres 2 to 6 about as long as wide, flagellomeres 7–13 shorter than in the previous species (0.7x as long as wide), the last flagellomere slightly longer than previous and roundly pointed apically. Mouthparts strongly reduced. Palpus with two short palpomeres.

Thorax. Mostly dark brown. Scutum with two rows of dorsocentral setae, one row of acrostichals and laterally with numerous prealar and postalar setae. Scutellum dark brown, with a row of fine subapical setae and several short laterodorsal setae, without long apical



Figs 7–9. *Asiokeroplatus tiger* gen. & sp. nov., holotype. 7 – male terminalia, dorsal view; 8 – terminalia, ventral view; 9 – terminalia and abdominal segments VII and VIII, ventral view.

bristles. Mediotergite bare, slightly protruding, brown, paler along margins. Laterotergite bare, dark brown with the upper third paler. Anteprenotum and preepisternum setose, dark brown. Anterior spiracle and membranous area around it yellowish, without setae. Anepisternum all brown, bare. Preepisternum 2 bare, dark brown with its upper half pale. Anepimeron yellowish, reaching between preepisternum 2 and laterotergite. Haltere dark brown, slightly longer than the first abdominal tergite.

Wing (Fig. 6). Hyaline, uniformly brownish (but slightly darker along the anterior margin), without markings, its membrane covered with microtrichia, without macrotrichia. Costa produced beyond R_5 to 3/5 of the distance between the tips of R_5 and M_1 . Costa, R_1 and R_5 covered with macrotrichia, the other veins bare. Sc ending in C before R-M fusion. Radio-median fusion distinct, three times shorter than the relatively long stem of M-fork. Vein tb faint. Basal portion of media not developed. R_4 absent. Cu_1 strong, distinctly curved towards the tip. Cu_2 rather long, apically faint, not reaching wing margin. Vein A_1 slightly shorter than Cu_2 and less distinct. Alula absent.

Legs. Mostly yellowish brown, covered with dark trichia. Coxae brownish yellow, mid and hind coxa darkened in distal halves. C1 covered with setae on all anterolateral (dorsal) side, C2 with several setae at apical third, C3 only with several posterolateral setae in distal half. Femora all yellowish brown, clothed with fine trichia, not longer than maximum width of femur. All tibiae with numerous trichia about as long as tibial diameter, not forming distinct rows. The apex of fore tibia only slightly widened, without distinct tibial organ. Fore tibia with one apical spur, as long as maximum tibial diameter. Two spurs present on both mid and hind tibia, slightly longer than tibial diameter in T2 and almost twice as long as maximum tibial diameter in T3. Relative lengths of coxa, femur and tibia for particular legs – 1 : 1.1 : 1.2; 1 : 1.4 : 1.8; 1 : 1.6 : 2.1. Tarsal claws simple, almost straight. Pulvilli absent. Empodium small, filiform.

Abdomen. All dark brown, posterior third distinctly bent ventrally (Fig. 6).

Terminalia. Dark brown. Tergite 9 relatively short, transverse, 2.5 times as broad as long (Fig. 7). Cercus about as long as tergite 9. Gonocoxites basally fused by a membranous connection, forming a deep posteroventral excavation (Fig. 8), and posterolaterally with a long, laterally flattened projections. Gonostylus relatively short (not reaching the lateral projections of the gonocoxite), narrow, bent inwards (Fig. 8). Aedeagal complex large and distinct, with long associated apodemes laterally. Its proximal, laterally compressed, plate extending into segment VII (Fig. 9).

Female. Unknown.

Variation. Both the type specimens differ significantly in body size (see above). The specimen from Nepal is not included in the type series pending further studies based on more specimens from the region. It differs in the slightly longer flagellomeres (flagellomeres 7–13 about as long as wide, the apical flagellomere 1.2 times as long as wide) but missing terminalia do not allow its proper identification.

Etymology. The species name is the acronym of the Thailand Inventory Group for Entomological Research; noun in apposition.

Biology. Unknown.

Updated key to the World genera of Keroplatini

- 1 Head with mouth-parts reduced; palpus reduced to 1 or 2 palpomeres, terminal palpomere thickened, often porrect; antenna almost always modified, compressed, or pectinate, only rarely elongate; larva with four anal lobes. **Keroplatinae: Keroplatini** 2
 - Head with mouth-parts usually well-developed, sometimes elongated, rarely reduced; palpus normally with 4 palpomeres in addition to palpifer, sometimes reduced, but in this case terminal palpomere never thickened and porrect; antenna usually moniliform, rarely thickened or pectinate; larva with two anal lobes. **Keroplatinae: Orfeliini**
- 2 Antenna with flagellum pectinate, sometimes with very short projections in females. 3
 - Antenna with flagellum not pectinate, usually flattened and/or broadened. 10
- 3 Thorax with laterotergite setulose; head with face entirely setulose; external hind tibial spurs absent. **Hikanoptilon** Matile, 1990
 - Thorax with laterotergite bare; head with face bare or bearing only short setae in ventral half; external hind tibial spurs present. 4
- 4 Tibial macrotrichia irregularly arranged. A large triangular membranous area below the scutellum. Genus **Ctenoceridion** Matile, 1972. 5
 - Tibial macrotrichia regularly arranged, at least on the lateral side. Membranous area below scutellum is a narrow strip, Y-shaped or absent. 6
- 5 Face wide, but almost entirely membranous. Scutellum with discal setae; prosternum setose. Mid and hind tibiae with setae. Male: tergite IX transverse. **Ctenoceridion s. str.** Matile, 1972
 - Face very narrow. Scutellum without discal setae; prosternum bare. Mid and hind tibiae without setae. Male: tergite IX much longer than wide. **Ctenoceridion (Gymnoceridion)** Matile & Duret, 1987
- 6 Basal cell very short, its apex near the level of the humeral vein, anal vein strongly shortened. Projections of the first seven antennal flagellomeres with short ventral setae. **Tolletia** Matile, 1973
 - Basal cell normal, its apex near the level of the end of the Sc, anal vein almost reaching the margin. Each flagellomere projection with a long apical seta or without setae. 7
- 7 Anal lobe reduced. Anepisternum setose. Probasitarsus up to twice the length of the tibia. **Duretina** Matile, 1990
 - Anal lobe developed. Anepisternum bare. Probasitarsus much shorter than twice the tibia. 8
- 8 Face wide. Wings clear. No subscutellar membranous area. Gonostylus with two strong apical teeth. **Afrokeroplatus gen. nov.**
 - Face narrow. Wings at least partly darkened. Distinct membranous area below scutellum. Gonostylus without strong teeth. 9
- 9 Membranous subscutellar area extensive, subtriangular. Gonostylus pointed, with an apical seta. **Platyroptilon** Westwood, 1850
 - Membranous subscutellar area narrow, Y-shaped. Gonostylus apically rounded and dorsoventrally flattened. **Terocelion** Ševčík, 2012
- 10 Anal vein short or reduced. Mid and hind external tibial spurs sometimes absent. 11
 - Anal vein well developed, ending at the wing margin or a little earlier. Mid and hind external tibial spurs present. 15

- 11 R_4 present. External tibial spurs absent. Tarsi longer than the body, exceeding 3.5 times the length of the tibia. *Xenokeroptatus* Matile, 1990
 – R_4 absent. External tibial spurs present. Tarsi not longer than body, protarsus shorter. 12
- 12 Tibial trichia irregularly arranged; tb weakened or reduced. Aedeagal apodeme long, reaching deeply into the 7th abdominal segment. 13
 – Tibial trichia in more or less regular rows. Aedeagal apodeme does not reach into abdomen. 14
- 13 Two ocelli; palpi with one palpomere; Sc ending free; basal cell reduced, R-M fusion very short, tb nearly horizontal. *Pseudochetoneura* Ševčík, 2012
 – Three ocelli; palpi with two palpomeres; Sc ending on costa, basal cell and R-M fusion well developed; tb vertical. *Asiokeroptatus* gen. nov.
- 14 Anal vein weak, shorter than Cu_2 . Sc not furcating at the apex. Laterotergite with short setae posteroventrally. *Microkeroptatus* Ševčík & Papp, 2009
 – Anal vein longer but not reaching wing margin. Sc with a vein-like fold ending free distally of Sc apex. Laterotergite bare. *Chetoneura* Colless, 1962
 = *Bisubcosta* Papp, 2006 – see ŠEVČÍK (2012a)
- 15 Tibial trichia arranged irregularly, except sometimes at the apex. R_4 ending on C. 16
 – Tibial trichia arranged in regular rows, at least the apical third. R_4 ends on C or R1 .. 20
- 16 Laterotergite setose entirely posteriorly. Male hypopygium much larger than the pregenital segments. *Mallochinus* Edwards, 1929
 – Laterotergite bare, with exception of a group of setae (a species of *Heteropterna*), and then male hypopygium no wider than pregenital segments. 17
- 17 Membranous area below scutellum depressed and triangular. *Heteropterna* Skuse, 1888. 18
 – Membranous area below scutellum narrow, slightly wider in the middle. 19
- 18 Membranous area below scutellum in shape of very large, equilateral triangle; antenna with ventral setae on flagellomeres absent or reduced, terminal flagellomere without apiculus. *Heteropterna* s. str. Skuse, 1888
 – Membranous area below scutellum small, in shape of an isosceles triangle; antenna with flagellomeres with well-developed dorsal and ventral setae, the terminal flagellomere apiculate. *Heteropterna* (*Scrobicula*) Matile, 1970
- 19 Face wide. Prostigmatic setae absent. Male: gonostyli flattened mediolaterally, armed with strong sclerotized teeth. *Cerotelion* Rondani, 1856
 – Face narrow. Anterior and posterior prostigmatic setae. Male: gonostyli flattened dorsoventrally, a narrow sclerotized ridge ending with two tiny apical teeth.
 *Paracerotelion* Matile, 1974
- 20 R_4 ending on R_1 . Last flagellomere with apical process white or yellow, usually long. Base of Rs nearly transverse. Last palpomere narrow, as long or longer than the face and clypeus together; laterotergite setose. *Neoceroplatus* Edwards, 1941
 – R_4 ending on R_1 or C. Last flagellomere without apiculus, or with a small apiculus, the same colour as flagellum. Base of Rs oblique. Last palpomere short, more or less dilated; laterotergite setose or bare. 21
- 21 Thorax with laterotergite bare. R_4 ending on C. 22
 – Thorax with laterotergite setose. R_4 ending on C or R_1 26

- 22 Prosternum bare. 23
 – Prosternum setose. 24
- 23 Antennal flagellomeres slightly expanded. Mesepimeron reduced ventrally. Tibial macrotrichia all alike. Male: ventral surface of gonocoxal synsclerite strongly excavated. ...
 *Nauarchia* Matile, 1990
- Antennal flagellomeres strongly expanded. Mesepimeron extended to the base of the pleura. Tibial macrotrichia in rows. Male: gonocoxal synsclerite unexcavated ventrally.
 *Euceroplatus* Edwards, 1929
- 24 Metatibia: only the apical third with regular row of macrotrichia. Marginal scutellar setae short, arranged in several rows. Male: gonostyli flattened dorsoventrally.
 *Rocetelion* Matile, 1988
- Rows of regular macrotrichia on almost the entire length of metatibia. A single row of long marginal scutellar setae. Male: gonostyli more or less modified, but never flattened dorsoventrally. 25
- 25 External spur of metatibia almost as long as the internal, metabasitarsus expanded. Narrow face. Male: finger-shaped gonostyli with a long apical seta, tergite IX normal.
 *Setostylus* Matile, 1990
- External spur of metatibia much shorter than the internal, metabasitarsus standard. Face wide. Male: gonostyles without long apical seta, but profoundly modified; tergite IX very large, covering almost the entire dorsal surface of the hypopygium.
 *Tergostylus* Matile, 1988
- 26 R_4 ending on R_1 . Face wide. *Keroplatus* Bosc, 1792
 – R_4 ending on C. Face very narrow. *Placoceratias* Enderlein, 1910

Discussion

Paradoxically, since the publication of the monograph by MATILE (1990), with more studies and further new taxa, the phylogeny of the family Keroplatidae appears to be more and more puzzling. As recently noted by ŠEVČÍK (2012b), the delimitation of some higher taxa, as well as the keys, are still usually based on a single character that may evolve independently in different lineages (e.g. pectinate antennae, reduction of palpi, setosity of thoracic sclerites, tibial trichia in rows). The diagnosis of many keroplatid genera is still not satisfactory, their relationships are mostly unclear and, therefore, a new classification and new phylogenetic analyses are much needed. In the situation when morphological characters are confusing, molecular methods should be more implemented. Some recent results indicate that the family Keroplatidae may well be a paraphyletic group, especially with respect to Lygistorrhinidae (see KALLWEIT 2014, ŠEVČÍK et al. 2014, MANTIĆ et al., unpublished data), and also that the unexpected positions of *Platyura* Meigen, 1803, *Burmacrocera* Cockerell, 1917 and some other genera in the molecular trees could substantially change the current concept of the tribes Keroplatini and Orfeliini.

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