World revision of *Xenomerus* Walker
(Hymenoptera: Platygastridea, Platygastridae)

I. MIKÓ¹, L. MASNER² & A. R. DEANS¹

¹Insect Museum, Department of Entomology, North Carolina State University, Campus Box 7613, Raleigh, NC 27695-7613, USA. E-mail: istvan.miko@gmail.com, adeans@gmail.com

²Agriculture and Agri-Food Canada, Ottawa, Ontario K1A 0C6, Canada. E-mail: lmasner@gmail.com

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Abstract

The Old World genus *Xenomerus* Walker is revised. Thirty one (31) species are recognized based on 879 specimens. Twenty four (24) new species are described: *X. armatus* (Oriental), *X. aureipes* (Ethiopian), *X. bickeli* (Australian), *X. comatus* (Ethiopian), *X. fulleri* (Australian), *X. gloriosus* (Australian), *X. halteratus* (Australian), *X. hilleri* (Australian), *X. feehani* (Ethiopian), *X. kalocsai* (Ethiopian), *X. malawi* (Ethiopian), *X. melikai* (Australian), *X. noyesi* (Oriental), *X. ochraceus* (Ethiopian, Oriental), *X. orientalis* (Oriental), *X. parorientalis* (Oriental), *X. rugifrons* (Oriental), *X. scutellatus* (Ethiopian), *X. spinosus* (Oriental), *X. vanharteni* (Ethiopian) and *X. watshami* (Ethiopian). Redescriptions and new combinations for the following species are provided: *Xenomerus buccatus* (Kononova & Kozlov) from *Trimorus*; *X. calligetus* (Kononova & Kozlov) from *Trimorus*; *X. cornutus* (Kononova & Kozlov) from *Trimorus*; *X. canariensis* Hoffert; *X. ergenna* Walker, *X. laticeps* Dodd and *X. varipes* Dodd are redescribed. New synonymies are proposed: *Trimorus mutator* Kononova & Kozlov = *X. canariensis* Hoffert; *X. ergenna* Walker, *X. hibernicus* Mineo & O’Connor = *X. canariensis* Hoffert. *Xenomerus latimetascutum* Szabo is transferred to *Trimorus*. *Xenomerus atomus* Rajmohana & Narendran, *Xenomerus indicus* Mukerjee, *Xenomerus forax* Kozlov et Lé and *Xenomerus flavicornis* Dodd are considered species of uncertain status (holotypes not available). An identification key is provided, and four species groups are proposed.

Key words: Platygastroidea, systematics, taxonomy, new species, identification key, Xenomerus, revision

Introduction

With 466 species in 11 genera (Johnson, 1992) Teleasinae is one of the largest and most common groups of Platygastroidea. The limits of genera within the subfamily, however, are not well defined. This situation has caused many problems in generic placement of new teleasine species, including *Xenomerus* species, recently described in *Trimorus* by Kononova & Kozlov (2001) and Kononova & Petrov (1999). We revise the genus *Xenomerus* in order to resolve outstanding taxonomic issues, and we provide a diagnostic key to species and a character set for further systematic studies on Teleasinae.

Material and methods

Material (849 specimens): Specimens were borrowed from the following institutions (abbreviations after Evenhuis 2010; curators names are in parentheses after institutions).

ANIC Australian National Insect Collection, CSIRO, Canberra City, Australian Capital Territory, Australia (J. Lasalle)

BMNH The Natural History Museum, London, United Kingdom (S. Rider)

CNC Canadian National Collection of Insects, Ottawa, Ontario, Canada (J. Huber/A. Bennett)

CMNH Carnegie Museum of Natural History, Pittsburg, Pennsylvania, USA (J. Rawlins)

HNHM Hungarian Natural History Museum, Budapest, Hungary (S. Csizsz)

NMW Naturhistorisches Museum, Vienna, Austria (S. Schödl/F. Zettel)

NHRS Naturhistoriska riksmuseet, Stockholm, Sweden (B. Viklund)

NMKE National Museum of Kenya, Nairobi, Kenya (S.W. Kimani)

NMSA Natal Museum, Pietermaritzburg, Kwa-Zulu Natal, South Africa (M. Mostovski)

QSBG Queen Sirikit Botanic Gardens, Chaing Mai, Thailand, (M. Sharkey)

ROME Royal Ontario Museum, Toronto, Ontario, Canada (D.C. Darling)

SAMA South Australian Museum, Adelaide, South Australia, Australia (J. Forrest)

SAMC Iziko Museum of Cape Town, Cape Town, South Africa (S. van Noort)

SANC South African National Collection of Insects, Pretoria, Republic of South Africa (G. Prinsloo)

UASK Zoological Institute, Ukrainian Academy of Sciences, Kiev, Ukraine (S. V. Kononova)

USNM National Museum of Natural History, Washington D.C., USA (M. Gates)
Comments. General observations were made by stereomicroscope (Leica MZ6) at 160x magnification. The acrosternal calyx of S5, ovipositor system and wing venation were studied on slide mounts embedded in Canada balsam (Prinsloo 1980). For SEM examination dried specimens were rehydrated, cleaned with fluid detergent, transferred to 96% ethanol in ethanol series, critical point dried and mounted with double sided adhesive tape on stubs. Digital images were taken by Nikon coolpix 4500 attached to Olympus BH2 compound microscope. A series of photographs were prepared by focusing the sharpness on different levels of the structure. Pictures were combined by CombineZ5 (Hadley 2006) using “do combine” and “do average and filter” commands. Images were processed in Adobe Photoshop 6.0. Line drawings were made in Adobe Photoshop 6.0. Abbreviations used for collecting methods as follows: CMT-canopy malaise trap, BLT-black light trap, FIT-flying interception trap, LT-light trap, MT-malaise trap, SS-screen sweeping, WPT-white pan trap, YPT-yellow pan trap.

Anatomical terminology. Terms for skeletal features, concerning head and thorax, follow Hymenoptera Anatomy Ontology (Yoder et al, in review) and Mikó et al. (2007). Surface sculpture terminology follows Harris (1979), terminology of wing venation follows Masner (1980) and female terminalia follows Austin and Field (1997). Additional characters are listed below (new or modified characters are marked with*):

Acrostellar calyx of S5* (aeS5: Figs 5, 21, ): The median, paired, externally concave area on the acrosternite of S5. The acrostellar calyx of S5 is well developed in Teleasinae, Anteris and Tiphodytes. The enlarged retractor of S5 inserts to the anterior margin of the acrosternite, just anterior to the acrostellar calyx. We found two circular, sac–like structures in some specimens which were not macerated in KOH. These structures seem to be intact secretory cells connecting to the acrostellar calyx via duct (duct: Fig. 21). The external surface of the acrostellar calyx is usually covered by the 4th sternum. We assume, that the arosternal calyx of S5 could serve as a secondary reservoir for type III gland cells. Acrostellar calyx closure could be result from the contraction of the acrostellar muscles, while opening might be result from the change of hydrostatic pressure of the hemoplymph (Austin et al. 2005) during oviposition. Similar gland reservoirs and opening mechanisms were described by in agathidine Braconidae (Buckingham and Sharkey 1988), in Ceraphronidae (Waterstone evaporatorium; Mikó and Deans 2009) and in Vespidae (Van der Vecht 1968).

Anterior and posterior rows of foveae of mesopleural carina* (arf, prf: Fig. 77): rows of foveae extending anteriorly and posteriorly along the mesopleural carina.

Anterior pit of S2 (atS2: Fig. 5; Masner and Huggert 1989): The pit that is located on the anterolateral edge of S2 and corresponds with an internal apodeme (ina: Fig. 8).

Apical setae on T3* (asT3: Fig. 6): ordered setae in transverse row close to the posterior margin of T3.

Apical setae on T7+8 (asT7+8: Fig. 6) are located on the dorsal surface of T7+8.

Basal depressions on S1, S2 and S3* (bsdS2,3: Fig. 5): The row of depression that extends along the anterior margin of S1, S2 and S3, from which sulci can be developed.

Basal depressions on T1, T2 and T3* (bsdT2,3: Fig. 6): The row of depressions that extends along the anterior margin of T1, T2 and T3, from which costae can be developed.

Cercus (crc: Fig. 6): The sclerite that is located distolaterally on T9+T10.

Clava: (clava: Fig. 14; Bin 1981): The anatomical cluster that is composed of the apical flagellomeres bearing multiporous plates (Isidoro et al. 1996, 2001).

Claval formula (Bin 1981): Number of multiporous plates on flagellomeres A7–A12.

Erect bristle of male flagellomere (es: Fig. 9; Masner 1980): elongated, erect or semi-erect bristles located in whorls on the widest part of male flagellomeres. The erect bristles might be homologous with sickle shaped sensillum of Trissolcus basalis (Bin et al. 1989) and/or Type 3 sensilla of Entomacis (Yoder 2004).

Felt field (ff: Fig. 5; Masner and Huggert 1989): The setiferous patch that is located submedially on S2 with a median pore-like opening.

Inter notaular area* (INA: Fig. 1): The area on the mesoscutum that delimited laterally by notauli.
Lateral inflection of S2–S6* (lIS2: Fig. 5) The inflection along the lateral margin of metasomal sterna 2–6, marking sites of origin of laterosterna (lS2–5: Fig. 5; Masner 1976, 1980).

Lateral notaular area* (LNA: Fig. 1): The area on the mesoscutum that is delimited medially by the notauls.

Lateral patch of T2–T6* (lpT2–T6: Fig. 6): The patch that is coriaceous and setaceous and extends along the lateral margin of T2. The lateral patch of T2 could be homologous with the anterior pits on T2 in Platygastriidae (Masner & Huggert 1989).

Lateral setae on T1 (lsT1: Fig. 6; Johnson 1984): setae located laterally on T1. Lateral setae on T1 might be homologous with mid petiole setae of Entomacis (Yoder 2004).

Median patch on T4* (mpT4: Fig. 6): The coriaceous and setaceous patch located submedially on T4.

Metasomal terga 1–6 (T1–T7+8: Fig. 6; Austin and Field 1997): Adominal terga that are located posterior to the first abdominal tergum and compose the metasoma.

Palpal formula: Number of palpal segments in the maxillary and labial palps, respectively.

Pedicel (A2: Fig. 14): The second segment of the antenna

Posterior felt field* (pff: Figs 5, 7): The setiferous patch that is located submedially on S3 only in males telesines. The felt field and posterior felt field correspond internally to tubular structures (fst: Fig. 8) similar to the secretory cell ductules of many Braconidae (Buckingham and Sharkey 1988). It is possible that the felt field and posterior felt field are secondary cuticle modifications surrounding the openings of Type III. exocrine glands (Noiriot and Quennedey 1972).

Posterodorsal patch of T3* (pdpT3: Fig. 6): The patch that is coriaceous and setaceous on the posterolateral part of T3.

Retractors of metasomal sterna S2–S6* (S3–S2: Fig. 8; S4–S5: Fig. 21) The fan shaped external retractor of the metasomal sternum originates from the posterior part of the preceding sternum and inserts to the anterior margin of its acrosternite.

S1–S6 (S1–S6: Fig. 5; Austin and Field 1997): metasomal sterna.

Scape (A1: Fig. 14): The proximal segment of the antenna.

Ventral microcilia* (vm: Figs 9, 10, 11): The sensilla that is located ventrally on male flagellomere. Ventral microcilia is shorter than erect bristles. Ventral microcilia might be homologous with sensillum chaeticum or sensillum conicum of Trissolcus basalis (Bin et al. 1989) and Type 2 sensilla of Entomacis (Yoder 2004).

Descriptions of different character states used in keys and species descriptions are explained and figured in the generic description of Xenomerus.

Measurements. Body length was measured from the apex of interantennal process to the tip of the metasoma and is provided only as a general indication of size. Most of the following measurements follow Johnson (1984), Masner (1980). new measurements are marked with an asterisk (*). We measured the length of the marginal vein between the first marginal placoid sensilla and its distal end (Fig. 3). Head width (HW), head length (HL), head height (HH), interorbital space (IOS), length of posterior ocellar line (POL), ocular ocellar line (OOL) and lateral ocellar line (LOL), length of radicle (r), A1 (A1) and clava (clava), length of transscutal line (TSL)*, maximum length of mesoscutum (ML), and mesoscutellum (SL), distance between posterior end of notauli (DPN)*, distance between posterior end of notaulus and posterolateral edge of mesoscutum (DNP)*, width of mesoscutellum between axillar carinae (SW)*, length of marginal vein between anterior placoid sensilla and posterior end of marginal vein (m)*, length of stigmal vein (st), maximum length (T1L, T2L, T3L) and width (T1W, T3W) of metasomal terga were taken as indicated in Figures 1, 2, 4 and 6. The ratio FCI (frontal cephalic index) is the ratio of HW/HH, the ratio LCI (lateral cephalic index) is the ratio of HH/HL. In descriptions the maximum and minimum values, mean (M=), standard deviation (SD=) of ratios and sample size are given.

Descriptions. Species were redescribed from holotypes except X. ergenna, X. canariensis and X. varipes, where types were not available or were very poorly preserved. Character states are presented in anterior to posterior sequence of body parts. Species descriptions are for the most part comparable. For a few species, additional features are described: The distance between posterior end of notauli in ergenna-group;
completeness of toruli triangle in *X. noyesi* and *X. fulleri*; presence of median carina extending along the mesoscutellum and ratios of A3/A4 and A3/A2 in *X. spinosus* and *X. armatus*. Features in the diagnoses are presented in order of importance. All descriptions were checked against the Hymenoptera Anatomy Ontology using the proofing tool available through the Hymenoptera Glossary website (Deans et al. 2010).

**Xenomerus Walker**


For subsequent taxonomic literature see Johnson (1992).

**Diagnosis.** Most similar to *Trimorus* Förster, differing in male flagellomeres A3–A11 bottle-shaped, with long, erect, whorl of bristles; mandible with three teeth of equal length; palpal formula 3:1 with equal maxillary palp, scaly reticulate internotaular area, foveolate epicoxal sulcus. Basal depressions on the third metasomal sternum is are present only in *Xenomerus* within Teleasinae, however the depressions are absent in *X. noyesi* and *X. vanharteni*.

**Description.**

**FEMALE:** Body length: 0.58–1.66 mm.

Body black to yellow, apical tarsomeres darker than proximal tarsomeres, interantennal process usually lighter than head.

Head transverse, almost as high as wide; 1.5–2 times as long as high; usually about 1.5 times as wide as inter orbital space, in *X. spinosus* HW/IOS=1.85; interorbital space usually shortest at or above eye midlevel, in *X. spinosus* interorbital space shortest below eye midlevel; head 1.2–1.5 times as wide as transscutal line; mandible short, broad, with three teeth (Fig. 20); teeth size invariant; facial striae short, not reaching (e.g. Figs 28, 29, 44, 45, 86, 87), or long, extending over (e.g. Fig. 80) but not obscuring or sometimes obscuring frontal patch (e.g. Figs 38, 39, 63, 68, 74), in some cases reaching anterior ocellus (e.g. Figs 56, 57); frontal patch distinct (e.g. Figs 28, 29, 44, 45, 80), sometimes extending dorsally of eye midlevel (Fig. 87), or indistinct, obscured by facial striae; median area on frons smooth and bare, usually at least 0.5 times as wide as IOS (Fig 56), in *X. rugifrons* reduced in size, and almost entirely obscured by facial striae (Fig. 57); central keel usually present, incomplete (e.g. Figs 44, 45, 65), or complete (Figs 28, 29, 37–39, 56, 63, 67–69, 74), absent in *X. noyesi*, *X. fulleri* and *X. rugifrons* (Fig. 57); toruli triangle well developed, usually closed dorsally, in *X. fulleri* and *X. rugifrons* opened dorsally (Fig. 57), usually shorter (Figs 28, 29, 38–39, 56, 63, 65, 68, 69, 74, 75), in *X. rugifrons* longer (Fig. 57) than clypeus length; POL 0.86–3.00 times as long as OOL; vertex patch absent (e.g. Figs 24, 73) or present (Figs. 25, 37, 108), sometimes continuous with vertex sculpture (Figs 26, 27, 54, 55, 64, 66, 84, 88); hyperoccipital carina sharp, extending to orbit (Fig. 24) or extending between lateral ocelli (Figs 25, 36, 66), or absent (Figs 26, 27, 31, 54, 55, 89); genal patch present, segregated from vertex sculpture (Figs 25, 81) or continuous with it (Figs 26, 27, 31) or absent (Fig. 71); hypostomal pit located usually closer to posterior tentorial pit than to oral foramen, in *X. vanharteni* hypostomal pit located closer to the oral foramen; palpal formula 3:1 with palpal segments equal in length (Fig. 93).

**Antenna:** radicle elongate (A1/r=2–3) (Figs 13, 14) or short (A1/r=5–6) (Figs 12, 15); claval formula usually 2:2:2:1, 1:2:2:1 in *ergenna*-group; A3 usually shorter than pedicel (Figs 12, 14, 15), in *X. spinosus* and *X. rugifrons* A3 as long as A2 (Fig. 13); scape about as long as clava.

Propleural epicoxal sulcus foveolate (e.g. Figs 22, 51, 58, 59, 76, 98); propleural cervical sulcus foveolate (e.g. Figs 76, 77) or simple (Figs 51, 98); propleuron scaly reticulate (Figs 51, 58, 59, 76, 98); anterior process of pronotum usually well developed (Figs 76, 77, 98) in *ochraceus*-group reduced (Fig. 51); pronotal cervical sulcus is foveolate (Figs 76, 77) or simple (Figs 58, 59); pronotal suprahumeral sulcus simple (Figs 58, 98) or foveolate, complete, merged with pronotal cervical sulcus (Figs 76, 77), or incomplete (Fig. 51); epomial carina well developed (Fig. 60) or absent (Figs 22, 51, 58); posterior pronotal sulcus with row of setae present; netrion sulcus present, complete (e.g. Figs 22, 58, 59), incomplete (Fig. 76) or absent (51, 60, 77); sometimes netrion sculpture strongly extending anteriorly onto lateral pronotal area (Figs 59, 93 97); netrion usually
spindle-like; mesonotal suprahumeral sulcus foveolate, not extending to antero-admedian line (e.g. Figs 25–27, 36, 81); mesonotal humeral sulcus usually foveolate (Figs 76, 77), in X. vanharteni both sulci simple, without foveae (Fig. 24); notaules elongate, almost reaching anterior margin of mesoscutum (e.g. Figs 25, 30, 31), normal, almost reaching transscutal line (e.g. Figs 54, 55, 61), short, not reaching transscutal line (Figs 64) or absent in X. vanharteni (Fig. 24) and in ochraceus group (Fig. 42); mesoscutum with posteriorly diminishing scaly reticulate sculpture, usually not reaching posterior margin, with sparse (Figs 30, 31, 64, 65) or dense (Figs 42, 54, 55, 61) setae, sometimes setal bases pustulate resulting in coriaceous-like sculpture (Figs 54, 78); mesoscutellum transverse, 1.7–2.5 times as wide as long; usually simple, in X. spinosus and X. armatus with median spine (Fig. 34); mesoscutellum with sparse marginal setae (Figs 24–27, 73), in some species with dense setae (Figs 54, 61); scutoscutellar sulcus foveolate, slightly (Figs 73, 78) or distinctively (Figs 79, 81, 88) diminishing medially, extending onto axillula; transaxillar carina present, merged with axilllar carina; posterior scutellar sulcus foveolate, reaching axillula laterally (Fig. 34); subalar pit well developed; acropleural sulcus well developed, sometimes almost reaching anterodorsal edge of mesopleuron (Fig 76, 77); prespecular sulcus and mesepimeral sulcus not merging on speculum; pleural pit well developed; mesopleural epicoxal sulcus foveolate; sternaulus usually not separated from row of foveae extending anteriorly of mesopleural carina (Figs 76, 77), sometimes well separated (Fig. 93); postacetabular sulcus foveolate, postacetabular patch present; mesopleural carina usually complete with two rows of foveae extending along its entire length (Figs 76, 77), sometimes incomplete (Figs 22, 93) in X. vanharteni almost entirely reduced (Fig. 23); mesepimeral sulcus foveolate, extending to mesocoxa; metanotal trough foveolate; metascutellum striated proximally; metanotal spine bluntly triangular, basal striation of metascutellum extending to metanotal spine (Figs 42, 54, 102, 103), or with apical semitransparent lamella (Figs 26, 27, 31) or pointed; reduced (Figs 76, 78) or well developed (Figs 77, 79); metapleural pit and metapleural sulcus present, upper and lower part foveolate; paracoxal sulcus foveolate (Figs 76, 77) or simple (ergenna group; Figs 22, 23) ventrally for the metalepural carina; plica usually absent, in X. vanharteni present; lateral propodeal carina well developed, inverted V or Y-shaped (Fig. 50), slightly curved outward or inward or S-shaped (Fig. 43); metasomal depression and lateral propodeal area striated at least along margins (e.g. Figs 43, 50), marginal striation sometimes extending medially, entirely obscuring lateral propodeal area; posterior propodeal projection absent (e.g. Figs 43, 50), tubercle-like or well developed (e.g. Figs 72). Fore wing wider or slightly narrower than mesoscutum; marginal vein 2–3 times as long as stigmal vein; marginal ciliae of hind wing elongated, hind wing less than 2 times as wide as marginal ciliae length.

Metasoma transverse, usually circular in shape, T3 as wide or slightly wider than mesoscutum; T1 with 2 lateral setae; basal depressions on T1 and T2 present, T1 usually concave in lateral view, in X. malawi slightly convex; lateral patch on T2 distinct (e.g. Figs 32, 33) or indicated only by a few setae (e.g. Figs 36, 48, 49); basal depressions on T3 usually present (e.g. Figs 32, 33, 48, 49, 52, 53), in X. noyesi and X. vanharteni absent (Figs 92), if basal depressions on T3 present, then basal depressions on S3 present (Figs 110–117); costae arising from basal depressions, sometimes almost reaching posterior margin (Figs 90, 91), sometimes T3 longitudinally rugulous (Figs 35, 62); lateral patch on T3 present (e.g. Fig. 35) or absent; posterodorsal patch on T3 present, sometimes obscured by basal sculpture of tergum (e.g. Fig 52); apical setae on T3 as long as setae located laterally on tergum (Figs 90, 91) or more than two times as long as lateral setae (Figs 48, 49); basal depressions on S1 and S2 present (Figs 111, 112–117); lateral and medial patches on T4 usually present, not fused (e.g. Figs 53, 90, 91), medial patch on T4 sometimes absent or marked by punctures (e.g. Fig. 92), sometimes anterior T4 entirely reticulate, lateral and medial patches fused (e.g. Fig. 35); felt field present; posterior felt field absent; acropleural calyces fused medially and circular in shape (comatus- and ergenna-groups Figs 112, 114–117), separated medially and circular in shape but (ochraceus-group Fig. 113) or well separated and transversely elongate (melleus-group Figs 21, 110, 111); number of apical setae on T7+8=2 (ergenna-group) or =4; median extensions of lateral apodemes of T7+8 separated, slightly converging (Figs 115, 117) proximal part of ventral membranous plate simple, without rod-like structure anteriorly, median apodeme on S6 present.

**MALE**: Differs from female in wider and shorter head, sometimes almost 1.5 times as wide as high (X. melleus, Fig. 94); inter orbital space shortest below eye midlevel; A6–A11 (Figs 18, 19) or A7–A11 (Figs 9,
10, 16) with stronger (Fig. 16) or weaker (Fig. 19) median constriction (dibottled) with two whorls of setae, or without constriction (unibottled) with one whorl of setae (Fig. 17); A3–A11 with 1–3 (few) (Figs 12, 16–19) or with 6–10 (numerous) (Figs 9, 11) ventral microciliae; A5 distinctly modified (Figs 18, 19) or not modified (Figs 9, 10, 11); posterior felt field present.

**Xenomerus** species groups

The **ergenna**-group

**Diagnosis.** male flagellomeres without median constriction (“unibottled”), with few ventral microcilia; A5 modified; claval formula: 1:2:2:2:1; suprahumeral and cervical pronotal sulci not foveolate; anterior tip of pronotum well developed; notaulus usually present in females, in *X. vanharteni* absent both in males and females; mesopleural carina incomplete; metapleural epicoxal carina absent dorsally; propodeal lateral carinae inverted V-shaped; lateral patch on T3 reduced, not extending across to the whole tergum; apical setae on T3 short; T9+T10 with two apical setae; acrosternal calices fused medially, spherical in shape.


**Hosts.** Dromiinae, *Xenomerus ergenna* Walker (Bin, 1981)

**Distribution.** Old world

The **melleus**-group

**Diagnosis.** male A7–A11 with weak median constriction (“dibottled”), with few ventral microcilia; A5 modified; claval formula: 2:2:2:2:1; suprahumeral and cervical pronotal sulci not foveolate; anterior tip of pronotum well developed; notaulus present in female; mesopleural carina complete or incomplete; paracoxal sulcus not foveolate ventrally of the metapleural sulcus; propodeal lateral carinae inverted V-shaped; lateral patch on T3 extending to the whole tergum; apical setae on T3 short; T7+8 with 4 apical setae; acrosternal calyx transversely elongated, separated.

**Included species.** *X. halteratus* sp. n., *X. melleus* sp. n.

**Hosts.** unknown.

**Distribution.** Australia

The **ochraceus**-group

**Diagnosis.** male A7–A11 with weak median constriction (“dibottled”), with numerous ventral microcilia; A5 modified; claval formula: 2:2:2:2:1; suprahumeral pronotal sulcus foveolate, cervical pronotal sulcus simple; anterior tip of pronotum reduced; notaulus absent in female; mesopleural carina complete; paracoxal sulcus foveolate ventrally of the metapleural sulcus; propodeal lateral carina s-shaped; lateral patch on T3 reduced, not extending medially to the whole tergum; apical setae on T3 elongate (T3l/asT3=1.5); T7+8 with 4 apical setae; acrosternal calyx separated, spherical in shape.

**Included species.** *X. guinensis* sp. n., *X. ochraceus* sp. n., *X. yamagishii* sp. n.

**Hosts.** unknown

**Distribution.** Old World

The **comatus**-group

**Diagnosis.** male A7–A11 without median constriction or with strong median constriction (“unibottled” or “dibottled”), with few or numerous ventral microcilia; A5 modified or simple; claval formula: 2:2:2:2:1;
suprahumeral pronotal sulcus foveolate; cervical pronotal sulcus, except *X. rugifrons* foveolate; anterior tip of pronotum well developed; notaulus present; mesoscutum complete or incomplete; metapleural epicalyx carina merging dorsally with the vertical part of metapleural sulcus; propodeal lateral carinae inverted V- or Y-shaped; lateral patch on T3 reduced, not extending medially to the whole tergum; apical setae on T3 short; T7+8 with 4 apical setae; acrosternal calyx fused, spherical in shape.

**Included species.** *X. armatus*, **sp. n.**, *X. aureipes*, **sp. n.**, *X. bickeli*, **sp. n.**, *X. comatus*, **sp. n.**, *X. laticeps* Dodd, *X. forax* Kozlov & Lé, *X. gloriosus*, **sp. n.**, *X. guinensis*, **sp. n.**, *X. halteratus*, **sp. n.**, *X. hilleri*, **sp. n.**, *X. kalocsa*, **sp. n.**, *X. feehani*, **sp. n.**, *X. laticeps* Dodd, *X. malawi*, **sp. n.**, *X. melikai*, **sp. n.**, *X. melleus*, **sp. n.**, *X. noyesi*, **sp. n.**, *X. ochraceus*, **sp. n.**, *X. orientalis*, **sp. n.**, *X. parorinetalis*, **sp. n.**, *X. rugifrons*, **sp. n.**, *X. scutellatus*, **sp. n.**, *X. solox* Kozlov & Lé, *X. spinosus*, **sp. n.**, *X. vanharteni*, **sp. n.**, *X. varipes* Dodd, *X. watshami*, **sp. n.**

**Hosts.** Dromiini *X. orientalis* **sp. n.**

**Distribution.** Ethiopian, Oriental and Australian.

**Key to World species of Xenomerus**

**FEMALES** (Unknown for *X. hilleri*, *X. melleus*, *X. noyesi,* )

1 Mesopleural carina absent (Fig. 23) or incomplete, not extending ventrally to mesocoxa (Fig. 22) (*ergenna*-group)

2 Mesopleural carina complete, extending ventrally to mesocoxa (e.g. Figs 51, 60) ................................................................. 2

2(1) Hyperoccipital carina extending to orbit (Fig. 24); notaulus absent (Fig. 24); mesopleural carina absent, sulci on mesopleuron not foveolate (Fig. 23); T3 without basal depressions; Yemen. ........................................... *X. vanharteni* **sp. n.**

3 Hyperoccipital carina, if present, not extending to inner orbit (e.g. Figs 25–27, 30, 31); notaulus present (Fig. 25–27, 30, 31); mesopleural carina present, sulci on mesopleuron foveolate (Fig. 28); T3 with basal depressions (e.g. Figs 32, 33) .................................................................................................................. 3

3(2) POL 2–2.2 times as long as OOL; vertex behind POL unsculptured, with sharp hyperoccipital carina (Fig. 25); Old world, widespread ........................................................................................................................................ 3

- POL 1–1.4 times as long as OOL; vertex behind POL sculptured, hyperoccipital carina absent (e.g. Figs 26, 27, 30, 31) ........................................................................................................................................................................ 4

4(3) Wings reduced, not exceeding middle of T3; mesoscutum 2.5 times as wide as long; mesosoma yellowish (Fig. 26); Russia. ............................................................................................................................ *X. buccatus* (Kononova & Kozlov)

- Wing fully developed, exceeding apex of metasoma; mesoscutum 1.4–1.6 times as wide as long; mesosoma blackish (Figs 27, 30, 31) .................................................................................................................. 5

5(4) Sculpture of vertex extending down to frons (Fig. 28); mesoscutum sculpture reaching posterior margin (Fig. 27); Russia, Netherlands. ........................................................................................................... *X. calligerus* (Kononova & Kozlov)

- Frons smooth (Fig. 29); sculpture of mesoscutum not reaching posterior margin (e.g. Figs 30, 31) ........................................... 6

6(5) Sculpture of vertex merging with genal patch, cells of reticulate sculpture as wide as lateral ocellus diameter; POL=OOL (Fig. 31); notauli less convergent, shortest distance between notauli (DPN) two times as long as distance between posterior end of notaulus and posterolateral edge of mesoscutum (DNP) (Fig. 31); metasoma elongated: T1 3–3.5 times as wide as long (Fig. 33); A1 1.4 times as long as radicle; Russia (Primorskiy Kraj), Japan.

- Sculpture of vertex not reaching genal patch, cells of reticulate sculpture half as wide as lateral ocellus diameter; POL/OOL=1.3–1.5 (Fig. 30); shortest distance between notauli (DPN) as long as distance between posterior end of notaulus and posterolateral edge of mesoscutum (DNP) (Fig. 30); metasoma short: T1 5.5–6 times as wide as long (Fig. 32); A1 3–3.2 times as long as radicle; Old world, widespread ........................................................................... *X. cannariensis* Huggert

7(1) Mesoscumellum medially with sharp spine (Figs 34, 41) and median keel extending between anterior margin and apex of spine ........................................................................................................ 8

- Mesoscumellum unarmed (e.g. Figs 42, 54, 55) ............................................................................................................................ 9

8(7) Hyperoccipital carina not extending to orbit; vertex patch present (Fig. 37); HW/IOS=1.8, IOS longest below eye midlevel (Fig. 39); netrion sulcus present (Fig. 40); A4 distinctly longer than A3; Taiwan, Malaysia ........................................................................................................................................... *X. spinosus* **sp. n.**
- Hyperoccipital carina extending to inner orbit; vertex patch absent (Fig. 36); HW/IQS=1.5, IOS longest above eye midlevel (Fig. 38); netrion sulcus absent; A4 distinctly shorter than A3; Thailand................. X. armatus sp. n.

9(7) Notaulus absent (Fig. 42); propodeal lateral carina S-shaped (Fig. 43); T3 with elongated apical setae (Fig. 47–49) (ochraceus-group) .............................................................. 10
- Notaulus present (e.g. Figs 54, 55, 61, 64), propodeal lateral carinae inverted Y- or V- shaped (Fig. 50); apical setae on T3 not elongated (e.g. Figs 52, 53, 62, 75) .................................................... 12

10(9) Frons with dense setae (Fig. 44, 46); T3 costae extending at most to middle of tergum (Fig. 47, 48); if mesoscutellum and head black, mesonotum black .......................................................................................... 11
- Frons with sparse setae (Fig. 45); T3 costae exceeding middle of tergum (Fig. 49); mesoscutellum and head black, mesonotum yellowish; Papua New Guinea. ......................................................... X. guinensis sp. n.

11(10) Central keel incomplete (Fig. 44); basal depressions on T3 thick (Fig. 48); POL/OOL=1.25–1.35; Ethiopian, Oriental ............................................................. X. ochraceus sp. n.
- Central keel complete (Fig. 46); basal depressions on T3 thin (Fig. 47); POL/OOL=1–1.5; Oriental .............................................. X. yamagishi sp. n.

12(9) POL distinctly shorter than OOL (POL/OOL=0.6–0.8) (Figs 54, 55); facial striae extending to vertex sculpture, frons with rugulous sculpture (Figs 56, 57) .......................................................... 13
- POL equal or longer than OOL (POL/OOL=1–3.4) (e.g. Figs 61, 64, 66, 67, 70, 78); frons without rugulous sculpture (if facial striae extending to OOL, frons not rugulous) (e.g. Figs 63, 65, 68, 69) ........................................ 14

13(12) T3 costae not exceeding middle of tergum, posteriorly reticulate (Fig. 52); pronotal suprahumeral sulcus not foveolate; netrion sculpture not extending onto lateral pronotal area (Fig. 58); metascutellum bluntingly triangular, entirely striated; wings reduced, not exceeding middle of T3 (Fig. 54); radicle short (A1/r=6–6.5) (Fig. 12, 56); Australia .......................................................................................... X. halteratus sp. n.
- T3 costae reaching posterior margin of tergum, posteriorly not reticulate (Fig. 53), pronotal suprahumeral sulcus foveolate; netrion sculpture extending to propleuron (Fig. 60); metascutellum pointed, only base striated (Fig. 55); wings well developed, extending apex of metasoma; radicle elongated (A1/r=2.7–2.8) (Figs 13, 57); Indonesia, Malaysia ................................................................................... X. rugifrons sp. n.

14(12) T3 longitudinally rugoso-punctate (Fig. 62); frons and mesonotum with dense, thick setae (Fig. 61, 63); Africa, widespread .......................................................... X. comatus sp. n.
- T3 with only longitudinal costae (Figs 90, 91), frons with sparse, thin setae (e.g. Figs 66–69, 74, 80, 86, 87) ....... 15

15(14) POL about 3 times as long as OOL, LOL > OOL (Fig. 64); Africa, widespread; United Arab Emirates .......... X. watshami sp. n.
- POL 1 to 2.2 times as long as OOL, LOL longer OOL (e.g. Figs 66, 67, 78, 79, 81, 84, 88, 89) ......................... 16

16(15) Radicle elongate: A1/r=2.8–3.4 (e.g. Fig. 14); metasoma less elongated (T1W/T1+2=1.8–1.9) ......................... 17
- Radicle short: A1/r=5–6.5 (e.g. Fig. 15); metasoma more elongated (T1W/T1+2=1–1.4) ........................................... 19

17(16) Hyperoccipital carina extending to orbit; vertex smooth (Fig. 67); facial striae extend to middle of frons curving to central keel (Fig. 69); mesoscutellum anteriorly rugulose (Fig. 100). Oriental, widespread ... X. orientalis sp. n.
- Hyperoccipital carina not extending to margin of eye, vertex patch present (Fig. 66); facial striae never extend to middle of frons, not curving to central keel (e.g. Fig. 66); mesoscutellum smooth (Fig. 70) .............................................. 18

18(17) Vertex smooth, only vertex patch present (Fig. 70); genal patch absent (Fig. 71); POL/OOL=1.7–1.8 (Fig. 70); A1/r=2.7–2.8 (Fig. 14); lateral pronotal area without sculpture; South Africa, Kenya .............. X. aureipes sp. n.
- Vertex entirely reticulate (Fig. 66); genal patch present; POL/OOL=2.1–2.2 (Fig. 66); A1/r=3.3; lateral pronotal area with oblique crenulae; Brunei, Vietnam ...................................................... X. parorinetalis sp. n.

19(16) Mesoscutellum anteriorly rugulose (Fig. 72), (POL/OOL=1.2; Uganda) .................................................. X. scutellatus sp. n.
- Mesoscutellum smooth (e.g. Figs 73, 78, 79, 81, 84) or crenulated anteriorly (Fig. 86) ...................... X. malawi sp. n.

20(19) Mesoscutellum anteriorly with transversely crenulate (Fig. 85); dorsal margin of T1 convex from lateral view. Malawi .......................................................... X. malawi sp. n.
- Mesoscutellum smooth anteriorly (Figs 73, 78, 79, 81, 84, 88, 89); dorsal margin of T1 concave from lateral view ....... 21

21(20) Notaulus not reaching transscutal line, 2–3 times as long as wide (Fig. 73). Papua New Guinea... X. melikai sp. n.
- Notaulus reaching transscutal line, 8–10 times as long as wide (Figs 78, 79, 81, 84, 88, 89) ...................... 22

22(21) Facial striae exceeding eye midlevel, parallel with inner orbit; central keel complete (Figs 74, 80); T3 costae not exceeding mid length of tergum (e.g. Fig. 75) ............................................... 23
- Facial striae not exceeding eye midlevel, not parallel with inner orbit; central keel incomplete (Figs 86, 87); T3 costae exceeding 2/3 length of tergum (Figs 90, 91) ........................................... 26
23(22) Eye widest below midlevel (frontal view) (Fig. 80); scutellum less transverse (SW/SL=1.8) (Figs 81, 84); T3 as long as wide .......................................................... X. gloriosus sp. n.
- Eye widest in midlevel (Figs 74); scutellum transverse (SW/SL=2–2.2) (Figs 78, 79); T3 about 1.5 times as wide as long .......................................................... X. laticeps Dodd

24(23) Metascutellum unarmed (Fig. 81); netrion enlarged, distinctly wider than fore coxa (Fig. 82); Australia, Queensland .......................................................... X. bickeli sp. n.
- Metanotal spine well developed (Fig. 84); netrion smaller, as wide as fore coxa (Fig. 83); Australia, Victoria ............ X. vanharteni sp. n.

25(23) Metanotal spine long, slender (Fig. 77, 79); netrion sulcus absent, netrion larger (Fig. 78); A1–A7 brown; vertex patch present; Australia .......................................................... X. feehani Dodd
- Metanotal spine short, tubercle like (Figs 76, 78); netrion sulcus present, netrion smaller (Fig. 76); A1–A6 yellow; vertex patch absent; Australia, Queensland .......................................................... X. varipes Dodd

26(22) POL/OOL=1.4 (Fig. 89), frontal patch as wide as long, not reaching eye midlevel (Fig. 86), metasoma shorter (T1W/T1+2L=1.2); T3 posteriorly with coriaceous sculpture (Fig. 91); coxae yellow; Africa.................X. halteratus Walker
- POL/OOL=1.4–1.6 (Fig. 88); frontal patch vertically elongated, exceeding eye midlevel (Fig. 87); metasoma longer (T1W/T1+2L=1.4–1.5); T3 posteriorly smooth (Fig. 90); coxae brown Africa.................... X. kalocsai sp. n.


1 A8–A11 without median constriction (e.g. Fig. 17) .............................................................................. X. vanharteni sp. n.
- A8–A11 with median constriction (e.g. Fig. 18) .............................................................................. X. canariensis Huggert

2(1) Notaulus absent (Fig. 24); mesopleural carina absent, sulci on mesopleuron not foveolate (Fig. 23); Yemen. ........ X. halteratus Walker
- Notaulus present (e.g. Figs. 25–27, 30, 31); mesopleural carina present, sulci on mesopleuron foveolate (Figs. 22, 93) .......................................................... X. cornutus (Kononova & Kozlov)

3(2) T3 smooth (Fig. 92); Indonesia .............................................................................................. X. noyesi sp. n.
- T3 with basal groves (Figs 32, 33) ................................................................................................. X. malawi

4(3) POL 2–2.2 times as long as OOL; vertex behind POL unsculptured, with sharp hyperoccipital carina (Fig. 25); Old world, widespread .......................................................... X. ergenna Walker
- POL 1–1.4 times as long as OOL; vertex behind POL sculptured; hyperoccipital carina absent (e.g. Figs 26, 27, 30, 31) .......................................................... X. melikai

5(4) Sculpture of vertex extending down to frons (Fig. 28); mesoscutum sculpture reaching posterior margin (Fig. 27); Russia, Netherlands................................................................. X. calligetus (Kononova & Kozlov)
- Frons smooth (Fig. 29) sculpture of mesoscutum not reaching posterior margin (e.g. Figs 30, 31)............................. X. melikai

6(5) Sculpture of vertex merging with genal patch, cells of reticulate sculpture as wide as lateral ocellus diameter; POL/OOL=1 (Fig. 31); notauli less converge, shortest distance between notauli (DPN) two times as long as between posterior end of notaulus and posterolateral edge of mesoscutum (DNP) (Fig. 31); metasoma elongated: T1 3–3.5 times as wide as long (Fig. 33); A1 1.4 times as long as radicle; Russia (Primorski Kraj), Japan................................. X. cornutus (Kononova & Kozlov)
- Sculpture of vertex not reaching genal patch, cells of reticulate sculpture half as wide as lateral ocellus diameter; POL/OOL=1.3–1.5 (Fig. 30); shortest distance between notauli (DPN) as long as distance between posterior end of notaulus and posterolateral edge of mesoscutum (DNP) (Fig. 30); metasoma short: T1 5.5–6 times as wide as long (Fig. 32); A1 3–3.2 times as long as radicle; Old world, widespread......................... X. bickeli

7(1) T3 longitudinally rugoso-punctate (Fig. 62), frons with thick setae (Fig. 63) .... X. comatus sp. n.
- T3 with only longitudinal costae (Figs 75, 90, 91); frons with thin setae (Figs 94, 95, 99) ............................. X. varipes Dodd

8(7) Metascutellum bluntly triangular, entirely striated (Figs 96, 97); pronotal cervical sulcus not foveolate (e.g. Figs 99); mesosoma light brown to yellow; median constriction on male flagellomeres weak (Figs 11, 18, 19) .......... X. halteratus Walker
- Metascutellum pointed, only base striated (Fig. 100, 101, 103, 104, 108, 109); mesosoma dark brown to black; pronotal cervical sulcus foveolate (Figs 76, 77); median constriction of male flagellomeres distinct (Fig. 16) .... X. halteratus Walker

9(8) Mesopleural carina incomplete; netrion sulcus present (Fig. 98); pronotal suprahumeral sulcus absent (Fig. 98); facial striae exceeding top of head (Fig. 94); metascutellum anteriorly sculptured (Fig. 96); A4–6 with few ventral microcilia (Fig. 19); apical setae on T3 short. Australia......................................................... X. melleus sp. n.
- Mesopleural carina complete, netrion sulcus absent, pronotal suprahumeral sulcus present (Fig. 51); head less

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transverse, facial striae not exceeding top of head (Fig. 95); mesoscutellum smooth (Fig. 97); A4–6 with numerous ventral microcilia (Fig. 11); T3 apical setae elongated (Fig. 47–49) .................................................. 10
10(9) Frons with dense setae (Fig. 44); T3 costae extending at most to middle of tergum (Fig. 47, 48); if mesoscutellum and head black, mesonotum yellowish; Papua New Guinea. ................................................................. X. guinensis sp. n.
11(10) Central keel complete (Fig. 46); basal depressions on T3 thin (Fig. 47). Japan X. yamagishi sp. n.
- Central keel incomplete (Fig. 44, 101); basal depressions on T3 thick (Fig. 48) ........................................ X. ochraceus sp. n.
12(8) Mesopleural carina incomplete; netrion distinctly wider than fore coxa (Fig. 102); Australia, Queensland............ X. hilleri sp. n.
- Mesopleural carina complete; netrion narrower than fore coxa (Fig. 76, 77) .................................................. 13
13(12) POL 2.5–2.7 times as long as LOL, vertex entirely reticulate (Fig. 109); central keel incomplete (Fig. 107). Africa. ............................................................................................................................... X. watshami sp. n.
- POL 1–1.5 times as long as OOL; vertex smooth behind POL (e.g. Figs 103, 104, 106); central keel complete (Figs 105, 106) ................................................................. 14
14(13) POL/OOL=1.3–1.5; A5 modified (e.g. Figs 19) (Africa, Oriental) ........................................................................ 15
- POL/OOL=1; A5 not modified (e.g. Figs 9, 10) (Australia) ............................................................................... 16
15(14) A3–8 with numerous ventral microcilia; genal patch absent; hyperoccipital carina not extending to inner orbit; mesoscutellum smooth (Fig. 108); netrion sulcus complete; facial striae shorter, not curved inward (Fig. 106); T3 costae almost reaching posterior margin submedially; Africa. ......................................................... X. aureipes
- A3–8 with few ventral microcilia; genal patch present; hyperoccipital carina extending to inner orbit; mesoscutellum anteriorly rugulous (Fig. 100); facial striae extending to frons, curved inward (e.g. Fig. 69); T3 costae reduced submedially; Oriental ........................................................................ X. orientalis sp. n.
16(14) A3–A7 with numerous ventral microcilia (Fig. 9); metanotal spine reduced, tubercle like (Fig. 103); hind tibia and tarsi brown; Australia, Queensland. ................................................................. X. variipes Dodd
- A3–A7 with few ventral microcilia (Fig. 10); metanotal spine elongated (Fig. 104); hindtibia and tarsi yellow; Australia ........................................................................................................ X. laticeps Dodd

**Xenomerus armatus** Mikó & Masner, new species

Figures 35, 36, 38, 41

**FEMALE** (Holotype); Length=1.04 mm.

Black, interantennal process, mandible, radicle, A1–A7, tegula and legs excluding brown coxae yellow, A8–A12 brown.

**FCI**=1.18; **LCI**=2.05; **HW/IOS**=1.57; IOS shortest about eye midlevel; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.38); facial striae reaching vertex along orbit; frontal patch indistinct, obscured by facial striae; frons setae dense, thin; central keel complete; toruli triangle shorter than clypeus height; POL 1.2 times as long as OOL (POL/OOL=1.2); OOL 1.5 times as long as LOL (OOL/LOL=1.53); hyperoccipital carina present, blunt, extending to inner orbit; vertex smooth; vertex and genal patch absent; A1 more than 3 times as long as radicle (A1/r=3.2), as long as clava (A1/cl=0.96); A3 distinctly longer A4.

Epomial carina well developed, almost reaching pronotal suprahemeral sulcus; cervical pronotal area smooth, with scattered setae, setal bases pustulate; lateral pronotal area with transverse crenulae; netrion sulcus absent; netrion sculpture slightly extending onto lateral pronotal area; pronotal suprahemeral and cervical sulci complete, foveolate; mesoscutum about 1.5 times as wide as long (TSL/ML=1.45); notaulus reaching transscutal line; mesoscutum with dense, thin setae, setal bases pustulate, reticulate sculpture extending to lateral and inter notaular areas; mesoscutellum about two times as wide as long (SW/SL=1.91); scuto-scutellar sulcus slightly diminishing medially, less than 1.5 times as wide laterally as in the middle; mesoscutellum smooth, with a median spine and dense, long, thin, marginal setae; keel extending from middle of anterior margin of mesoscutellum to apex of median spine; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina nearly as wide as wide of foveae width on postacetabular sulcus; mesopleural carina complete with complete rows of foveae; foveae of mesepimeral

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sulcus 4 times as wide as width of posterior row of fovea of mesopleural carina, distance between posterior row of foveae and mesopleural sulcus less than foveae width on mesepimeral sulcus; metascutellum sharply pointed; sulcus along metapleural carina foveolate; epicoxal and lower part of metapleural sulci not merged; propodeal lateral carinae inverted Y-shaped; propodeal lateral and plical areas obscured by thick, dense setae, marginal striation extending medially; plica absent; posterior propodeal projection well developed; mesoscutum as wide as fore wing (TSL/WW=1.08); marginal vein about 2.5 times as long as stigmal vein (m/st=2.7); hind wing less than 2.5 times as wide as marginal cilia length (HWW/HWS=2.36).

T1 two times as wide as T1+T2 length (T1W/T1+T2L=2.0); T3 about as wide as mesoscutum (T3W/TSL=0.93); costae on T3 graduating posteriorly into longitudinally rugoso-punctate sculpture, reaching almost the posterior margin of tergum; lateral patches distinct, circular in shape; posterior patch of T3 indistinct, obscured by longitudinally rugoso-punctate sculpture; anterior half of T4 entirely reticulate.

**Variability.**

**MALE:** Unknown.

**Diagnosis.** Most similar to *X. spinosus*, differing by longer IOS located in eye midlevel, smaller eyes, shorter head, clava and radicle, POL/OOL, hyperoccipital carina extending to inner orbit, vertex sculpture not extending to frons, presence of median keel extending from anterior margin of mesoscutellum to median spine, absence of netrion sulcus, A4 as long as A3, shorter marginal vein and less elongated metasoma.

**Etymology.** The name refers to the unique armature of mesoscutellum


Holotype is deposited in BMNH. Paratypes are deposited in CNCI (3) and QSBG (1).

**Xenomerus aureipes** Mikó & Masner, new species

Figures 15, 70, 71, 106, 108

**FEMALE (Holotype):** Length=1.20 mm.

Dark brown, A1–distal part of A7, interantennal process, mandible, tegula and legs excluding apical tarsomeres yellow.

FCI=1.13; LCI=1.71; HW/IOS=1.64; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.36); facial striae exceeding eye midlevel along inner orbit, reaching frontal patch; frontal patch distinct, oblique, transverse; frons setae sparse, thin; central keel complete (Fig. 59); toruli triangle shorter than clypeus height; POL less than two times as long as OOL (POL/OOL=1.64); OOL longer than LOL (OOL/LOL=1.33); hyperoccipital carina present, blunt; vertex smooth, except reticulate, transversely elongated vertex patch; vertex setae denser behind POL area, setal bases pustulate; genal patch absent; A1 less than 3.0 times as long as radicle (A1/r=2.9), as long as clava (A1/cl=1).

Epomial carina present, diminishing medially; cervical pronotal area smooth, with scattered setae; lateral pronotal area dorso-medially reticulate, ventrolaterally smooth; netrion sulcus complete; netrion sculpture not extending onto lateral pronotal area; pronotal suprathoracic sulcus diminishing medially, pronotal cervical sulcus complete, both sulci foveolate; mesoscutum more than 1.5 times as wide as long (TSL/ML=1.66); notaulus reaching transscutal line; scaly reticulate sculpture of mesoscutum not extended to lateral and internotaular area; mesoscutellum nearly 2 times as wide as long (SW/SL=1.92); scuto-scutellar sulcus slightly diminishing medially, 1.5 times as wide laterally as in the middle; mesoscutellum with sparse marginal setae; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina, distance between postacetabular sulcus and anterior row of foveae of mesopleural carina 2–3 times as wide as foveae width on postacetabular sulcus; mesopleural carina complete, with complete rows of foveae; maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus
two times as long as width of posterior row of foveae of mesopleural carina; sulcus along metapleural carina foveolate; metascutellum sharply pointed; propodeal lateral carinae inverted Y-shaped; propodeal lateral and plical areas obscured by pale, dense setae, marginal striation extending medially; posterior propodeal projection distinct, tubercle-like; fore wing wider than mesoscutum (TSL/WW=0.88); marginal vein 3 times as long as stigmal vein (m/st=3); hind wing about 2.5 times as wide as marginal cilia length (HWW/HWS=2.66).

T1 less than 2 times as wide as T1+T2 length (T1W/T1+T2L=1.72); T3 about as wide as mesoscutum (T3W/TSL=1.14), costae on T3 almost reaching apex of tergum, reaching 8/9 of length of tergum; lateral patch of T3 distinct; diameter of posterior patch of T3 equal to width of one basal depression; anterior half of T4 entirely reticulate; acrostellar calyx of S5 fused and circular in shape.

**VARIABILITY**

(n=5): Length=1.14–1.45 mm (m=1.33, SD=0.11); in two specimens from Kenya coxae, A1–A4 brown; FCI=1.11–1.14 (m=1.13, SD=0.01); LCI=1.66–1.80 (m=1.75, SD=0.06); HW/IOS=1.58–1.64 (m=1.60, SD=0.052); HW/TSL=1.31–1.36 (m=1.34, SD=0.02); POL/OOL=1.75–1.86 (m=1.80, SD=0.05); OOL/LOL=1.14–1.33 (m=1.20, SD=0.07); A1/r=2.76–2.88 (m=2.81, SD=0.05); A1/cl=0.89–1.00 (m=0.93, SD=0.04); TSL/ML=1.55–1.66 (m=1.59, SD=0.046); SW/SL=1.92–2.00 (m=1.97, SD=0.03); TSL/WW=0.84–0.88 (m=0.86, SD=0.01); m/st=2.90–3.07 (m=3.01, SD=0.06); HWW/HWS=2.44–2.66 (m=2.53, SD=0.08); T1W/T1+T2L=1.70–1.86 (m=1.80, SD=0.067); T3W/TSL=1.03–1.20 (m=1.12, SD=0.06); in two specimens from Kenya costae shortened laterally and medially on T3; diameter of posterior patch of T3 sometimes reduced, equal or smaller than one basal depression.

**MALE**

(n=3): length=1.12, 1.44, 1.48; radicle, A1 and A2 yellow, coxa A3–A12 bright brown; (FCI=1.21); HW/IOS=1.41, 1.47, 1.53; HW/TSL=1.32, 1.28, 1.33; OOL longer (POL/OOL=1.47, 1.40, 1.50; OOL/LOL=1.54, 1.53, 1.57); A1/r=2.85, 2.80, 3.00; A2–A6 unbottled, A5 modified; A7–A11 double bottled, with distinct constrictions; flagellomeres with numerous ventral microcilia; A8 7, 7, 7.5 times as long as wide; TSL/ML=1.48, 1.42, 1.47; posterior row of foveae of mesopleural carina reduced, maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus 4–5 times as long as posterior row of foveae of mesopleural carina; m/st=2.90, 3.10, 3.10; HWW/HWS=2.30, 2.68, 2.73; metastoma elongate (T1W/T1+T2L=1.50, 1.54, 1.55); T3W/TSL=0.96, 0.96, 0.97; T3 costae reduced, shortened laterally and medially;

**Diagnosis.** Most similar to *X. comatus*, distinguished by the sparse, thin setae of body, smooth frons, presence of frontal patch, presence of netrion sulcus, absence of rugulous sculpture on T3.

**Etymology.** From the latin aureus, meaning golden and the latin pes, meaning leg, referring to pale yellow color of legs.


Xenomerus bickeli Mikó & Masner, new species
Figures 83, 84

FEMALE (Holotype): Length=1.51 mm.

Dark brown, interantennal process, radicle, A3–A6, legs excluding apical dark brown tarsomeres yellowish.

FCI=1.25; LCI=1.65; HW/IOS=1.58; head less than 1.5 times as wide as mesosoma (HW/TSL=1.41); facial striae reaching midlevel of eye, parallel on frons, obscuring frontal patch; frontal patch indistinct; frons setae sparse, thin; central keel complete; toruli triangle shorter than clypeus height; POL slightly longer than OOL (POL/OOL=1.15); OOL slightly longer than LOL (OOL/LOL=1.66); hyperoccipital carina absent; vertex entirely reticulate, finely crenulate between lateral ocellus and inner orbit; genal patch present, separated from vertex sculpture; A1 less than 5.0 times as long as radicle (A1/r=4.58), about as long as clava (A1/cl=0.96).

Epomial carina present, reaching pronotal suprahumeral sulcus; cervical pronotal area smooth, with sparse setae; lateral pronotal area with fine, transverse crenulae, anteriorly finely foveolate; netrion sulcus complete, fore coxa distinctly wider than netrion; pronotal suprahumeral and cervical sulci complete, foveolate; mesoscutum less than 1.5 times as wide as long (TSL/ML=1.35); notaulus normal, almost reaching transscutal line; reticulate sculpture of mesoscutum not extending to inter and lateral notaular areas; mesoscutellum less than 2.0 times as wide as long (SW/SL=1.80); scuto-scutellar sulcus slightly diminishing medially, 2–3 times as wide laterally as in the middle; mesoscutellum smooth, with sparse, long marginal setae; posterior scutellar sulcus not extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina two times as long as foveae width on postacetabular sulcus; mesopleural carina complete, with complete rows of foveae; in lower part of mesepimeral sulcus fine crenulae erecting from foveae anteriorly; sulcus along metapleural carina foveolate; metascutellum sharply pointed, metanotal spine not elongated; propodeal lateral carinae inverted Y-shaped, shafts distinctly curved outward; propodeal lateral area and plical area obscured by pale, dense setae, marginal striation extending medially; posterior propodeal projection indistinct; fore wing wider than mesoscutum (TSL/WW=0.73); marginal vein more than 3.5 times as long as stigmal vein (m/st=3.88); hind wing two times as wide as marginal ciliae length (HWW/HWS=2.0).

T1 as wide as T1+T2 length (T1W/T1+T2L=1.02). T3 less than 1.5 times as wide as long (T3W/T3L=1.22), as wide as mesoscutum (T3W/TSL=1.04); costae on T3 reaching middle tergum submedially; lateral patch distinct, elongate, 4–5 time as long as wide; posterior patch of T3 absent; anterior half of T4 reticulate with median smooth area.

MALE : Unknown.

Diagnosis. Most closely related to X. gloriosus, differs by A4 equal to A3, frontal patch obscured by facial striae, shorter POL, less wide netrion, well developed metanotal spine and presence of posterior patch on T3. Differs from X. varipes and X. laticeps in head widest below midlevel.

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**Etymology.** the name refers to the collector, D. Bickel.

**Material examined.** *Holotype female:* AUSTRALIA: Victoria, Otway National Park, Blanket Bay, 4–5.XII.1994, D.Bickel, YPT [ANIC:####]. Holotype is deposited in ANIC.

**Xenomerus buccatus** (Kononova & Kozlov), new combination

Figure 26


**FEMALE** (Holotype): Length=0.84 mm. Light brown; radicle, head and apical tarsomeres dark brown.

FCI=1.28; LCI=1.46; HW/IOS=1.64; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.34); facial striae not reaching midlevel of eye, exceeding frontal patch; frontal patch distinct, frons setae sparse, thin; central keel incomplete; POL less than 1.5 times as long as OOL (POL/OOL=1.2); OOL more than 1.5 times as long as LOL (OOL/LOL=1.66); hyperoccipital carina absent, vertex entirely reticulate, vertex sculpture extending to interocellar area, merging with genal patch; A1 about 3 times as long as radicle (A1/r=3.11), shorter than clava (A1/cl=0.82).

Epomial carina absent, cervical pronotal area smooth, with sparse setae; lateral pronotal area smooth with few crenulae above pronotal ventral projection; netrion sulcus complete; netrion sculpture not extending onto lateral pronotal area; pronotal suprhumeral and cervical sulci not foveolate; mesoscutum about 2 times as wide as long (TSL/ML=1.95); notaulus short, slightly exceeding transectual line, distance between posterior end of notauli more than two times as long as distance between posterior end of notaulus and posterolateral edge of mesoscutum; internotaular area entirely sculptured, lateral notaular area smooth; mesoscuteellum about 2.5 times as wide as long (SW/SL=2.58); scuto-scutellar sulcus almost as wide medially as laterally; mesoscuteellum smooth, with sparse marginal setae; posterior scutellar sulcus not extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; mesopleural carina incomplete; sulcus along metapleural carina foveolate; metascutellum bluntly triangular, only base striated, with a triangular, semitransparent lamella apically; propodeal lateral carinae inverted V-shaped; propodeal lateral area and plical area with sparse setae, marginal striation not extending medially; posterior propodeal projection indistinct; wings reduced, fore wing as long as mesosoma.

T1 more than 1.5 times as wide as T1+T2 length (T1W/T1+T2L=1.66); T3 more than 1.5 times as wide as long (T3W/T3L=1.77), about 1.2 times as wide as mesoscutum (T3W/TSL=1.27); costae on T3 not reaching 1/5 of tergum; lateral patch of T3 absent; posterior patch of T3 reduced nearly equal to width of 2–3 basal depressions; lateral patch on T4 present, reduced; median patch on T4 absent.

**MALE:** Unknown.

**Diagnosis.** Most closely related to *X. calligetus*, differs in smooth frons, and lateral notaular area, wider mesosoma, reduced wings and less elongate metasoma.

**Material examined.** *Holotype female:* RUSSIA: Kunashir Islands, Peschanoe Lake, 18.VIII.1980. S.V.Kononova (original det. label: *Trimorus buccatus*, K.K.). Holotype is deposited in ZMAS.

**Xenomerus calligetus** (Kononova & Kozlov), new combination

Figures 27, 28


**FEMALE** (Holotype): Length=0.95 mm. Brown; maxillary palp, mandible, interantennal process, radicle, A1 proximally, A2, legs, including coxae, excluding apical brown tarsomeres yellow.
FCI=1.25; LCI=1.45; HW/IOS=1.57; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.33); facial striae exceeding midlevel of eye, exceeding frontal patch; frontal patch distinct; frons setae sparse, thin; central keel complete, indistinct dorsally, obscured by frons sculpture; POL less than 1.5 times as long as OOL (POL/OOL=1.2); OOL more than 1.5 times as long as LOL (OOL/LOL=1.66); hyperoccipital carina absent; vertex entirely reticulate, vertex sculpture extending anteriorly to frons, merging posteriorly with genal patch; A1 less than 5.0 times as long as transscutal line, distance between posterior end of notauli more than two times as long as distance between posterior end of notaulus and posterolateral edge of mesoscutum; mesoscutum entirely sculptured; mesoscutellum about 2 times as wide as long (SW/SL=1.94); scuto-scutellar sulcus almost as wide medially as laterally; mesoscutellum smooth, with sparse, long marginal setae, setal bases pustulate; posterior scutellar sulcus not extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; sulcus along metapleural carina foveolate; metascutellum triangular, only base striated, with a triangular, semitransparent lamella apically; propodeal lateral carinae inverted V-shaped, shafts straight; propodeal lateral area and plical area with dense setae, marginal striation not extending medially; posterior propodeal projection indistinct; fore wing as wide as mesoscutum (TSL/WW=1.04); marginal vein more than 5 times as long as stigmal vein (m/st=5.62); hind wing about two times as wide as marginal ciliae length (HWW/HWS=1.9).

T1 less than 1.5 times as wide as T1+T2 length (T1W/T1+T2L=1.48); T3 about 1.5 times as wide as long (T3W/T3L=1.57), about 1.2 times as wide as mesoscutum (T3W/TSL=1.22); costae on T3 exceeding 1/3 of tergum; lateral patch present; posterior patch of T3 reduced, nearly equal to width of 2–3 basal depressions; lateral and median patches on T4 present, separated.

Variability (n=5): Length=0.78–0.95 mm (m=0.85, SD=0.08); FCI=1.21–1.25 (m=1.22, SD=0.02); LCI=1.45–1.54 (m=1.49, SD=0.04); HW/IOS=1.57–1.66 (m=1.63, SD=0.04); HW/TSL=1.33–1.36 (m=1.34, SD=0.01); POL/OOL=1.2–1.21 (m=1.20, SD=0.006); OOL/LOL=1.63–1.66 (m=1.65, SD=0.01); A1/r=4.16–4.28 (m=4.23, SD=0.06); A1/cl=0.83–0.85 (m=0.84, SD=0.01); TSL/ML=1.55–1.58 (m=1.56, SD=0.01); SW/SL=1.94–2.09 (m=2.03, SD=0.08); TSL/WW=1.04–1.13 (m=1.04, SD=0.05); m/st=5.33–5.62 (m=5.48, SD=0.14); HWW/HWS=1.77–2.0 (m=1.89, SD=0.11); T1W/T1+T2L=1.36–1.48 (m=1.41, SD=0.05); T3W/T3L=1.48–1.68 (m=1.57, SD=0.09); T3w/TSL=1.10–1.20 (m=1.17, SD=0.06)

MALE: Unknown.

Diagnosis. Most closely related to X. buccatus, differing in the more elongated metasoma, entirely sculptured frons, well developed fore and hind wings and less transverse mesoscutellum. Differs from X. cornutus in entirely sculptured frons and mesoscutum, less elongate metasoma and wider fore wing.


Xenomerus canariensis Huggert, 1979
Figures 29, 30, 32


Xenomerus hibernicus Mineo & O’Connor, 2009: 97. NEW SYNONYM, (original description).

FEMALE (n=16): Length=0.58–0.80 mm (m=0.68, SD=0.06).

Dark to light brown; radicle, A1 proximally, A2 distally, legs and metasoma lighter than head and mesosoma.

FCI=1.27–1.30 (m=1.29, SD=0.01); LCI=1.54–1.56 (m=1.54, SD=0.01); HW/IOS=1.56–1.60 (m=1.57, SD=0.01); head less than 1.5 times as wide as mesosoma (HW/TSL = 1.27–1.47, m=1.34, SD=0.05); facial striae not reaching midlevel of eye, exceeding frontal patch; frontal patch distinct; frons setae sparse, thin; central keel incomplete, sometimes reaching eye midlevel; POL less than 1.5 times as long as OOL (POL/OOL = 1.33–1.44, m=1.40, SD=0.05); OOL longer than LOL (OOL/LOL = 1.28–1.31, m=0.95, SD=0.08); hyperoccipital carina absent, vertex entirely reticulate, vertex sculpture extending to interocellar area, not extending anteriorly to frons, not merging with genal patch; A1 less than 5.0 times as long as radicle (A1/r = 3–3.37, m=3.19, SD=0.14), length almost equal to clava (A1/dl = 0.82–0.93, m=0.87, SD=0.03).

Epomial carina absent, cervical pronotal area smooth, with sparse setae; lateral pronotal area smooth with few crenulae above pronotal ventral projection; netron sulcus complete; netron striation not extending onto lateral pronotal area; pronotal suprahumerual and cervical sulci not foveolate; mesoscutum about 1.5 times as wide as long (TSL/ML = 1.59–1.64, m=1.62, SD=0.03); notaulus elongate, almost reaching anterior margin of mesoscutum, distance between posterior end of notauli nearly equal to the distance between posterior end of notaulus and posterolateral edge of mesoscutum; reticulate sculpture of mesoscutum not extending to lateral notaular area, internotaular area smooth basally; mesoscutellum about 2.0 times as wide as long (SW/SL = 2.00–2.27, m=2.14, SD=0.11); scuto-scutellar sulcus strongly reduced medially, 5–6 times as wide laterally as in the middle; mesoscutellum smooth, with sparse, long marginal setae; posterior scutellar sulcus not extending onto axillula; sternaus not separated from anterior row of foveae of mesopleural carina; mesopleural carina incomplete; sulcus along metapleural carina foveolate; metascutellum entirely striated, triangular, without lamella apically; propodeal lateral carinae inverted V-shaped, shafts straight; propodeal lateral and plical areas with few, marginal setae; marginal striation usually not extending medially, in some African specimens both areas entirely striated; posterior propodeal projection indistinct; mesoscutum distinctly wider than fore wing (TSL/WW = 1.21–1.42, m=1.27, SD=0.05); marginal vein less than 4 times as long as stigmal vein (m/st = 3.27–3.5, m=3.30, SD=0.07); hind wing slightly wider than marginal ciliae length (HW/HWS = 1.15–1.2 m=1.18, SD=0.02).

T1 two times as wide as T1+T2 length (T1W/T1+T2L = 1.93–2.01, m=1.99, SD=0.05); T3 more than 1.5 times as wide as long (T3W/T3L = 1.6–1.91, m=1.76, SD=0.10), about 1.2 times as wide as mesoscutum (T3W/TSL = 1.17–1.32, m=1.26, SD=0.05); costae on T3 not reaching 1/5 tergum; lateral patch of T3 absent; posterior patch of T3 reduced, nearly equal to width of 2–3 basal depressions; lateral and median patches on T4 present, not fused.

MALE (n=21): length=0.61–0.79 (m=0.69, SD=0.06); FCI=1.26–1.36, m=1.32, SD=0.02); LCI=1.34–1.51, m=1.45, SD=0.06); HW/IOS=1.5–1.65 (m=1.58, SD=0.05); HW/TSL = 1.28–1.37 (m=1.32, SD=0.02); facial striae exceeding eye midlevel; POL/OOL = 1.2–1.4, m=1.26, SD=0.09); OOL/LOL = 1.42–1.66 (m=1.64, SD=0.06); A1/r = 2.33–2.75 (m=2.51, SD=0.11); TSL/ML = 1.56–1.66 (m=1.60, SD=0.04); SW/SL = 1.92–2.27 (m=2.07, SD=0.15); TSL/WW = 1.16–1.35 (m=1.21, SD=0.05); m/st = 4.0–4.60 (m=4.33, SD=0.05); HW/PHS = 1.0–1.07 (m=1.03, SD=0.03); T1W/T1+T2L = 1.50–1.76, m=1.64, SD=0.06); T3W/TSL = 1.0–1.20 (m=1.12, SD=0.06).

Diagnosis. Most closely related to X. ergusonna, differing by POL/OOL, extension of vertex sculpture to interocellar area, absence of sharp hyperoccipital carina; more strongly diverging notauli; narrower hind and fore wings, length and angle of vein, longer marginal ciliae on hind wing.

**Xenomorpus comatus** Mikó & Masner, new species

**FEMALE** (Holotype): Length=1.26 mm.

- Black; mandible, interantennal process, radicle, A5–6, legs, excluding apical tarsomeres, yellow; tegula, A1–A4, A7–A12 brown.

  **FCI=1.13; LCI=2.00; HW/IOS=1.61;** head less than 1.5 times as wide as mesosoma (HW/TSL= 1.24); facial striae exceeding midlevel of eye along orbit; obscuring frontal patch; frons setae dense, setae thick, setal bases postulate; central keel complete; toruli triangle shorter than clypeus height; POL less than 2 times as long as OOL (POL/OOL=1.56); OOL longer than LOL (OOL/LOL=1.33); hyperoccipital carina present, blunt, not extending to orbit; vertex without sculpture except vertex patch with diameter equal to lateral ocellus; vertex setae denser behind POL area, setal bases postulate; genal patch absent; A1 less than 2.5 times as long as radial (A1/r =2.36), shorter than clava (A1/cl =0.86).

  Epomial carina present, diminishing medially; cervical pronatal area smooth, with scattered setae; lateral pronatal area dorsomedially reticulate, ventrolaterally smooth; netrion sulcus incomplete; pronotal suprahumeral sulcus diminishing medially, pronotal cervical sulcus complete; both sulci foveolate; mesoscutum more than 1.5 times as wide as long (TSL/ML=1.64); notaulus reaching transscutal line;
mesoscutum extending to lateral and internotaular areas, not reaching posterior margin of mesoscutum; mesoscutellum more than 2.0 times as wide as long (SW/SL=2.20); scuto-scuteellar sulcus 2 times as wide laterally as in the middle; mesoscutellum smooth, with dense setae, setal bases pustulate; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina nearly equal to foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae, maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus as long as width of posterior row of foveae of mesopleural carina; sulcus along metapleural carina foveolate; metascutellum sharply pointed; propodeal lateral carinae inverted Y-shaped, shafts slightly curved outward; propodeal lateral and plical areas obscured by pale, thick dense setae, setal bases pustulate; marginal striation extending medially; posterior propodeal projection indistinct; fore wing as wide as mesoscutum (TSL/W=1.05); marginal vein about 3 times as long as stigmal vein (m/st=3.10); hind wing more than 2 times as wide as marginal ciliae length (HWW/HWS=2.20).

T1 about 2 times as wide as T1+T2 length (T1W/T1+T2L=2.13); T3 slightly wider than mesoscutum (T3W/TSL=1.12); T3 longitudinally rugoso-punctate; lateral patch distinct; two times as long as wide; diameter of posterior patch of T3 nearly equal to width of one basal depression, indistinct; anterior 2/3 of T4 entirely reticulate, with a narrow smooth area medially.

Variability (n=18): Length=1.08–1.30 mm (m=1.21, SD=0.07); in smaller specimens pronotum, meso-, metapleuron, propodeum, and metasoma brown; sometimes A5–6 concolorous with clava; FCI=1.00–1.17 (m=1.12, SD=0.01); LCI=1.80–2.00 (m=1.85, SD=0.08); HW/IOS=1.54–1.63 (m=1.6, SD=0.02); HW/TSL=1.20–1.38 (m=1.30, SD=0.04); POL/OOL=1.4–1.68 (m=1.54, SD=0.07); OOL/LOL=1.30–1.45 (m=1.36, SD=0.05); A1/r=2.3–2.8 (m=2.58, SD=0.12); A1/cl=0.85–0.90 (m=0.88, SD=0.20); TSL/ML=1.60–1.82 (m=1.66, SD=0.065); SW/SL=2.00–2.28 (m=2.14, SD=0.09); sometimes maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus 2–3 times as wide as width of posterior row of foveae of mesopleural carina; TSL/WW=0.94–1.17 (m=1.12, SD=0.06); m/st=3.00–3.30 (m=3.12, SD=0.07); HW/HWS=2.20–2.71 (m=2.44, SD=0.14); T1W/T1+T2L=1.92–2.14 (m=2.06, SD=0.07); T3W/TSL=1.00–1.14 (m=1.04, SD=0.04).

MALE (n=12): length=1.15–1.29 (m=1.22, SD=0.05); A1–2 yellow to light brown, A3–12 light brown to dark brown; head wider (FCI=1.14–1.25, m=1.18, SD=0.03) and longer (LCI=1.59–1.60, m=1.69, SD=0.04); HW/IOS=1.47–1.57 (m=1.52, SD=0.03); HW/TSL=1.30–1.53 (m=1.37, SD=0.06); OOL longer (POL/OOL=1.20–1.35, m=1.30, SD=0.04); OOL/LOL=1.58–1.70, m=1.64, SD=0.04); A1/r=3.00–3.28 (m=3.12, SD=0.10); A3–A6 unbottled, A5 modified; A7–A11 double bottled, with distinct constrictions; flaggomeretes with few ventral microcilia; TSL/ML=1.44–1.59 (m=1.50, SD=0.04); SW/SL=2.00–2.20 (m=2.04, SD=0.07); TSL/WW=0.76–0.92 (m=0.85, SD=0.05); m/st=3.14–3.41 (m=3.25, SD=0.09); HW/HWS=2.25–2.66 (m=2.39, SD=0.15); metasoma longer (T1W/T1+T2L=1.50–1.71, m=1.62, SD=0.07); T3W/TSL=0.90–1.15 (m=0.97, SD=0.06); longitudinally rugulose sculpture less distinct.

Diagnosis. Differs from all other species of Xenomerus by the dense, thick setae on frons with setal bases pustulate. Most closely related to X. aureipes and X. watshami, differing by absence of netrion sulcus, few ventral microcilia on male flaggomeretes, more dense and thick setae on frons and mesosoma, POL/OOL ratio and longitudinally rugoso-punctate sculpture on T3.

Etymology. From the Latin coma, meaning hair of the head, referring the dense whitish setae located on the frons.


*Xenomerus cornutus* Kononova & Kozlov, 2001

Figures 31, 33

Female (Holotype): Length=0.71 mm.

- Brown; radicle, trochanters and tarsomeres, except apical brown tarsomeres, yellow.
- **FCI**=1.16; **LCI**=1.5; **HW/IOS**=1.61; head less than 1.5 times as wide as mesosoma (**HW/TSL**= 1.40); facial striae not reaching midlevel of eye, exceeding frontal patch; frontal patch distinct; frons setae sparse, thin; central keel incomplete; **POL** as long as **OOL** (**POL/OOL**=1.05); **OOL** more than 1.5 times as long as **LOL** (**OOL/LOL**=1.58); hyperoccipital carina absent, vertex entirely reticulate, vertex sculpture extending to interocellar area, merging posteriorly with genal patch; A1 less than 5.0 times as long as radicle (**A1/r**=4.20), shorter than clava (**A1/cl**=0.88).

- Epomial carina absent, cervical pronotal area smooth, with sparse setae, setal bases pustulate; lateral pronotal area smooth with few crenulae above pronotal ventral projection; netrion sulcus complete; netrion striation not extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci not foveolate; mesoscutum about 1.5 times as wide as long (**TSL/ML**=1.45); notaulus short, not exceeding transscutal line; distance between posterior end of notaulus more than two times as long as distance between posterior end of notaulus and posterolateral edge of mesoscutum; reticulate sculpture extending to inter and lateral notaular areas, not reaching posterior margin of mesoscutum; mesoscutellum about 2 times as wide as long (**SW/SL**=1.91); scuto-scutellar sulcus almost as wide medially as laterally; mesoscutellum smooth, with sparse marginal setae; posterior scutellar sulcus not extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; mesopleural carina incomplete; sulcus along metapleural carina foveolate; metascutellum triangular, only base striated, with a triangular, semitransparent lamella apically; propodeal lateral carinae inverted V-shaped, shafts straight; propodeal lateral area and plical area with dense setae, marginal striation extending medially; posterior propodeal projection indistinct; mesoscutum slightly

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**FEMALE** (Holotype): Length=0.71 mm.

- Brown; radicle, trochanters and tarsomeres, except apical brown tarsomeres, yellow.
- **FCI**=1.16; **LCI**=1.5; **HW/IOS**=1.61; head less than 1.5 times as wide as mesosoma (**HW/TSL**= 1.40); facial striae not reaching midlevel of eye, exceeding frontal patch; frontal patch distinct; frons setae sparse, thin; central keel incomplete; **POL** as long as **OOL** (**POL/OOL**=1.05); **OOL** more than 1.5 times as long as **LOL** (**OOL/LOL**=1.58); hyperoccipital carina absent, vertex entirely reticulate, vertex sculpture extending to interocellar area, merging posteriorly with genal patch; A1 less than 5.0 times as long as radicle (**A1/r**=4.20), shorter than clava (**A1/cl**=0.88).

- Epomial carina absent, cervical pronotal area smooth, with sparse setae, setal bases pustulate; lateral pronotal area smooth with few crenulae above pronotal ventral projection; netrion sulcus complete; netrion striation not extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci not foveolate; mesoscutum about 1.5 times as wide as long (**TSL/ML**=1.45); notaulus short, not exceeding transscutal line; distance between posterior end of notaulus more than two times as long as distance between posterior end of notaulus and posterolateral edge of mesoscutum; reticulate sculpture extending to inter and lateral notaular areas, not reaching posterior margin of mesoscutum; mesoscutellum about 2 times as wide as long (**SW/SL**=1.91); scuto-scutellar sulcus almost as wide medially as laterally; mesoscutellum smooth, with sparse marginal setae; posterior scutellar sulcus not extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; mesopleural carina incomplete; sulcus along metapleural carina foveolate; metascutellum triangular, only base striated, with a triangular, semitransparent lamella apically; propodeal lateral carinae inverted V-shaped, shafts straight; propodeal lateral area and plical area with dense setae, marginal striation extending medially; posterior propodeal projection indistinct; mesoscutum slightly
wider than fore wing (TSL/WW=1.14); marginal vein less than 5 times as long as stigmal vein (m/st=4.75); hind wing about as wide as marginal ciliae length (HWW/HWS=1.08).

T1 about 1.3 times as wide as T1+T2 length (T1W/T1+T2L=1.28); T3 1.5 times as wide as long (T3W/T3L=1.50), about 1.2 times as wide as mesoscutum (T3W/TSL=1.21); costae on T3 not exceeding 1/5 tergum; lateral patch present, reduced; posterior patch of T3 reduced, nearly equal to width of 2–3 basal depressions; lateral patch on T4 present, median patch absent.

**MALE** (n=1): antennae and legs, excluding apical brown tarsomeres; length=0.78; FCI=1.21; LCI=1.48; HW/IOS=1.6; HW/TSL=1.29; POL/OOL=1.0; OOL/LOL=2.0; A1/r=2.77; TSL/ML=1.42; SW/SL=1.78; TSL/WW=1.12; m/st=4.2; 4.66; HWW/HWS=1.07; T1W/T1+T2L=1.04; T3W/TSL=1.0.

**Diagnosis.** Differs from *X.calligetus* in ventrally smooth frons, posteriorly smooth mesoscutum, more elongate metasoma and narrower fore wing.


**Xenomerus ergenna Walker, 1836**

Figures 17, 20, 22, 25, 112


*Teleas Medon* Walker, 1836: 364. (original description); Brues, 1908. (junior synonym of *Xenomerus ergenna*); Graham, 1984: 91. (junior synonym of *Xenomerus ergenna* Walker).


*Xenomeris (Xenomeris) ergenna*: Hellén, 1971: 15. (description, subgeneric assignment, keyed).


*Trimorus curtum*: Kononova & Petrov, 1999: 21. **NEW SYNONYM** (original description); Kononova and Kozlov 2001 (description, keyed)

**FEMALE** (n=25): Length=0.65–0.91 mm (m=0.82, SD=0.11).

Dark brown to light brown; radicle, trochanters, A1 proximally, A2 distally, maxillary palp, all tarsomeres and tibiae apically usually lighter.

FCI=1.25–1.38 (m=1.31, SD=0.04); LCI=1.51–1.60 (m=1.56, SD=0.03); HW/IOS=1.50–1.56 (m=1.52, SD=0.02); head less than 1.5 times as wide as mesosoma (HW/TSL= 1.29–1.38, m=1.33, SD=0.03); facial striae not reaching midlevel of eye along inner orbit, exceeding frontal patch; frontal patch distinct; frons setae sparse, thin; central keel incomplete, sometimes reaching eye midlevel; POL more than two times as long as OOL (POL/OOL=2.00–2.11, m=2.06, SD=0.05); OOL nearly equal LOL (OOL/LOL=0.95–1.00, m=0.99, SD=0.02); hyperoccipital carina present, sharp, not extending to orbit, in some South African specimens blunt; vertex patch present; genal patch present, not merging with vertex sculpture; A1 less than 4 times as long as radical (A1/r=3.40–3.62, m=3.52, SD=0.09), almost equal to clava (A1/cl=0.89–0.96, m=0.92, SD=0.03).

Epomial carina absent, cervical pronotal area smooth, with sparse setae; lateral pronotal area with few crenulae above pronotal ventral projection; netrion sulcuses complete; netrion striation not extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci not foveolate; mesoscutum about 1.5 times as wide as long (TSL/ML=1.50–1.56, m=1.53, SD=0.02); notaulus elongate, almost reaching anterior margin of mesoscutum, distance between posterior end of notauali nearly two times as long as the distance between posterior end of notaulus and posterolateral edge of mesoscutum; reticulate sculpture of mesoscutum not extending to lateral notaular area, not reaching posterior margin of mesoscutum on internotaular area; mesoscutellum more than 2 times as wide as long (SW/SL=2.16–2.26, m=2.21, SD=0.05); scuto-scutellar
sulcus strongly reduced medially, 5–6 times as wide laterally as in the middle; mesoscutellum smooth, with sparse marginal setae; posterior scutellar sulcus not extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; mesopleural carina incomplete, diminishing above the dorsal part of postacetabular sulcus; sulcus along metapleural carina foveolate; metasomal carina triangular, entirely striated, without triangular, semitransparent lamella apically; propodeal lateral carinae inverted V-shaped, shafts straight; propodeal lateral area bare, plical area with few setae along lateral margin, marginal striation not extending medially; posterior propodeal projection indistinct; fore wing almost as wide as mesoscutum (TSL/WW=0.83–1.00, m=0.89, SD=0.09); marginal vein less than 4 times as long as stigmal vein (m/st=3.32–3.45 m=3.36, SD=0.08); hind wing less than two times as wide as marginal cilia length (HWW/HWS=1.66–1.85 m=1.77, SD=0.07).

T1 1.5–2 times as wide as T1+T2 length (T1W/T1+T2L=1.68–2.00, m=1.98, SD=0.11); T3 more than 1.5 times as wide as long (T3W/T3L=1.78–1.93, m=1.87, SD=0.04), more than 1.2 times as wide as mesoscutum (T3W/TSL=1.14–1.23, m=1.21, SD=0.04); costae on T3 not reaching 1/5 tergum; lateral patches absent; diameter of oblique posterior patch of T3 4 times as long as wide, length nearly equal to width of 7–8 basal depression, in some South African specimens strongly reduced, not longer than width of 2–3 basal depressions; lateral and median patches on T4 reduced, not fused.

**Male** (n=10): length=0.82–0.89 mm (m=0.85, SD=0.02); FCI=1.41–1.53, (m=1.46, SD=0.04); LCI=1.44–1.57, (m=1.50, SD=0.04); HWI/IOS=1.46–1.58 (m=1.51, SD=0.03); HW/TSL=1.28–1.39 (m=1.33, SD=0.04); facial striae exceeding eye midlevel; POL/OOL=1.90–2.16 (m=2.04, SD=0.07); OOL/LOL=1.00–1.14 (m=1.03, SD=0.05); A1/r=2.17–3.12 (m=2.96, SD=0.12); A5 modified; A7–A11 unibotted; TSL/ML=1.34–1.45 (m=1.40, SD=0.04); SW/SL=2.12–2.33 (m=2.22, SD=0.12); TSL/WW=0.64–0.78 (m=0.73, SD=0.03); m/st=3.58–3.75 (m=3.67, SD=0.07); HWW/HWS=1.80–2.00 (m=1.89, SD=0.05); T1W/T1+T2L=1.56–1.70, (m=1.62, SD=0.06); T3W/TSL=0.94–1.11 (m=1.03, SD=0.05); in smaller specimens patches on T4 reduced and marked by punctures.

**Diagnosis.** Differing from other members of egrenna group by POL two times as long as OOL, presence of hyperoccipital carina, vertex unsculpted posterior to hyperoccipital carina, wide fore and hind wings, extended posterior patch on T3.


Notes. The type specimen of Xenomerus ergenna is not available, presumably lost. On the original illustration from Walker (1836), however, the widened wings and the OOL/LOL ratio are distinct. In the Palaearctic region there is no other Xenomerus species having this character combination. Members of Xenomerus ergenna were reared from eggs of Dromius sp. (Carabidae, Dromiini) (Bin, 1981). Szabo (1966) erected a the genus Niteogryon with type species Trimorus medon Walker and with a new species N. latimetascatum. Hellén (1971) synonymised Niteogryon with Xenomerus. Graham (1984) synonymised Trimorus medon with Xenomerus ergenna. The type specimen of Trimorus medon has well developed hyperoccipital carina, POL 2x as long as OOL, smooth area posterior to the hyperoccipital carina, wider fore wings and enlarged posterior patch on T3. Based on these character states T. medon is conspecific with X. ergenna. The type specimen of Niteogryon medon Szabo 1966 is most similar to Trimorus iphias Nixon 1936 whereas Trimorus latimetascatum comb. nov. is most similar if not conspecific with Trimorus clavicornis (Cameron 1912).

Xenomerus feehani Mikó & Masner new species

Figures 86, 89, 91, 115

FEMALE (Holotype): Length=1.15 mm.

Dark brown; head, mesoscutum blackish; mandible, interantennal process, radicle, A1–A6, legs, including coxae, excluding apical tarsomeres, yellow.

FCI=1.16; LCI=1.57; HW/IOS=1.52; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.37); facial striae not reaching midlevel of eye along inner orbit, exceeding frontal patch; frontal patch distinct, not vertically elongated, not reaching eye midlevel; from setae sparse, thin; central keel incomplete, not reaching eye midlevel; toruli triangle shorter than clypeus height; POL as long as OOL (POL/OOL=1.07); OOL more than 1.5 times as long as LOL (OOL/LOL=1.75); hyperoccipital carina present, blunt, not extending to orbit;
vertex reticulate, sculpture extending to frons along inner orbit, interocellar area smooth; genal patch present, not merging with vertex sculpture; A1 more than 5 times as long as radicle (A1/r = 5.25), shorter than clava (A1/cl = 0.89).

Epomial carina present, diminishing medially; cervical pronotal area smooth, with scattered setae; lateral pronotal area smooth with few crenulae above pronotal ventral projection; netrion sulcus complete; netrion suprahumeral and cervical sulci complete, foveolate; mesoscutum less than 1.5 times as wide as long (TSL/ML = 1.37); notaulus almost reaching transscutal line; reticulate sculpture of mesoscutum extending to lateral notaular area, not reaching posterior margin of mesoscutum; internotaular area smooth; mesoscutellum less than 2 times as wide as long (SW/SL = 1.75); scuto-scutellar sulcus slightly diminishing medially, 1.5–2 times as wide laterally as in the middle; mesoscutellum smooth, with sparse, marginal setae; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesoscutal carina 3–4 times as wide as foveae width of postacetabular sulcus; mesopleural carina complete, with complete anterior row of foveae, posterior row of foveae of mesopleural carina diminishing and reduced posteroventrally; sulcus along metapleural carina foveolate; metascutellum sharply pointed; propodeal lateral carinae inverted Y-shaped, shafts slightly curved outward; propodeal lateral area and plical area obscured by pale, sparse setae, marginal striation extending medially; posterior propodeal projection distinct, well developed; fore wing wider than mesoscutum (TSL/WW = 0.82); marginal vein 3.5 times as long as stigmal vein (m/st = 3.20); hind wing more than two times as wide as marginal ciliae length (HWW/HWS = 2.3).

T1 concave dorsally, less than 1.5 times as wide as T1+T2 length (T1W/T1+T2L = 1.21); T3 less than 1.5 times as wide as long (T3W/T3L = 1.22), as wide as mesoscutum (T3W/TSL = 1.07); costae on T3 exceeding apical setae; lateral patches distinct, 3–4 times as long as wide; diameter of posterior patch of T3 nearly equal to width of basal depression; posterior T3 with coriaceous sculpture; anterior half of T4 reticulate, sculpture almost reaching posterior margin of tergum submedially.

**Variability** (n=4): Length=1.14–1.17 mm (m=1.15, SD=0.01); FCI=1.14–1.16 (m=1.16, SD=0.01); LCI=1.57 (m=1.57, SD=0.00); HW/IOS=1.50–1.53 (m=1.51 SD=0.01); HW/TSL=1.34–1.37 (m=1.35, SD=0.01); POL/OOL=0.93–1.07 (m=1.01, SD=0.05); OOL/LOL=1.75–2.00 (m=1.87, SD=0.04); A1/r=5.00–5.37 (m=5.21, SD=0.15); A1/cl=0.82–0.89 (m=0.84, SD=0.03); TSL/ML=1.37–1.44 (m=1.41, SD=0.04); SW/SL=1.75–1.84 (m=1.80, SD=0.03); TSL/WW=0.82–0.83 (m=0.83, SD=0.01); m/st=3.50–3.68 (m=3.56, SD=0.08); HWW/HWS=2.30–2.50 (m=2.43, SD=0.11); T1W/T1+T2L=1.20–1.21 (m=1.20, SD=0.04); T3W/T3L=1.22–1.23 (m=1.22, SD=0.004); T3W/TSL=1.06–1.07 (m=1.07, SD=0.006).

**Male**: Unknown.

**Diagnosis.** Most closely related to *X. kalocsai*, differing by POL/OOL, extension of frontal patch and facial striae, sculpture of posterior T3, color of coxae, foveolate sulcus along metapleural carina.

**Etymology.** Named after T. Feehan, the collector of the holotype and one of the paratypes.


Holotype is deposited in CMNH. Paratypes are deposited in CNCI (3) and USNM (1).

*Xenomerus gloriosus* Mikó & Masner new species

**Figures 81, 82**

**Female** (Holotype): Length=1.28 mm.

Dark brown, radicle, A1 proximally, A5–6, legs excluding coxa and apical dark brown tarsomere of all legs, yellow.
Xenomerus guinensis Mikó & Masner new species
Figures 45, 49

**FEMALE** (Holotype): Length=1.07 mm.

Yellowish-brown (ochre); A2–A12, head, excluding interantennal process, mesoscutellum and metasoma brown, pronotum, excluding yellowish netrion reddish.

FCI=1.26; LCI=1.93; HW/IOS=1.77; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.33); facial striae not exceeding midlevel of eye, obscured frontal patch; frontal patch indistinct; frons setae sparse, thin; central keel incomplete; toruli triangle shorter than clypeus height; POL about 1.5 times as long as OOL (POL/OOL=1.55); OOL less than 1.5 times as long as LOL (OOL/LOL=1.28); hyperoccipital carina present, blunt, extended to orbit; vertex entirely reticulate, sculpture not extending anteriorly to frons; genal patch present, separated from vertex sculpture; A1 more than 5 times as long as radicle (A1/r=5.75), as long as clava (A1/cl=1.0); A4 distinctly shorter than A3.

Epomial carina present, almost reaching pronotal suprahumeral sulcus; cervical pronotal area smooth, with sparse setae; lateral pronotal area reticulate dorsally; netrion sulcus complete, netrion as wide as fore coxa; pronotal suprahumeral and cervical sulci complete, foveolate; mesoscutum about 1.5 times as wide as long (TSL/ML=1.47); notaular normal, almost reaching transcucal line; reticulate sculpture of mesoscutum slightly extending to inter and lateral notaular areas, not reaching posterior margin; mesoscutellum less than 2 times as wide as long (SW/SL=1.85); scuto-scuteal sulcus distinctly diminishing medially, 4–5 times as wide laterally as in the middle; mesoscutellum smooth, with sparse, long marginal setae; posterior scutellar sulcus not extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina equal to foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae; foveae of mesepimeral sulcus longitudinally elongated, 2.3 times as wide as high, distance between mesepimeral sulcus and posterior row of fovea of mesopleural carina equal to width of posterior row of foveae; sulcus along metapleural carina foveolate; metascutellum bluntly triangular, metanotal spine reduced; propodeal lateral carinae inverted Y-shaped, shafts distinctly curved outward; propodeal lateral and plical areas obscured by pale, dense setae, marginal striation extending medially; posterior propodeal projection indistinct; mesoscutum almost as wide as fore wing (TSL/WW=0.92); marginal vein less than 3.5 times as long as stigmal vein (m/st=3.24); hind wing less than two times as wide as marginal cilia length (HWW/HWS=1.75).

T1, slightly wider than T1+T2 length (T1W/T1+T2L=1.18); T3 less than 1.5 times as wide as long (T3W/T3L=1.29), as wide as mesoscutum (T3W/TSL=1.05); costae on T3 not extending to 1/5 of tergum; lateral patch of T3 distinct, elongate, 4–5 times as long as wide; posterior patch of T3 nearly equal to width of one basal depressions; anterior half of T4 reticulate with narrow, smooth median area.

**MALE**: unknown.

**Diagnosis.** Most closely related to *X. bickeli*, differing by A4 distinctly shorter than A3, presence of frontal patch, POL/OOL, wider netrion, reduced metanotal spine and presence of posterior patch on T3.

**Etymology.** The name refers to the type locality.

**Material examined.** *Holotype female:* AUSTRALIA: Queensland, Mount Glorious, 28.II.1984, L.Masner [ANIC:####].

Holotype is deposited in ANIC.
Epomial carina absent; cervical pronotal area smooth, with scattered setae and reticulate sculpture along lateral and dorsal margin; lateral pronotal area reticulate dorsally, netrion sulcus incomplete; pronotal suprahumeral sulcus diminishing medially, foveolate; pronotal cervical sulcus not foveolate; anterior tip of pronotum reduced; mesoscutum about 2 times as wide as long (TSL/ML=1.82), with dense setae, sculpture reaching posterior margin; notaulus absent; mesoscutellum 2 times as wide as long (SW/SL=2.02); scuto-scutellar sulcus slightly diminishing medially, about 1.5 times as wide laterally as in the middle; mesoscutellum smooth, with dense setae laterally, smooth medially; posterior scutellar extension onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina two times as long as fovea width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae, maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus 1.5 times as long as width of posterior row of foveae; sulcus along metapleural carina complete; metascutellum bluntly triangular, entirely striated; metascutellum smooth; propodeal lateral carinae S-shaped; propodeal lateral area and plical area obscured by sparse setae, marginal striation extending medially; posterior propodeal projection indistinct; hind wing more than 2 times as wide as marginal ciliae length (HWW/HWS=2.28); m/st=3.50; T1 less than 1.5 times as wide as T1+T2 length (T1W/T1+T2L=1.44); T3 about as wide as mesoscutum (T3W/TSL=0.96); basal depressions narrow; costae exceeding 1/2 length of tergum; lateral patch absent; diameter of posterior patch of T3 nearly equal to width of two basal depressions, distinct; T3 with sparse setae laterally; apical setae of T3 elongate, more than two times as long as lateral setae of tergum; lateral patch on T4 present, median patch absent.

**Diagnosis.** *Xenomerus guinensis* shares the incomplete central keel with *X. ochraceus*, differs from it in sparse setae on frons, thin basal depressions and long costae on T3 exceeding middle of tergum.

**Etymology.** The name of the species refers to the type locality.

**Material examined.** Holotype female: PAPUA NEW GUINEA: East New Britain, Baining Mountains, Raunsepna, 30.VI–28.VII.1999, C.Mitparingi, MT [CNCI:23915]. Paratypes: Madang Province, Nagad, -5.116,145.8166, 6.VI.2006, J.Hrcek, YPT, 1; Madang, Morox, -4.2666,144.9666, 100m, 1–18.VIII.2006, V.Iwam, YPT. Holotype and paratypes are deposited in CNCI.

*Xenomerus halteratus* Mikó & Masner, new species

**Figure 12, 52, 54, 56, 58, 111**

**FEMALE (Holotype):** Length=1.02 mm.

Orange yellow, A3–A12, interocellar area, mesoscutellum, metasoma apically brown.

FCI=1.20; LCI=1.54; HW/IOS=1.70; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.36); facial striae extending to vertex obscuring frontal patch; frontal patch distinct; frons setae dense, thin, setal bases pustulate, median smooth area above interantennal process 4–5 times as wide as clypeus width; frons above median smooth area rugulous; central keel complete; toruli triangle shorter than clypeus height, not reaching eye midlevel; POL shorter than OOL (POL/OOL=0.72); OOL about 2.5 times as long as LOL (OOL/LOL=2.57); hyperoccipital carina present, blunt, not extending to inner orbit; vertex entirely granulose, sculpture extending to gena and obscuring genal patch; A1 more than 7 times as long as radicle (A1/r=7.14), about as long as clava (A1/cl=1.14).

Epomial carina absent; cervical pronotal area with transverse crenulae, lateral pronotal area coriaceous, cells of coriaceous sculpture in vertical rows; Netrion sulcus complete; netrion sculpture not extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci not foveolate; mesoscutum more than 1.5 times
as wide as long (TSL/ML=1.81); notaulus shortened, not reaching transscutal line; mesoscutum with dense setae, granulose sculpture reaching posterior margin; mesoscutellum more than 2 times as wide as long (SW/SL=2.10); scuto-scutellar sulcus slightly diminishing, 2 times as wide laterally as in the middle; mesoscutellum coriaceous anteriorly, with dense, thin setae; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina 2–3 times as long as foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae, maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus three times as long as width of posterior row of foveae of mesopleural carina; epicoxal and lower part of metapleural sulci separated; sulcus along metapleural carina foveolate; metascutellum bluntly triangular, basal striation extending apically; propodeal lateral carinae inverted V-shaped, shafts slightly curved inward; propodeal lateral and plical areas obscured by pale, dense setae, setal bases pustulate; marginal striation extending medially; posterior propodeal projection distinct; fore and hind wings reduced.

T1 more than 2.5 times as wide as T1+T2 length (T1W/T1+T2L=2.66); T3 as wide as mesoscutum (T3W/TSL=1.03), costae on T3 reaching apical 1/3 of tergum; posterior 2/3 of tergum reticulate, lateral and posterior patches indistinct, obscured by reticulate sculpture; T4 entirely reticulate.

Variability (n=9): Length=0.92–1.09 mm (m=0.99, SD=0.06); in smaller specimens body lighter; FCI=1.18–1.27 (m=1.22, SD=0.03); LCI=1.54–1.77 (m=1.65, SD=0.07); HW/IOS=1.57–1.77 (m=1.68, SD=0.06); HW/TSL=1.32–1.41 (m=1.37, SD=0.03); POL/OOL=0.64–0.75 (m=0.70, SD=0.07); OOL/LOL=2.40–2.66 (m=2.55, SD=0.09); A1/r=5.75–7.33 (m=6.53, SD=0.54); A1/cl=1.00–1.16 (m=1.10, SD=0.03); TSL/ML=1.64–1.83 (m=1.72, SD=0.08); SW/SL=2.0–2.25 (m=2.14, SD=0.10); one specimen fully winged, TSL/WW=1.17; m/st=4.28; HW/HWS=1.53; T1W/T1+T2L=1.25–2.66 (m=1.88, SD=0.48); T3W/TSL=0.93–1.11 (m=1.03, SD=0.06).

MALE: unknown.

Diagnosis. Most closely related to X. melleus, differing in the rugulose frons, shortened wing and complete mesopleural carina. Differs from X. rugifrons by shorter toruli triangle, shorter radicle, simple pronotal suprahumeral sulcus, shorter notaulus, netrion striation not extending onto lateral pronotal area, bluntly triangular metascutellum, reduced wings, posteriorly reticulate T3 and entirely sculptured T4.

Etyymology. The species name refers to the reduced wings.


Other material examined. Queensland, 630km. Mount Glorious National Park, 28.II.1984, L.Masner, Tropical rain & sclerophyl forest, 1♀, (on slide). Holotype is deposited in ANIC. Paratypes are deposited in ANIC (2) and CNCI (26).

Comments. Only one specimen (NSW) has well developed wings.

Xenomerus hilleri Mikó & Masner, new species

Figures 101, 102

MALE (Holotype): Length=1.27 mm.

Dark brown, radicle, A1, legs excluding coxae and apical dark brown tarsomeres yellow.

FCI=1.24; LCI=1.64; HW/IOS=1.55; head less than 1.5 times as wide as mesosoma (HW/TSL=1.31); facial striae, reaching midlevel of eye, strongly diminishing dorsally, parallel on frons, obscuring frontal patch; frontal patch distinct; frons setae sparse, thin; central keel complete, strongly diminishing dorsally;
toruli triangle shorter than clypeus height; POL more than 1.5 times as long as OOL ($\text{POL/OOL}=1.75$); OOL less than 1.5 times as long as LOL ($\text{OOL/LOL}=1.28$); hyperoccipital carina present, blunt, not extending to inner orbit; vertex entirely reticulate, sculpture slightly extending anteriorly to frons; genal patch present, separated from vertex sculpture; A1 less than 5 times as long as radicle ($A1/r=4.66$), A5 not modified, A3–A6 unbottled, A7–11 dibottled.

Epomial carina present, diminishing medially; cervical and lateral pronotal areas smooth; netrion sulcus complete, netrion as wide as fore coxa; pronotal suprahrenheital and cervical sulci complete, foveolate; mesoscutum less than 1.5 times as wide as long ($\text{TSL/ML}=1.37$); notaulus normal, almost reaching transscutal line; reticulate sculpture of mesoscutum not extending to inter and lateral notaular areas; mesoscutellum 2 times as wide as long ($\text{SW/SL}=2.04$); scuto-scutellar sulcus distinctly diminishing medially, 4–5 times as wide laterally as in the middle; mesoscutellum smooth, with sparse, long marginal setae; posterior scutellar sulcus not extending onto axillula; sternaules not separated from anterior row of foveae of mesopleural carina; mesopleural carina incomplete; foveae of mesepimeral sulcus transversely elongated; sulcus along metapleural carina foveolate; metascutellum bluntly triangular, metanotal spine reduced; propodeal lateral carinae inverted V-shaped, shafts distinctly curved outward; propodeal lateral and plical areas obscured by dense setae, marginal striation extending medially; posterior propodeal projection indistinct; fore wing distinctly wider than mesoscutum ($\text{TSL/WW}=0.72$); marginal vein more than 3.5 times as long as stigmal vein ($\text{m/st}=3.84$); hind wing about 1.5 times as wide as marginal cilia length ($\text{HWW/HWS}=1.66$).

$T_1$, slightly wider than $T_1+T_2$ length ($\text{T1W/T1+T2L}=1.18$); $T_3$ less than 1.5 times as wide as long ($\text{T3W/T3L}=1.30$), about as wide as mesoscutum ($\text{T3W/TSL}=0.90$); costae on $T_3$ not extending to 1/5 of tergum; lateral patch distinct, elongate, 4–5 times as long as wide; posterior patch of $T_3$ nearly equal to width of one basal depression; lateral patch on $T_4$ present, median patch marked by punctures.

**FEMALE**: Unknown.

**Diagnosis.** Most closely related to *X. gloriosus*, differing by the incomplete mesopleural carina.

**Etymology.** The name refers to the collector of the species, T. Hiller.


Holotype is deposited in ANIC.

*Xenomerus kalocsai* Mikó & Masner, new species

Figures 15, 87, 88, 90

**FEMALE** (Holotype): Length=0.96 mm.

Dark brown; mandible, interantennal process, radicle, A1 proximally, trochanters, tibiae, tarsomeres except dark brown apical tarsomeres, light brown.

$\text{FCI}=1.18$; $\text{LCI}=1.61$; $\text{HW/IOS}=1.51$; head less than 1.5 times as wide as mesosoma ($\text{HW/TSL}=1.32$); facial striae not reaching midlevel of eye along inner orbit, not exceeding frontal patch; frontal patch distinct, vertically elongated, reaching eye midlevel; frons setae sparse, thin; central keel incomplete, not reaching eye midlevel; toruli triangle shorter than clypeus height; POL less than 1.5 times as long as OOL ($\text{POL/OOL}=1.46$); OOL almost 1.5 times as long as LOL ($\text{OOL/LOL}=1.44$); hyperoccipital carina present, blunt, not extending to inner orbit; vertex reticulate; genal patch present, separated from vertex sculpture; A1 more than 6.0 times as long as radicle ($A1/r=6.50$), shorter than clava ($A1/cl=0.82$).

Epomial carina present, diminishing medially; cervical pronotal area smooth, with scattered setae; lateral pronotal area near epomial carina reticulate, with few crenulae above pronotal ventral projection; netrion sulcus complete; netrion sculpture not extending onto lateral pronotal area; pronotal suprahrenheital and cervical sulci complete, foveolate; mesoscutum less than 1.5 times as wide as long ($\text{TSL/ML}=1.34$); notaulus...
normal, reaching transscutal line; reticulate sculpture of mesoscutum extending to lateral and internotaular areas; mesoscutellum less than 2 times as wide as long (SW/SL = 1.88); scuto-scutellar sulcus distinctly diminishing medially, 4 times as wide laterally as in the middle; mesoscutellum smooth, with sparse setae; posterior scutellar sulcus not extending onto axillula; sterna not separated from anterior row of foveae of mesopleural carina, distance between postacetabular sulcus and anterior row of foveae of mesopleural carina 3–4 times as wide as foveae width of postacetabular sulcus; mesopleural carina complete, with complete anterior row of foveae, posterior row of foveae strongly diminishing and reduced posterovertrally; sulcus along metapleural carina not foveolate; metascutellum sharply pointed; propodeal lateral carinae inverted V-shaped, shafts slightly curved outward; propodeal lateral and plical areas obscured by pale, sparse setae, marginal striation extending medially; posterior propodeal projection distinct; fore wing wider than mesoscutum (TSL/WW = 0.85); marginal vein less than 3.5 times as long as stigmal vein (m/st = 3.2); hind wing two times as wide as marginal cilia length (HWW/HWS = 2).

T1 concave dorsally, about 1.5 times as wide as T1+T2 length (T1W/T1+T2L = 1.47); T3 1.5 times as wide as long (T3W/T3L = 1.5), wider than mesoscutum (T3W/TSL = 1.125), costae on T3 exceeding middle of tergum, not exceeding apical setae; lateral patches distinct, 3–4 times as long as wide; diameter of posterior patch of T3 nearly equal to width of one basal depression; posterior T3 without coriaceous sculpture; lateral and median patches present, not fused.

**Variability**

(n=10): Length=0.96–1.32 mm (m=1.04, SD=0.12); head, mesosoma and metasoma black in larger specimens; FCI=0.98–1.18 (m=1.14, SD=0.06); LCI=1.50–1.67 (m=1.58, SD=0.05); HW/IOS=1.44–1.57 (m=1.51, SD=0.04); HW/TSL=1.26–1.35 (m=1.36, SD=0.04); in smaller specimens facial striae extending along inner orbit near orbital patch; in larger specimens central keel almost reaching median ocellus POL/OOL=1.38–1.58 (m=1.47, SD=0.08); OOL/LOL=1.23–1.44 (m=1.35, SD=0.07); in larger specimens from Uganda vertex sculpture indistinct; A1/r=5.5–6.7 (m=6.27, SD=0.4); A1/cl=0.84–0.92 (m=0.88, SD=0.02); TSL/ML=1.33–1.42 (m=1.36, SD=0.03); SW/SL=1.76–1.88 (m=1.83, SD=0.05); in larger specimens anterior row of foveae of mesopleural carina present posterovertrally TSL/WW=0.82–0.92 (m=0.86, SD=0.03); m/st=3.26–3.32 (m=3.28, SD=0.05); HWW/HWS=1.92–2.16 (m=2.05, SD=0.08); T1W/T1+T2L=1.4–1.56 (m=1.45, SD=0.05); T3W/T3L=1.42–1.54 (m=1.47, SD=0.04); T3W/TSL=1.12–1.26 (m=1.17, SD=0.05), in larger specimens costae extending to lateral patch on T3.

**MALE:** Unknown.

**Diagnosis.** Most closely related to *X. feehani*, differing by POL/OOL, extension of frontal patch and facial striae, sculpture of posterior T3, color of coxae, reduction of posterior row of foveae of mesopleural carina and foveolate sulcus along metapleural carina.

**Etymology.** Named after Béla Kalocsa, who was the first teacher in biology of the senior author.


Holotype is deposited in CNCI. Paratypes are deposited in BMNH (2), CNCI (10) and CMNH (1).

*Xenomerus laticeps* Dodd, 1916

Figures 10, 74, 75, 77, 79

**FEMALE** (n=5): Length= 0.99–1.18mm (m=1.11, SD=0.08).

Dark brown; head, mesoscutum blackish; mandible, apex of interantennal process, radicle, legs excluding hind brown tarsomeres yellow, antenna dark brown.

**FCI**=1.14–1.21 (m=1.17, SD=0.02); **LCI**=1.74–1.78 (m=1.77, SD=0.01); **HW/IOS**=1.50–1.62, m=1.56 SD=0.04; head almost 1.5 times as wide as mesosoma (**HW/TSL**=1.41–1.52, m=1.46, SD=0.05); facial striae exceeding middle of eye, parallel on frons, obscuring frontal patch; frontal patch indistinct; frons setae sparse, thin; central keel complete; toruli triangle shorter than clypeus height; POL as long as OOL (POL/ OOL=0.95–1.10, m=1.03, SD=0.05); OOL about 2 times as long as LOL (OOL/LOL=2.00–2.10, m=2.04, SD=0.06); hyperoccipital carina absent; sometimes vertex finely reticulate, vertex sculpture merges with vertex patch, sometimes only vertex patch present, vertex smooth posterior to POL; genal patch present; A1 about 5 times as long as radicle (A1/r=5.00–5.62, m=5.18, SD=0.25), about as long as clava (A1/cl=0.94– 1.10, m=1.01, SD=0.05).

Epominal carina absent, cervical and lateral pronotal areas smooth, bare; netrion sulcus absent; netrion sculpture extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci complete, foveolate; mesoscutum about 1.5 times as wide as long (**TSL/ML**=1.54–1.59, m=1.57, SD=0.02); notaulus normal, almost reaching transscutal line; reticulate sculpture of mesoscutum not extending to lateral and internotaular areas; mesocutellum more than 2 times as wide as long (**SW/SL**=2.20–2.50, m=2.33, SD=0.13); scuto- cutellar sulcus diminishing medially, 4–5 times as wide laterally as in the middle; mesocutellum smooth, with sparse, long marginal setae; posterior scutellar sulcus not extending onto axillula; sternausts not separated from anterior row of foveae of mesopleurale carina; distance between postacetabular sulcus and anterior row of foveae of mesopleurale carina equal to foveae width of postacetabular sulcus; mesopleurale carina complete, with complete rows of foveae; foveae of mesepimeral sulcus not elongated, 1–1.5 times as long as wide; sulcus along metapleural carina foveolate; metascutellum sharply pointed, spine elongated; propodeal lateral carinae inverted Y-shaped, shafts distinctly curved outward; propodeal lateral area and plical area obscured by pale, dense setae, setal bases pubescent, marginal striation not extending medially; posterior propodeal projection indistinct; fore wing about as wide as mesoscutum (**TSL/WW**=0.93–1.08, m=0.98, SD=0.06); marginal vein 3 times as long as stigmal vein (**m/st**=2.9–3.1, m=3.0, SD=0.07); hind wing about two times as wide as marginal ciliae length (**HW/HWS**=1.86–2.14, m=1.98, SD=0.10).

T1, less than 1.5 times as wide as T1+T2 length (**T1W/T1+T2L**=1.23–1.48, m=1.32, SD=0.09); T3 about as wide as long (**T3W/T3L**=0.97–1.01, m=1.0, SD=0.01), as wide as mesoscutum (**T3W/TSL**=0.97–1.01, m=1.0, SD=0.01); costae on T3 reaching 1/2 of tergum medially; lateral patch distinct, reduced; diameter of posterior patch of T3 nearly equal to width of two basal depressions, sometimes posterior and lateral patches more extended, diameter of posterior patch equal with 4 basal depressions; lateral patch on T4 present, median patch marked by punctures.

**MALE:** (n=5): **FCI**=1.25–1.31 (m=1.26, SD=0.02); **LCI**=1.54–1.74 (m=1.63, SD=0.06); **HW/IOS**=1.41– 1.51, (m=1.46 SD=0.03); **POL/OOL**=0.81–0.95 (m=0.89, SD=0.05); **OOL/LOL**=2.27–2.50 (m=2.38, SD=0.08); A1/r=4.1–4.4 (m=4.22, SD=0.14); A5 not modified, A2–A6 unibottled, A7–A11 dibottled, flaggllomeres with few ventral microcilia; **SW/SL**=2.00–2.11 (m=2.05, SD=0.04); **TSL/WW**=0.80–0.96 (m=0.86, SD=0.07); **T1W/T1+T2L**=1.16–1.24 (m=1.23, SD=0.05).

**Diagnosis.** Most closely related to *X. variipes*, differing by the presence of the vertex patch, few ventral microcilia on male flaggillomeres, finely reticulate mesoscutum of females, absence of netrion sulcus, less transverse fovea of mesepimeral sulcus and sharply pointed metascutellum with elongate metanotal spine.

**Material examined.** **Holotype female:** AUSTRALIA: New South Wels, (original det labels: “*Xenomerus, laticeps* Dodd ♀ type” (1. label); “I. 5428, *Xenomerus, laticeps* Dodd, n.s Wels, also slide” (2. Label).

**Other material examined.** AUSTRALIA: Australian Capital Territory, Canberra, Black Mountain, - 35.2666, 149.01, 22–29XI.1998, G.A.P.Gibson, MT, 1♂; Australian Capital Territory, Canberra, Black Mountain, - 35.2666, 149.01, 30XI–06.XII.1998, G.A.P.Gibson, MT, 1♂; Australian Capital Territory, Canberra, Black Mountain, - 35.2666, 149.01, 07–13.XII.1998, G.A.P.Gibson, YPT, 1♂; New South Wels, Royal National Park, 20km. south of Sydney, 30m, 5–14.VI.1978. S.N.Peck, dry sclerophyl forest edge, MT,

Holotype is deposited in SAMA.

Xenomerus malawi Mikó & Masner, new species

Figure 85

FEMALE (Holotype): Length=1.50 mm.

Dark brown; head, mesonotum blackish; mandible, interantennal process, radicle, trochanteres, tibiae and tarsi, except light brown apical tarsomeres, yellow; coxae, femora, antenna light brown.

FCI=1.13; LCI=1.70; HW IOS=1.59; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.28); facial striae not reaching midlevel of eye along inner orbit, exceeding and partly obscuring frontal patch; frontal patch distinct, not vertically elongated, not reaching eye midlevel; frons setae sparse, thin; central keel incomplete, not reaching eye midlevel; toruli triangle shorter than clypeus height; POL about as long as OOL (POL/OOL=0.93); OOL more than 1.5 times as long as LOL (OOL/LOL=1.66); hyperoccipital carina present, blunt, not extending to inner orbit; vertex reticulate; genal patch present, merging with vertex sculpture; A1 more than 5 times more than as long as radicle (A1/r=5.33), nearly equal to clava (A1/cl=0.96).

Epomial carina present, diminishing medially; cervical pronotal area smooth, with scattered setae, setal bases postulate; lateral pronotal area near epomial carina finely coriaceous, above pronotal ventral projection crenulate; netrion sulcus complete; netrional sculpture not extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci complete, foveolate, pronotal suprahumeral sulcus strongly diminishing medially; mesoscutum less than 1.5 times as wide as long (TSL/ML=1.34); notaulus normal, almost reaching transscutal line; reticulate sculpture of mesoscutum extending to lateral and inter notaular areas, more transverse on internotaular area; mesoscutellum less than 2 times as wide as long (SW/SL=1.87); scutoscutellar sulcus slightly diminishing medially, 1.5–2 times as wide laterally as in the middle; mesoscutellum crenulate anteriorly, with sparse, marginal setae; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina 2–3 times as wide as foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae; sulcus along metapleural carina foveolate; metascutellum sharply pointed; propodeal lateral carinae inverted Y-shaped, shafts slightly curved outward; propodeal lateral area and plical area obscured by pale, sparse setae, marginal striation extending medially; posterior propodeal projection distinct; fore wing distinctly wider than mesoscutum (TSL/WW=0.83); marginal vein more than 3.5 times as long as stigmal vein (m/st=3.46); hind wing about 3.5 times as wide as marginal cilia length (HWW/HWS=2.20).

T1 with small hump anteriorly, less than 1.5 times as wide as T1+T2 length (T1W/T1+T2L=1.12); T3 less than 1.5 times as wide as long (T3W/T3L=1.26), as wide as mesoscutum (T3W/TSL=1.07); costae on T3 exceeding level of apical setae; lateral patch distinct, extending medially almost as wide as long diameter of posterior patch of T3 equal to width of 2–3 basal depressions; posterior T3 without coriaceous sculpture; anterior half of T4 entirely reticulate.

MALE: Unknown

Diagnosis. Most closely related to X. feehani, differing in anteriorly crenulate mesoscutellum, color of coxae, extension of lateral patch on T3, sculpture of posterior T3.
Etymology. Named after the type locality.


Holotype is deposited in CMNH.

Xenomerus melikai Mikó & Masner, new species
Figure 73

FEMALE (Holotype): Length=1.22 mm.

Dark brown; apex of interantennal process, radicle, A1–A6, legs including coxae, excluding light brown apical tarsomeres yellow, metasoma light brown.

FCI=1.12; LCI=1.64; HW/IOS=1.56; head less than 1.5 times as wide as mesosoma (HW/TSL=1.32); facial striae exceeding midlevel of eye, parallel on frons, obscuring frontal patch; frontal patch indistinct; frons setae sparse, thin; central keel complete; toruli triangle shorter than clypeus height; POL as long as OOL (POL/OOL=1.05); OOL 2 times as long as LOL (OOL/LOL=2.0); hyperoccipital carina present, extending to inner orbit; vertex smooth; genal patch absent; A1 more than 7 times as long as radicle (A1/r=7.25), about as long as clava (A1/cl=1.03).

Epomial carina present, reaching pronotal suprahumeral sulcus; cervical pronotal area smooth, with scattered setae, setal bases pustulate; netrion sulcus absent; netrion sculpture extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci complete, foveolate; mesoscutum more than 1.5 times as wide as long (TSL/ML=1.63); notaulus short, about two times as long as wide; reticulate sculpture of mesoscutum not extending to lateral and internotaular areas; mesoscutellum 2.0 times as wide as long (SW/SL=2.04); scuto-scctellar sulcus slightly diminishing medially, 2 times as wide laterally as in the middle; mesoscutellum smooth, with sparse, long marginal setae; posterior scutellar sulcus not extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina equal to foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae; foveae of mesepimeral sulcus not longer than wide; sulcus along metapleural carina foveolate; metascutellum sharply pointed, spine short; propodeal lateral carinae inverted Y-shaped, shafts distinctly curved outward; propodeal lateral area and plical area obscured by pale, dense setae, setal bases pustulate, marginal striation extending medially; posterior propodeal projection indistinct; fore wing about as wide as mesoscutum (TSL/WW=0.98); marginal vein 3 times as long as stigmal vein (m/st=3.11); hind wing less than two times as wide as marginal ciliae length (HWW/HWS=1.87).

T1 less than 1.5 times as wide as T1+T2 length (T1W/T1+T2L=1.35); T3 about 1.5 times as wide as long (T3W/TSL=1.46), as wide as mesoscutum (T3W/TSL=0.98); costae on T3 reaching apical 1/5 of tergum medially; lateral patches distinct, reduced; diameter of posterior patch of T3 nearly equal to width of one basal depressions; lateral patch on T4 present; median patch marked by punctures.

Etymology. The species is named in honour of the doyen of Cynipnini taxonomy, George Nagypalinkas Melika.

MALE: Unknown

Diagnosis. Most closely related to X. falvicornis, differing by the shorter radicle, well developed epomial carina, extremely short notaulus, granulose mesoscutum, and short metanotal spine.


Holotype is deposited in CNCI.

Xenomerus melleus Mikó & Masner, new species
Figures 94, 96, 98, 110

MALE (Holotype): Length=1.02 mm.
Honey brown, antenna, excluding yellow radicle and metasoma, excluding honey-brown petiole, dark brown, mandible yellow, metapetal-propodeal complex light brown.

FCI=1.42; LCI=1.59; HW/IOS=1.48; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.32); facial striae extending to vertex obscuring frontal patch; frontal patch distinct; frons bare; central keel complete; toruli triangle shorter than clypeus height, not reaching midlevel of eye; POL shorter than OOL (POL/OOL=0.75); OOL more than 2.5 times as long as LOL (OOL/LOL=2.85); hyperoccipital carina absent; intercellar area transversely crenulate, crenulae radiating from the lateral and posterior margin of lateral ocellus, vertex patch present; genal patch present separated from vertex sculpture; A1 more than 4 times as long as radicle (A1/r=4.37), A2–A5 unibotted, A6–A11 dibotted.

Epomial carina absent; cervical pronotal area finely reticulate, lateral pronotal area reticulate dorsomedially, crenulate ventrolaterally; netrion sulcus complete; netrion sculpture not extending onto lateral pronotal area; pronomal suprahumeral and cervical sulci not foveolate; mesoscutum more than 1.5 times as wide as long (TSL/ML=1.65); notaulus reaching transscutal line; mesoscutum with sparse, thin setae, sculpture reaching to posterior margin on internotaul area; mesoscutellum more than 2.0 times as wide as long (SW/SL=2.27); scuto-scutellar sulcus slightly diminishing medially, 2 times as wide laterally as in the middle; mesoscutellum finely coriaceous anteriorly, with sparse marginal setae; posterior scutellar sulcus not extending onto axillula; sternaus not separated from anterior row of foveae of mesopleural carina; mesopleural carina incomplete; sulcus along metapleural carina foveolate; metascutellum bluntly triangular, basal striation extending apically; propodeal lateral cariniae inverted V-shaped, shafts straight; propodeal lateral and plical areas obscured by pale, sparse setae; marginal striation extending medially; posterior propodeal projection distinct; mesoscutum about as wide as fore wing (TSL/WW=0.96); marginal vein more than 4 times as long as stigmatic vein (m/st=3.3); hind wing about 1.5 times as wide as marginal cilia (HW/HWS=1.53).

T1 less than 1.5 times as wide as T1+T2 length (TW/T1+T2=1.26); T3 as wide as mesoscutum (T3W/TSL=0.96), almost 2 times as wide as long (T3W/T3L=1.86); costae on T3 reaching 2/3 length of tergum submedially; reticulate sculpture extending from lateral patch medially, covering posterior 2/3 of tergum, not reaching posterior margin, obscuring posterior patch; anterior 2/3 of T4 reticulate.

**Variability**  
(n=7): Length=0.88–1.05 mm (m=0.96, SD=0.05); FCI=1.30–1.42 (m=1.36, SD=0.04); LCI=1.47–1.59 (m=1.52, SD=0.03); HW/IOS=1.46–1.53 (m=1.48, SD=0.02); HW/TSL=1.28–1.36 (m=1.32, SD=0.02); POL/OOL=0.69–0.78 (m=0.74, SD=0.03); OOL/LOL=2.52–2.85 (m=2.74, SD=0.12); A1/r=4.37–5.16 (m=4.67, SD=0.30); TSL/ML=1.57–1.70 (m=1.64, SD=0.04); SW/SL=2.05–2.29 (m=2.21, SD=0.09); TSL/WW=0.78–0.96 (m=0.87, SD=0.05); m/st=3.2–3.5 (m=3.41, SD=0.13); HW/HWS=1.53–1.66 (m=1.62, SD=0.06); T1W/T1+T2L=1.19–1.5 (m=1.28, SD=0.1); T3W:TSL=0.94–0.96 (m=0.95, SD=0.01).

**FEMALE:** Unknown.

**Diagnosis.** Differs from all other species of *Xenomerus* by dibotted A6. Most closely related to *X. halteratus*, differing by lack of rugulous sculpture on upper frons, sculpture of vertex, longer notaulus, incomplete mesopleural carina. Differs from *X. ochraceus* in having facial striae extending to vertex, incomplete mesopleural carina and posteriorly reticulate T3.

**Etymology.** From the Latin mellis, meaning honey, referring to the body color.

**Material examined.** Holotype male: AUSTRALIA: Australian Capital Territory, Canberra, Black Mountain, 27.I–07.II.1984, L.Masner, MT [ANIC:####].

**Paratypes:** AUSTRALIA: Australian Capital Territory, Canberra, Black Mountain, 27.I–07.II.1984, L.Masner, MT. 1♂ [ANIC], 1♂; Australian Capital Territory, Canberra, Black Mountain -35.2666, 149.01, 23–30.V.1998. G.A.P.Gibson, YPT, 1♂; New South Wels, Monga State Forest, 19–24.I.1984, L. Masner, dry sclerophyl Eucalyptus forest, MT, 600m, 1♂; New South Wels, Monga State Forest, 24.I–4.II.1984, L. Masner, dry sclerophyl Eucalyptus forest, MT, 600m, 2♂; New South Wels, Kosciusco National Park, Wilson’s Valley, 1490m, Maintenance depot area, 7–21.II.1993, -36.35,148.5333, A.Newton & M.Thayer, open Eucalyptus pauciflora forest, 3♂; Queensland, Mount Glorious National Park, 630m, 28.II.1984, L.Masner, tropical rain & sclerophyl forest, mixed, 1♂; Queensland, Kuranda, 1000m, 21.II.1984, L.Masner,
rain forest underground, 1♂; Queensland, Mount Lewis Road, -16.5886, 145.2869, 900m, 16.IX.2004, L.Masner, rainforest (Q16), 1♂.

Holotype is deposited in ANIC. Paratypes are deposited in ANIC (1) and in CNCI (11).

Xenomerus noyesi Mikó & Masner, new species
Figures 92, 93

MALE (Holotype): Length=0.79 mm.

Brown, interantennal process, radicle, A1, A2 entirely, A3–A12 apically, legs including coxae excluding hind tibia and hind tarsomeres yellow.

FCI=1.17; LCI=1.43; HW/IOS=1.53; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.29); facial striae not extending to frons; frontal patch distinct; frons setae sparse, thin; central keel absent; toruli triangle opened dorsally, shorter than clypeus height; POL less than two times as long as OOL (POL/OOL=1.75); OOL longer than LOL (OOL/LOL=1.33); hyperocipital carina absent; vertex patch present, with diameter equal to lateral ocellus, not reaching lateral ocellus; interocellar area reticulate posteriorly; genal patch present, separated from vertex sculpture; A1 about 5 times as long as radicle (A1/r=4.88); A3–A11 unbottled; A5 modified.

Epomial carina present, diminishing medially; cervical pronotal area smooth medially, reticulate dorsolaterally just dorsal to epomial carina; lateral pronotal area reticulate dorsomedially near and above epomial carina; netrion sulcus incomplete, netrion striation extending to lateral pronotal area; pronotal suprahumeral sulcus diminishing medially, not foveolate; pronotal cervical sulcus foveolate; mesoscutum less than 1.5 times as wide as long (TSL/ML=1.30); notaulus elongate, exceeding transscutal line; mesoscutum with sparse, thin setae; mesoscutum sculpture extending to lateral and internotaular areas, not reaching posterior margin; mesoscutellum about 1.5 times as wide as long (SW/SL=1.66); scuto-scutellar sulcus distinctly diminishing medially, 4 times as wide laterally as in the middle; mesoscutellum smooth with sparse, long, thin setae; posterior scutellar sulcus extending onto axillula; sernaulus distinctly separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina 2–3 times as long as foveae width of postacetabular sulcus; mesopleural carina incomplete, anterior and posterior rows of foveae diminishing ventrally; sulcus along metapleural carina foveolate; metascutellum unarmed; propodeal lateral carinae inverted V-shaped, shafts straight; propodeal lateral area and plical area bare; marginal striation extending medially; posterior propodeal projection indistinct; fore wing wider than mesoscutum (TSL/WW=0.84); marginal vein more than 3 times as long as stigmal vein (m/st=3.66); hind wing less than 1.5 times as wide as marginal cilia length (HWW/HWS=1.25).

T1 almost as wide as T1+T2 length (T1W/T1+T2L=1.10); T3 about as wide as mesoscutum (T3W/TSL=1.11); basal depressions absent on T3; lateral patch absent; diameter of posterior patch of T3 shorter than width of basal depression on T2; lateral patch on T4 present, median patch absent.

FEMALE: Unknown.

Diagnosis. Differs from all other species of Xenomerus by the combination of smooth T3, extended netrion sculpture, and well-separated and developed sternaulus.

Etymology. The species name refers to the collector, John S. Noyes (BMNH).


Holotype is deposited in BMNH. Paratypes are deposited in BMNH (1) and CNCI (3).
Xenomerus ochraceus Mikó & Masner, new species

Figures 42–44, 48, 51, 95, 97, 113

**FEMALE** (Holotype): Length=1.20 mm.

Yellowish-brown (ochre); head, excluding clypeus and interantennal process, clava, metasoma excluding T1 and lateroterga, pronotum medially, mesoscutum and mesoscutellum darker ochre, legs, radicle, base of A1 and interantennal process yellow.

$\text{FCI}=1.18; \text{LCI}=1.86; \text{HW/IOS}=1.63$; head less than 1.5 times as wide as mesosoma ($\text{HW/TSL}=1.3$); facial striae exceeding midlevel of eye along inner orbit, obscuring frontal patch; frontal patch distinct; frons setae dense, setae thin; central keel incomplete; toruli triangle shorter than clypeus height; POL less than 1.5 times as long as OOL ($\text{POL/OOL}=1.25$); OOL more than 1.5 times as long as LOL ($\text{OOL/LOL}=1.66$); hyperoccipital carina absent; vertex patch present, with diameter equal to lateral ocellus; vertex setae denser behind POL area; genal patch absent; A1 more than 5 times as long as radicle ($\text{A1/r}=5.16$), longer than clava ($\text{A1/cl}=1.12$).

Epomial carina absent; cervical pronotal area, with scattered setae and reticulate sculpture along lateral and dorsal margin; lateral pronotal area reticulate medially, with scattered setae, ventrolaterally smooth; netrion sulcus incomplete; netrion sculpture extending to lateral pronotal area; pronotal suprahumeral sulcus diminishing medially, foveolate; pronotal cervical sulcus not foveolate; anterior tip of pronotum reduced; mesoscutum more than 1.5 times as wide as long ($\text{TSL/ML}=1.77$); notaulus absent; mesoscutum with dense setae; mesoscutal sculpture reaching posterior margin of mesoscutum; mesoscutellum more than 2.0 times as wide as long ($\text{SW/SL}=2.12$); scuto-scutellar sulcus slightly diminishing medially, 1.5 times as wide laterally as in the middle; mesoscutellum punctate, with dense, scattered setae; posterior scutellar sulcus extending on axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina nearly equal to foveae width of postacetabular sulcus; mesopleural carina complete, with complete row of foveae, maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus as long as width of posterior row of foveae of mesopleural carina; sulcus along metapleural carina foveolate; metascutellum bluntly triangular, entirely striated; propodeal lateral carinae S-shaped; propodeal lateral area and plical area obscured by sparse setae, entirely striated; posterior propodeal projection distinct, tubercle like; fore wing as wide as mesoscutum ($\text{TSL/WW}=1$); marginal vein more than 3 times as long as stigmal vein ($\text{m/st}=3.33$); hind wing more than 2 times as wide as marginal cilia length ($\text{HWW/HWS}=2.40$).

T1 about 1.5 times as wide as T1+T2 length ($\text{T1W/T1+T2L}=1.60$); T3 as wide as mesoscutum ($\text{T3W/TSL}=1.05$); basal depressions broad; costae not extending from it; lateral patch absent; diameter of posterior patch of T3 nearly equal to width of 3 basal depressions, weakly visible; T3 with dense setae laterally; apical setae of T3 elongate, more than two times as long as basal setae of tergum; lateral patch on T4 present, median patch absent.

**Variability** (n=23): Length=0.86–1.51 mm (m=1.08, SD=0.17); color variable: ochre, except interocellar area, clava, mesonotum and metasoma dark brown; ochre, except metasoma apically dark brown; ochre, except head and mesonotum dark brown; ochre except mesoscutellum, metasoma apically and mesonotum anteriorly dark brown; unicolored ochre to light yellow; $\text{FCI}=1.13–1.23$ (m=1.17, SD=0.02); $\text{LCI}=1.63–1.86$ (m=1.77, SD=0.06); $\text{HW/IOS}=1.56–1.69$ (m=1.63, SD=0.03); $\text{HW/TSL}=1.20–1.44$ (m=1.31, SD=0.05); $\text{POL/OOL}=1.25–1.35$ (m=1.27, SD=0.03); $\text{OOL/LOL}=1.55–1.77$ (m=1.65, SD=0.07); $\text{A1/r}=5.00–5.75$ (m=5.30, SD=0.21); $\text{A1/cl}=1.00–1.18$ (m=1.08, SD=0.06); $\text{TSL/ML}=1.55–1.76$ (m=1.65, SD=0.09); $\text{SW/SL}=1.90–2.27$ (m=2.13, SD=0.10); sometimes maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus 2–3 times as wide as posterior row of foveae; $\text{TSL/WW}=0.80–1.12$ (m=0.96, SD=0.07); $\text{m/st}=3.26–3.56$ (m=3.38, SD=0.08); $\text{HWW/HWS}=1.84–2.66$ (m=2.13, SD=0.25); $\text{T1W/T1+T2L}=1.36–1.77$ (m=1.62, SD=0.13); $\text{T3W/TSL}=0.96–1.16$ (m=1.06, SD=0.05), sometimes costae extending from basal depressions, never exceeding middle of tergum; basal depressions thick; sometimes T4 reticulate medially and laterally, smooth submedially.
MALE (n=9): length=0.90–1.12 (m=0.98, SD=0.11); A1–2 yellow to light brown, A3–A12 light brown to dark brown, metasoma and sometimes mesonotum brown; head wider (FCI=1.24–1.33, m=1.29, SD=0.03; LCI=1.61–1.77, m=1.69, SD=0.07); HW/IOS=1.48–1.59 (m=1.54, SD=0.04); HW/TSL=1.29–1.45 (m=1.40, SD=0.05); OOL longer (POL/OOL=1.00–1.16, m=1.08, SD=0.05); OOL/OL=2.00–2.21, m=2.01, SD=0.04); A1/r=3.75–4.12 (m=3.85, SD=0.15); A5 modified; A7–A11 dibottled, with weak constriction in-between; flagellomeres with numerous ventral microsia; TSL/ML=1.65–1.77 (m=1.71, SD=0.04); notaulus present; SW/SL=1.90–2.05 (m=1.96, SD=0.06); TSL/WW=0.77–0.91 (m=0.83, SD=0.05); m/st=4.00–4.45 (m=4.27, SD=0.22); HW/WHS=1.66–1.87 (m=1.80, SD=0.08); metasoma longer (T1W/T1+T2L=1.42–1.60, m=1.51, SD=0.06; T3W/TSL=0.96–1.03, m=0.98, SD=0.02).

Diagnosis. Xenomerus ochraceus shares the incomplete central keel with X. guinensis, differing by dense setae on frons, thick basal depressions and short costae on T3, not extending to middle of tergum. Most closely related to X. yamagishi, differs by incomplete central keel and thick basal depressions on T3.

Eymology. The species name refers to body color.


Comments. X. ochraceus is one of the most widely distributed and perhaps the most variable Xenomerus species from South Africa to Indonesia.

Xenomerus orientalis Mikó & Masner, new species

Figures 67, 69, 100

FEMALE (Holotype): Length=1.30 mm.

Black, A8–A12, lateral pronotal area, mesopleuron, metaplectus and metasoma dark brown; mandible, interantennal process, radicle, A1–A7 and legs, including coxae yellow, A5 and A6 lighter.

FCI=1.17; LCI=1.73; HW/IOS=1.68; head less than 1.5 times as wide as mesosoma (HW/TSL= 1.39); facial striae exceeding midlevel of eye, curving inward dorsally, obscuring frontal patch; frontal patch indistinct; frons setae dense, thin; central keel complete; toruli triangle shorter than clypeus height; POL about than 1.5 times as long as OOL (POL/OOL=1.42); OOL about 1.5 times as long as LOL (OOL/LOL=1.46); hyperoccipital carina present, sharp, extending to inner orbit; vertex without sculpture; genal patch present; A1 about 3 times as long as radicle (A1/r=3.15), as long as clava (A1/cl=1).

Epomial carina present, almost reaching pronotal suprahumeral sulcus; cervical pronotal area smooth, with scattered setae; lateral pronotal area with transverse crenulae, reticulate dorsally; netrion sulcus complete; netrion sculpture not extending onto lateral pronotal area; pronotal suprahumeral sulcus diminishing medially, pronotal cervical sulcus complete, both sulci foveolate; mesoscutum more than 1.5 times as wide as long (TSL/ML=1.64); notaulus reaching transscutal line; mesoscutum coriaceous, with dense thin setae, setal bases pustulate, sculpture extending to lateral and internotaular area, not reaching posterior margin of mesoscutum; mesoscutellum two times as wide as long (SW/SL=2.0); scutocutellar sulcus slightly diminishing, two times as wide laterally as in the middle; mesoscutellum anteriorly rugulose, with sparse, marginal setae; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina, distance between postacutabular sulcus and anterior row of foveae of mesopleural carina as wide as foveae width of postacutabular sulcus; mesopleural carina complete, with complete rows of foveae, posterior row of foveae of mesopleural carina almost merging with foveae of mesepimeral sulcus; sulcus along metapleural carina foveolate; metascutellum sharply pointe; propodeal lateral carinae inverted Y-shaped, shafts slightly curved outward; propodeal lateral area and plicai area obscured by pale, dense setae, marginal striation extending medially; plica absent; posterior propodeal projection distinct, tuberclelike; mesoscutum as wide as fore wing (TSL/WW=0.94); marginal vein 3 times as long as stigmal vein (m/st=3.08); hind wing less than 2.5 times as wide as marginal cilia length (HWW/HWS=2.40).
T1 less than 2 times as wide as T1+T2 length (T1W/T1+T2L=1.70); T3 about as wide as mesoscutum (T3W/TSL=1.08), costae on T3 extending almost to apex of tergum submedially, reaching 8/9 part of tergum, laterally and medially costae not emerging from basal depressions; lateral patch distinct; diameter of posterior patch of T3 equal to width of one basal depression; anterior half of T4 reticulate.

Variability (n=15): Length=1.00–1.30 mm (m=1.11, SD=0.07); sometimes coxae and antenna darker, mesopleuron and metapleuron reddish; FCI=1.10–1.17 (m=1.13, SD=0.02); LCI=1.72–1.92 (m=1.81, SD=0.06); HW/IOS=1.61–1.71 (m=1.62, SD=0.01); HW/TSL=1.37–1.43 (m=1.40, SD=0.02); facial striae sometimes elongated, extending dorsally to vertex; POL/OOL=1.38–1.77 (m=1.46, SD=0.10); OOL/LOL=1.05–1.63 (m=1.47, SD=0.13); vertex sometime with two finely coriaceous patches behind OOL area, never extending anteriorly to frons; A1/r=3.15–3.60 (m=3.43, SD=0.2); A1/cl=0.94–1.04 (m=0.98, SD=0.03); TSL/ML=1.62–1.76 (m=1.70, SD=0.04); SW/SL=2.00–2.10 (m=2.04, SD=0.04); sometimes distance between postacetalcarina and anterior row of foveae of mesopleural carina larger, two or three times as wide as foveae of postacetalcarina; posterior row of foveae of mesopleural carina and mesepimeral sulcus sometimes distinctly separated; in smaller specimens metasternal spine reduced, marked by a tubercle in the middle of metasternum; sometimes posterior propodeal projection distinct, well developed; TSL/WW=0.84–1.09 (m=0.97, SD=0.06); m/st=3.00–3.30 (m=3.21, SD=0.07); HWW/HWS=2.30–2.50 (m=2.35, SD=0.07); T1W/T1+T2L=1.70–1.88 (m=1.77, SD=0.07); T3W/TSL=0.97–1.11 (m=1.03, SD=0.04); sometimes costae not reaching 4/5 of tergum.

MALE (n=1): HW/IOS=1.49; A1/r=3; A5 modified; A7–A11 dibottled; SW/SL=1.95; TSL/WW=0.75; m/st=4; HWW/HWS=1.76.

Diagnosis. Most closely related to X. parorinetalis, differing by the more extended and dorsally curved facial striae, POL/OOL, brown A2–A4 and the sculpture of T3, extended hyperoccipital carina, vertex sculpture not extending anteriorly to frons and anteriorly rugulose mesocutellum.

Etymology. The name refers to the wide distribution of the species in the Oriental region.

Park, 16.84498, 100.85443, 501m, 18–25.III.2007, Pongpitak, Pranee, Satthit, MT (T2390), 1♀ [QSBG];
Prachuab Khiri Khan Province, Khao Sam Roi Yot National Park, Khao Look Glang, 12.1069, 99.9548, 16–
23 XI.2008, Yai, Ammad, MT (T4126), 1♂; Trang Province, Nyayong, 7.5506, 99.8228, 7m, D.Lohman, 1♀;
Trang Province, near Nam Tok Ton, Khao Chong, 7.533, 99.789, 04–11.II.2005, D.Lohman, 1♀.
TAIWAN:
Nantou County, Wushe, 22.V.1983, 1150m, H.Townes, flight trap, 1♀; Nantou County, Wushe, 1100m,
27.V.1990, J.Heraty, orchard scrub (H075), 1♀; Pingtung County, Kenting National Park, Forest Recreation
Area, 27.XI–1 XII.1990, C.K.Starr, PT, 1♂; Pingtung County, Kenting National Park, 17–23.V.1991,
C.K.Starr, PT, 1♀; Pingtung County, Kenting, 1–5.V.1991, YPT, C.K.Starr, 1♀; Taitung County, Orchid Island
(Botel Tobago), 5–9.VII.1995, B.Hubley, J.Swann, on steep slope across from dorm annex, MT, LT (fine mesh, 2 growth,
light trap) (ROM956056), 1♀ [ROME]; Ha Tinh Province, Huong Son, 300m, 18.3666, 105.2166, 20.IV–
01.V.1998, L.Herman, MT, 1♀; Nghé An Province, ca. 25km SW of Con Culong, Khe Moi River Forestry
Camp, 100m upriver of camp, 18.9333, 104.8166, 308m, 06.VI.1995, B.Hubley, small stream, tropical forest
edge (ROM 956170), 1♀ [ROM]; Tuyen Quang Province, 300m, NaHang Reserve, 20–24.V.1997, S.B.Peck,
FIT, (97–12), 1♀.
Holotype is deposited in CNCI. Paratypes are deposited in BMNH (3), CNCI (32), QSBG (3) and ROME
(3).
Comments. *Xenomerus orientalis* was reared from Dromiinae (Carabidae: Coleoptera) eggs.

*Xenomerus parorinetalis* Mikó & Masner, new species

Figures 66, 68

**FEMALE** (Holotype): Length=1.21 mm.

Dark brown, interantennal process, radicle, A2 apically, A3–A6, legs, excluding brown coxae and apical
tarsomeres yellow, mandible light brown.

FCI=1.12; LCI=1.78; **HW/IOS**=1.55; head less than 1.5 times as wide as mesosoma (**HW/TSL**= 1.24); facial
striae exceeding midlevel of eye, straight, not curved inward dorsally, exceeding frontal patch, frontal
patch indistinct; frons setae sparse, thin; central keel complete; toruli triangle shorter than clypeus height;
POL more than two times as long as **OOL** (**POL/OOL**=2.14); **OOL** equal **LOL** (**OOL/LOL**=1.0);
hyperoccipital carina present, blunt, not extending to inner orbit; reticulate sculpture of vertex slightly
extending to frons and interocellar area; genal patch present, separated from vertex sculpture; A1 about 3.5
times as long as radicle (**A1/r**=3.43), slightly shorter than clava (**A1/cl**=0.91).

Epopial carina present, almost reaching pronotal suprahumeral sulcus; cervical pronotal area smooth,
with scattered setae; lateral pronotal area with transverse crenulae, reticulate above epomial carina; netrior
sulcus absent; netrion sculpture slightly extending onto lateral pronotal area ventrally; pronotal suprahumeral
sulcus diminishing medially, pronotal cervical sulcus complete, both sulci foveolate; mesoscutum more than
1.5 times as wide as long (**TSL/ML**=1.64); notaulus reaching transcutal line; mesoscutum coriaceous, with
dense thin setae, setal bases pustulate, reticulate sculpture extending to lateral and inter notaular area, not
reaching posterior margin of mesoscutum; mesoscutellum about two times as wide as long (**SW/SL**=2.18);
scutosternal sulcus distinctly diminishing medially, 3–4 times as wide laterally as in the middle; mesoscutellum smooth,
with sparse, long marginal setae; posterior sternal sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina, distance between postacetabular sulcus and anterior row of foveae of mesopelopleural carina two times as wide as foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae; posterior row of foveae of mesopleural carina and mesepimeral sulcus distinctly separated; sulcus along metapleural carina foveolate; epicoxal and
lower part of metapleural sulci distinctly separated; metapleural area sharply pointed; propodeal lateral carinae
inverted Y-shaped, shafts straight; propodeal lateral area and plical area obscured by pale, dense setae,
marginal striation extending medially; plica absent; posterior propodeal projection distinct, well developed;
mesoscutum about as wide as fore wing (TSL/WW=1.19); marginal vein 4 times as long as stigmal vein (m/st=3.36); hind wing about than 2 times as wide as marginal cilia length (HWW/HWS=1.94).

T1 about 2 times as wide as T1+T2 length (T1W/T1+T2L=1.92); T3 about as wide as mesoscutum (T3W/TSL=0.91), costae on T3 extending almost to posterior margin of tergum submedially, reaching 8/9 part of tergum, laterally and medially costae extending middle of tergum; lateral patch distinct; diameter of posterior patch of T3 equal to width of one basal depression; anterior half of T4 reticulate.

**Variability** (n=2): Length=0.92–1.21 mm. HW/IOS=1.46–1.55; HW/TSL=1.24–1.30; POL/OOL=2.14–2.25; OOL/LOL=0.98–1.00; A1/cl=0.86–0.91; TSL/ML=1.57–1.64; SW/SL=2.05–2.18.

**Male:** FCI=1.29; LCI=1.96; HW/TSL=1.37; POL/OOL=2.0; OOL/LOL=1.16; A1/r=2.91; A5 modified; A7–A11 unbottled; TSL/WW=0.86; m/st=2.8; HWW/HWS=1.75; T1W/T1+T2L=1.66.

**Diagnosis.** Most closely related to *X. orientalis*, differing by the less extended and straight facial striae, POL/OOL ratio, yellow A3–A6, sculpture of T3, hyperoccipital carina not extended and anteriorly extended reticulate sculpture of vertex and anteriorly smooth mesoscutellum.

**Etymology.** The name refers to its similarity with *X. orientalis*.


*Xenomerus rugifrons* Mikó & Masner, new species

**Figures 53, 55, 57, 59**

**FEMALE** (Holotype): Length=1.52 mm.

Dark brown; interantennal process, radicle, A1, A2, mandible, legs, excluding brown coxae, yellow.

FCI=1.14; LCI=2.0; HW/IOS=1.60; head less than 1.5 times as wide as mesosoma (HW/TSL=1.33); facial striae extending to vertex, obscuring frontal patch; frons setae dense, setae thin, setal bases pustulate, median smooth area above interantennal process as wide as clypeus width; frons above median smooth area rugulose; central keel complete; toruli triangle longer than clypeus height, exceeding eye midlevel; POL shorter than OOL (POL/OOL=0.80); OOL more than two times as long as LOL (OOL/LOL=2.27); hyperoccipital carina present, blunt, not extending to inner orbit; vertex patch present, diameter two times as large as lateral ocellus; vertex setae denser behind POL area, setal bases pustulate; genal patch absent; A1 less than 3.0 times as long as radicle (A1/r=2.79), about as long as clava (A1/cl=0.98).

Epomial carina absent; cervical pronotal area smooth, with scattered setae; lateral pronotal area transversely striated; netrion sulcus complete, netrion sculpture extending and almost entirely obscuring lateral pronotal area; pronotal suprarahual sulcus slightly diminishing medially, complete, foveolate; pronotral cervical sulcus not foveolate; mesoscutum more than 1.5 times as wide as long (TSL/ML=1.63); notaualus elongate, almost reaching anterior margin of mesoscutum; mesoscutum with dense thin setae, sculpture extending to posterior margin; mesoscutellum more than 2.0 times as wide as long (SW/SL=2.16); scuto-scutellar sulcus 2 times as wide laterally as in the middle; mesoscutellum smooth, with dense setae, setal bases pustulate; trans-axillar carina separated from axillular carina; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina nearly equal to foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae, maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus half as long as width of posterior row of foveae of mesopleural carina, foveae merging in lower half of mesopleural depression; epicoxal and lower part of metapleural sulci merged; sulcus along metapleural carina foveolate; metascutellum sharply pointed; propodeal lateral carinæ inverted V-shaped, shafts slightly curved inward; propodeal lateral area and plical area obscured by pale, dense setae, setal bases pustulate; marginal striation extending medially; posterior propodeal projection distinct; fore wing as wide as mesoscutum (TSL/WW=1.05); marginal vein more than 3
times as long as stigmal vein \((m/st=3.66)\); hind wing more than 2.5 times as wide as marginal cilia length \((HWW/HWS=2.62)\).

T1 less than 2 times as wide as T1+T2 length \((T1W/T1+T2L=1.72)\); T3 as wide as mesoscutum \((T3W/TSL=1.0)\), costae on T3 reaching almost the apex of tergum; lateral patches indistinct; lateral part of T3 obscured by dense setae extending \(\frac{1}{4}\) width of tergum, setal bases pustulate; diameter of posterior patch of T3 nearly equal to width of two basal depressions; lateral and median patches on T4 present, not fused.

**Variability** \((n=3)\): Length=1.19–1.52 mm \((m=1.35, SD=0.23)\); smaller specimens lighter; \(FCI=1.14–1.16\) \((m=1.15, SD=0.01)\); \(LCI=1.91–2.00\) \((m=1.95, SD=0.05)\); \(HW/IOS=1.56–1.60\) \((m=1.58, SD=0.02)\); \(HW/TSL=1.33–1.34\) \((m=1.33, SD<0.01)\); \(POL/OOL=0.72–0.80\) \((m=0.76, SD=0.05)\); \(OOL/LOL=2.27–2.40\) \((m=2.35, SD=0.12)\); \(A1/r=2.70–2.79\) \((m=2.74, SD=0.06)\); \(A1/cl=0.91–0.98\) \((m=0.95, SD=0.04)\); \(TSL/ML=1.63–1.66\) \((m=1.65, SD=0.02)\); \(SW/SL=2.08–2.16\) \((m=2.12, SD=0.06)\); \(TSL/WW=1.00\); \(m/st=3.66\); \(HWW/HWS=2.50–2.62\) \((m=2.56, SD=0.08)\); \(T1W/T1+T2L=1.72–1.73\) \((m=1.72, SD<0.01)\); \(T3W/TSL=1.00–1.11\) \((m=1.05, SD=0.08)\).

**Male:** Unknown

**Diagnosis.** Differs from all other species of **comatus** group by the elongate toruli triangle, dorsally rugulose frons and not foveolate cervical sulcus. Most closely related to **X. halteratus**, differing in transversely striated lateral pronotal area, foveolate pronotal suprahumeral sulcus, well developed wings and T3 without reticulate sculpture posteriorly.

**Etymology.** The species name refers to rugulous sculpture of the frons.


**Xenomerus scutellatus** Mikó & Masner, new species

Figure 72

**Female** (Holotype): Length=1.56 mm.

Black, legs excluding brown coxae and apical tarsomeres yellow, interantennal process, radicle, A1–A6, mandible, brown, clava dark brown.

\(FCI=1.16\); \(LCI=1.64\); \(HW/IOS=1.66\); head less than 1.5 times as wide as mesosoma \((HW/TSL=1.40)\); facial striae reaching midlevel of eye along inner orbit, exceeding frontal patch; frontal patch distinct, vertically elongated, reaching eye midlevel; frons setae sparse, thin; central keel complete; toruli triangle shorter than clypeus height; POL less than 1.5 times as long as OOL \((POL/OOL=1.26)\); OOL more than 1.5 times as long as LOL \((OOL/LOL=1.72)\); hyperoccipital carina absent; vertex reticulate; genal patch present, not merging with vertex sculpture; A1 more than 5.0 times as long as radicle \((A1/r=5.5)\), shorter than clava \((A1/cl=0.88)\).

Epomial carina present, diminishing medially; cervical pronotal area smooth, with scattered setae; lateral pronotal area near epomial carina reticulate with few crenulae above pronotal ventral projection; netrior sulcus complete; netrior sculpture not extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci complete, foveolate; mesoscutum almost 1.5 times as wide as long \((TSL/ML=1.44)\); almost reaching transscutal line; reticulate sculpture of mesoscutum extending to lateral and internotaular areas, not reaching posterior margin; mesoscute shortly about 2.0 times as wide as long \((SW/SL=1.89)\); scuto-scute sulcus slightly diminishing medially, 2 times as wide laterally as in the middle; mesoscute anteriorly rugulate, with sparse, scattered setae; posterior scutellar sulcus extending onto axillula; sternaulus separated from anterior row of foveae of mesopleural carina, reduced; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina 3–4 times as wide as foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae; foveae of upper part of metapleural sulcus 4–5
times as wide as foveae along metapleural carina; metascutellum sharply pointed; propodeal lateral carinae inverted Y-shaped, shafts slightly curved outward; propodeal lateral area and plical area obscured by pale, sparse setae, marginal striation extending medially; posterior propodeal projection distinct; fore wing wider than mesoscutum ($TSL/WW=0.83$); marginal vein about 3.5 times as long as stigmal vein ($m/st=3.46$); hind wing 3 times as wide as marginal cilia length ($HWW/HWS=3.0$).

T1 concave dorsally, less than 1.5 times as wide as T1+T2 length ($T1W/T1+T2L=1.37$); T3 less than 1.5 times as wide as long ($T3W/T3L=1.41$), as wide as mesoscutum ($T3W/TSL=1.13$); costae on T3 exceeding level of apical setae; lateral patch distinct, 4 times as long as wide; diameter of posterior patch of T3 nearly equal to width of one basal depression; posterior T3 smooth; anterior 1/3 T4 reticulate, with a median narrow smooth area.

**Variability** (n=4): Length=1.56–1.63 mm (m=1.59, SD=0.01); $FCI=1.12–1.16$ (m=1.14, SD=0.02); $LCI=1.56–1.64$ (m=1.60, SD=0.05); $HW/IOS=1.66–1.67$, m=1.66, SD=0.00); $HW/TSL=1.33–1.40$ (m=1.36, SD=0.04); $POL/OOL=1.23–1.26$ (m=1.25, SD=0.01); $OOL/LOL=1.72–1.75$ (m=1.73, SD=0.01); $A1/r=5.23–5.50$ (m=5.36, SD=0.19); $A1/cl=0.88–0.89$ (m=0.88, SD=0.01); $TSL/ML=1.44–1.45$ (m=1.44, SD<0.01); $SW/SL=1.88–1.89$ (m=1.89, SD<0.01); $TSL/WW=0.83–0.85$ (m=0.84, SD=0.01); $m/st=3.66–3.71$ (m=3.68, SD=0.03); $HW/HWS=3.00–3.06$ (m=3.01, SD=0.04); $T1W/T1+T2L=1.37–1.40$ (m=1.38, SD=0.04); $T3W/T3L=1.33–1.41$ (m=1.37, SD=0.05); $T3W/TSL=1.13–1.21$ (m=1.17, SD=0.05)

**MALE**: Unknown

**Diagnosis.** Most closely related to *Xenomerus kalocsai*, differing by the anteriorly rugulose mesoscutellum.

**Etymology.** Named after the unique sculpture of mesoscutellum.


*Xenomerus spinosus* Mikó & Masner, new species

Figures 34, 37, 39, 40

**FEMALE** (Holotype): Length=1.31 mm.

Dark brown, interantennal process, radicle, A1–A7, mandible, tegula and legs including coxae yellow, A8–A12 light brown.

$FCI=1.20$; $LCI=1.73$; $HW/IOS=1.85$; IOS shortest below eye midlevel; head about 1.5 times as wide as mesosoma ($HW/TSL=1.45$); facial striae reaching vertex along inner orbit, obscuring frontal patch; frontal patch indistinct; frons setae dense, thin; central keel complete; toruli triangle shorter than clypeus height; POL as long as OOL ($POL/OOL=1.0$); OOL two times as long as LOL ($OOL/LOL=2.0$); hyperoccipital carina present, blunt, not extending to inner orbit; vertex patch present; genal patch absent; A1 2.5 times as long as radicle ($A1/r=2.50$), shorter than clava ($A1/cl=0.86$); A4 distinctly longer A3.

Epomial carina present, almost reaching pronotal suprahumeral sulcus; cervical pronotal area smooth, with scattered setae, setal bases postulate; lateral pronotal area with transverse crenulae; netrion sulcus complete; netrional striation not extending onto lateral pronotal area; pronotal suprahumeral and cervical sulci complete, foveolate; mesoscutum 1.5 times as wide as long ($TSL/ML=1.52$); notaulus exceeding transscutal line; mesoscutum with dense, thin setae, setal bases postulate, reticulate sculpture extending to lateral and internotaular areas, not reaching posterior margin of mesoscutum; mesoscutellum two times as wide as long ($SW/SL=2.08$); scutocutellar sulcus slightly diminishing medially, less than 1.5 times as wide laterally as in the middle; mesoscutellum smooth, with a median spine and dense, long, thin setae; posterior scutellar sulcus not extending onto axillula; sternaular not separated from anterior row of foveae of mesopleural carina, distance between postacetabular sulcus and anterior row of foveae of mesopleural carina nearly as wide as
foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae, foveae of mesepimeral sulcus 4 times as wide as posterior row of fovea of mesopleural carina, distance between posterior row of fovea and mesopleural sulcus less than foveae width of mesepimeral sulcus; sulcus along metapleural carina foveolate; metapleural epicoxal and lower part of metapleural sulci not merged; metascutellum sharply pointed; propodeal lateral carinae inverted Y-shaped, shafts straight; propodeal lateral area and plical areas obscured by thin, dense setae, marginal striation extending mediadly; posterior propodeal projection distinct, well developed; fore wing wider than mesoscutum (TSL/WW =0.76); marginal vein elongate, almost 5 times as long as stigmal vein (m/st =4.7); hind wing about 2.5 times as wide as marginal cilia length (HWW/HWS =2.46).

T1 less than 1.5 times as wide as T1+T2 length (T1W/T1+T2L =1.45); T3 about as wide as mesoscutum (T3W/TSL =1.04), costae on T3 posteriorly becoming into longitudinally rugoso-punctate sculpture, reaching almost the apex of tergum; lateral patches distinct, circular in shape; diameter of posterior patch of T3 equal to width of one basal depression; anterior half of T4 reticulate.

**Diagnosis.** Most similar to *X. armatus*, distinguished from it by the shorter IOS located below eye midlevel, larger eyes, longer head, clava and radicle, POL/OOL, hyperoccipital carina not extending to inner orbit, vertex sculpture slightly extending to frons between lateral ocellus and inner orbit, absence of median keel extending from anterior margin of mesoscutellum to median spine, presence of netrion sulcus, A4 distinctly longer than A3, longer marginal vein and more elongated metasoma.

**Etymology.** The name refers to the median spine of mesoscutellum.


*Xenomerus vanharteni* Mikó & Masner, new species

Figures 23, 24

**FEMALE** (Holotype): Length=0.62 mm.

Brown; radicle, trochanters and tarsomeres, except apical brown tarsomeres lighter.

FCI=1.13; LCI =1.60; HW/IOS =1.51; head less than 1.5 times as wide as mesosoma (HW/TSL = 1.35); facial striae not exceeding midlevel of eye, exceeding and obscuring frontal patch; frontal patch distinct; frons setae sparse, thin; central keel complete; POL about 3 times as long as OOL (POL/OOL=3.16); OOL shorter than LOL (OOL/LOL=0.66); hyperoccipital carina present, keellike, extending to inner orbit, vertex smooth, genal patch absent; A1 2.5 times as long as radicle (A1/r =2.50), as long as clava (A1/cl =1.08).

Epomial carina absent, cervical pronotal area smooth, bare; netrion absent, lateral pronotal area with few crenulae above pronotal ventral projection; pronotal suprahumeral and cervical sulci not foveolate; mesoscutum less than 1.5 times as wide as long (TSL/ML =1.23); notaulus absent, mesoscutum smooth; mesoscutellum less than 2.5 times as wide as long (SW/SL =2.34); scuto-scutellar sulcus almost as wide medially as laterally; mesoscutellum smooth, with sparse setae; posterior scutellar sulcus not extending onto axillula; meso- and metapectus, except foveolate mesepimeral sulcus, without any foveae; mesopleural carina incomplete; metapleural sulcus reduced to metapleural pit; metascutellum foveolate, metanotal spine absent; propodeal lateral carinae widely separated, forking, plica present, propodeal striation absent; plical area with sparse setae, posterior propodeal projection absent; mesoscutum about as wide as fore wing (TSL/WW =0.92); marginal vein less than 3 times as long as stigmal vein (m/st =3.33); hind wing more than 1.5 times as wide as marginal cilia length (HWW/HWS =1.65).

T1 as wide as T1+T2 length (T1W/T1+T2L =1.01); T3 less than 1.5 times as wide as long (T3W/T3L =1.36), about as wide as mesoscutum (T3W/TSL =0.91); T3 smooth, lateral and posterior patches absent; T4 smooth.
MALE: A2–A11 unibottled, A5 modified.

Diagnosis. Differs from all other Xenomerus species by the sharp hyperoccipital carina extending to inner orbit, absence of notaulus, and the structure of propodeum.

Etymology. Named after Antonius van Harten, the collector of the species.


Other material examined. YEMEN: Ar Rujum, 15.I–09.IV.2001, A.van Harten, MT, 1 ♂, (on slide). Holotype and paratypes are deposited in CNCI.

Notes. Some of the diagnostic characters of Xenomerus are highly reduced in X. vanharteni, however, the bottle shaped male flagellomeres with erect, long bristles and palpal formula (3:1) makes it evident, that X. vanharteni belongs to the genus Xenomerus.

Xenomerus varipes Dodd, 1914

Figures 76, 78, 103


FEMALE (n=10): Length=0.89–1.62 mm (m=1.29, SD=0.27).

Black; metasoma dark brown to light brown, sometimes with darker apex, apex of interantennal process, radicle, A1–A6, mandibles, legs, excluding apical light brown tarsomeres yellow.

FCI=1.17–1.21 (m=1.19, SD=0.01); LCI=1.68–1.76 (m=1.71, SD=0.03); HW/IOS=1.54–1.60 (m=1.57 SD=0.01); head less than 1.5 times as wide as mesosoma (HW/TSL=1.41–1.48, m=1.43, SD=0.02); facial striae extending to midlevel of eye, parallel on frons, obscuring frontal patch; frontal patch indistinct; frons setae sparse, thin; central keel complete; toruli triangle shorter than clypeus height; POL as long as OOL (POL/OOL=0.96–1.08, m=1.01, SD=0.03); OOL about 2 times as long as LOL (OOL/LOL=1.84–2.1, m=1.97, SD=0.09); hyperoccipital carina absent; vertex smooth; genal patch absent; A1 more than 5.0 times as long as radicle (A1/r=5.5–6.5, m=6.04, SD=0.34), about as long as clava (A1/cl=0.97–1.1, m=1.04, SD=0.04).

Epomial carina present, reaching pronotal suprahumeral sulcus; cervical and lateral pronoatal areas smooth; netrition sulcus incomplete, diminishing ventrally; pronoatal suprahumeral and cervical sulci complete, foveolate; mesoscutum about 1.5 times as wide as long (TSL/ML=1.45–1.52, m=1.48, SD=0.02); notaulus normal, almost reaching transscutal line; granulose sculpture of mesoscutum extending to lateral and internotalar areas, not reaching posterior margin of mesoscutum; mesoscutellum about 2.0 times as wide as long (SW/SL=1.96–2.16, m=2.03, SD=0.07); scuto-scutellar sulcus diminishing medially, 4–5 times as wide laterally as in the middle; mesoscutellum smooth, with sparse, long marginal setae; posterior scutellar sulcus not extending onto axillula; sterna not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina equal to foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae; foveae of mesepimeral sulcus transversely elongated, 4–5 times as long as wide; sulcus along metapleural carina foveolate; metascutellum pointed, metanotal spine marked as a tubercle; propodeal lateral carinae inverted Y-shaped, shafts distinctly curved outward; propodeal lateral and plical areas obscured by pale, dense setae, setal bases pubulate, marginal striation not extending medially; posterior propodeal projection indistinct; fore wing slightly wider than mesoscutum (TSL/WW=0.81–0.98, m=0.89, SD=0.05); marginal vein about 3 times as long as stigmal vein (m/st=2.80–3.10, m=2.94, SD=0.10); hind wing about two times as wide as marginal cilia length (HWW/HWS=2.00–2.15, m=2.02, SD=0.05).

T1, less than 1.5 times as wide as T1+T2 length (T1W/T1+T2L=1.03–1.30, m=1.18, SD=0.08); T3 about 1.5 times as wide as long (T3W/T3L=1.40–1.70, m=1.55, SD=0.08), as wide as mesoscutum (T3W/T3L=0.93–1.08, m=0.99, SD=0.04); costae on T3 reaching middle of tergum medially; lateral patch distinct,
reduced; diameter of posterior patch of T3 nearly equal to width of one basal depression; lateral patch on T4 present, median patch marked by punctures.

**MALE** (n=4): FCI=1.22–1.25 (m=1.23, SD=0.01); HW/IOS=1.48–1.48, (m=1.48 SD<0.01); A1/r=4.75–4.87 (m=4.78, SD=0.06); A5 not modified, A2–A6 unibottled, A7–A11 dibottled, flagellomeres with numerous ventral microtrichia ventrally; TSL/WW=0.68–0.75 (m=0.71, SD=0.04);

**Diagnosis.** Most closely related to *X. laticeps*, differing by absence of vertex patch, numerous ventral microtrichia on male flagellomeres, granulose mesoscutum of females, presence of netrion sulcus, more elongated fovea of mesepimeral sulcus and reduced metanotal spine.

**Material examined.** Holotype female: 1. label: *Xenomerus varipes*, Dodd, σ, type (hand writing); 2. label: I. 2005, Xenomerus varipes Dodd, Queensland, also slide.


**Notes.** The head and wings of the holotype are lost.

**Xenomerus watshami** Mikó & Masner, new species

Figures 64, 65, 107, 109, 117

**FEMALE** (Holotype): Length=1.2 mm.

*Black, antenna, coxae, mesopleuron, metasoma dark brown; interantennal process, radicle, A5–6, A1 distally, mandible and legs, excluding coxae, yellowish-brown; FCI=1.20; LCI=1.77; HW/IOS=1.63; head less than 1.5 times as wide as mesosoma (HW/TSL=1.40); facial striae exceeding midlevel of eye along inner orbit, reaching frontal patch; frontal patch distinct, oblique, transverse; frons setae sparse, thin; central keel incomplete; toruli triangle shorter than clypeus height; POL almost 3 times as long as OOL (POL/OOL=2.90); OOL shorter than LOL (OOL/LOL=0.73); hyperoccipital carina present, blunt, not extending to inner orbit; vertex entirely reticulate; genal patch present, not merging with vertex sculpture; A1 almost 3 times as long as radicle (A1/r=3.84), as long as clava (A1/cl=0.98).

Eopomial carina present, diminishing medially; cervical pronotal area smooth, with scattered setae; lateral pronotal area near eomial carina reticulate, with few crenulae above pronotal ventral projection; netrion sulcus complete; netrion sculpture not extending onto lateral pronotal area; pronotal supralumeral and cervical sulci complete, foveolate; mesoscutum about 1.5 times as wide as long (TSL/ML=1.55); notaulus short, reduced, not reaching transscutal line; reticulate sculpture of mesoscutum extending to lateral notaular area; not extending to internotaular area; mesoscutellum 2 times as wide as long (SW/SL=2.00); scuto-scutellar sulcus distinctly diminishing medially, 3–4 times as wide laterally as in the middle; mesoscutellum...
smooth, with sparse, long setae; posterior scutellar sulcus extending onto axillula; sternaulus not separated from anterior row of foveae of mesopleural carina, distance between postacetabular sulcus and anterior row of foveae of mesopleural carina 3–4 times as wide as foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae, maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus 5 times as long as width of row of foveae of mesopleural carina; sulcus along metapleural carina foveolate; metascutellum sharply pointed; propodeal lateral carinae inverted V-shaped, shafts slightly curved outward; propodeal lateral area and plical area obscured by pale, dense setae, marginal striation not extending medially; posterior propodeal projection absent; fore wing as wide as mesoscutum (TSL/WW = 0.94); marginal vein 4 times as long as stigmal vein (m/st = 3.30); hind wing almost three times as wide as marginal cilia length (HWW/HWS = 2.91).

T1 about 2 times as wide as T1+T2 length (T1W/T1+T2L = 1.91); T3 as wide as mesoscutum (T3W/TSL = 0.94), costae on T3 extending to middle of tergum; lateral patch distinct; diameter of posterior patch of T3 nearly equal to width of one basal depression; lateral and median patches on T4 present not fused.

**Variability** (n=20): Length=0.98–1.39 mm (m=1.17, SD=0.13); interantennal process in smaller specimens concolor with head; FCI=1.20–1.25 (m=1.22, SD=0.02); LCI=1.66–1.85 (m=1.73, SD=0.05); HW/IOS=1.54–1.66 (m=1.60, SD=0.05); HW/TSL=1.34–1.50 (m=1.40, SD=0.04); Facial striae reduced in smaller specimens, not extending midlevel along inner orbit; POL/OOL=2.90–3.25 (m=3.09, SD=0.13); OOL/LOL=0.63–0.75 (m=0.69, SD=0.03); A1/r=3.70–4.00 (m=3.87, SD=0.12); A1/cl=0.90–1.07 (m=0.97, SD=0.06); TSL/ML=1.45–1.52 (m=1.48, SD=0.03); SW/SL=1.95–2.0 (m=1.99, SD=0.04); TSL/WW=0.93–1.50 (m=0.98, SD=0.05); m/st=3.00–3.33 (m=3.23, SD=0.06); HWW/HWS=2.63–3.50 (m=1.17, SD=0.13); T1W/T1+T2L=1.82–2.00 (m=1.91, SD=0.07); T3W/TSL=0.90–0.96 (m=0.93, SD=0.02), in smaller specimens costae reduced on T3, not exceeding middle of tergum.

**Male** (n=10): Length=1.14–1.32 (m=1.20, SD=0.06); A1 and apices of flagellomeres yellow, coxa yellow to bright brown; head wider (FCI=1.29–1.34, m=1.31, SD=0.02) and longer (LCI=1.50–1.62, m=1.56, SD=0.05); HW/IOS=1.42–1.51 (m=1.48, SD=0.03); HW/TSL=1.33–1.39 (m=1.36, SD=0.02); frontal patch less transverse; OOL longer (POL/OOL=2.50–2.72, m=2.59, SD=0.07); OOL/LOL=0.90–1.00, m=0.97, SD=0.05); A1/r=3.75–4.08 (m=3.98, SD=0.13); A5 modified; A7–A11 double bottled, with distinct constrictions; flagellomeres with specialized brushes; TSL/ML=1.30–1.37 (m=1.34, SD=0.02); notaulus longer, extending to transscutal line; SW/SL=1.95–2.04 (m=2.00, SD=0.03); posterior row of foveae of mesopleural carina reduced, sometimes absent ventrally; TSL/WW=0.81–0.98 (m=0.90, SD=0.08); m/st=3.50–4.20 (m=3.97, SD=0.38); HWW/HWS=2.33–2.72 (m=2.55, SD=0.15); metasoma longer (T1W/T1+T2L=1.44–1.68, m=1.58, SD=0.07); T3W/TSL=0.95–1.04, m=0.94, SD=0.04); costae reduced on T3, not extending to middle of tergum; diameter of posterior patch of T3 equal to width of 2–3 basal depressions.

**Diagnosis.** Differs from other related species of the *comatus* group by POL 3 times as long as OOL. Most closely related to *Xenomerus aureipes*, differs by POL/OOL, incomplete central keel, presence of genal patch, shortened notaulus in female and sculptured vertex in male.

**Etymology.** Named after Antony Watsham, the collector of numerous specimens of this species.

**Material examined. Holotype female: BOTSWANA:** Central District, Serowe/Palapye, Serowe, Farmer's Brigade, -22.3833, 26.7167, XII.1987, F.Forchhammer, MT [CNCI: 23923]. **Paratypes: BENIN:** Atlantique Department, Cotonou, Abomey-Calavi ca. 25km North of Cotonou, XII.1988, J.S.Noyes, MT, 1♀ [BMNH], 3♂, 1♂. **BOTSWANA:** Central District, Serowe/Palapye, Serowe Farmer's Brigade, -22.3833, 26.7167, VIII.1987, F.Forchhammer, MT, 1♂; Central District, Serowe/Palapye, Serowe Farmer's Brigade, -22.3833, 26.7167, X.1987, F.Forchhammer, MT, 1♀. **BURKINA FASO:** Gourma Region, Kompienga Province, 15km West of Pama, 15–24.IX.1988, F.Génier & M.Sanborne, savane, filet fauchoir, 1♂; Gourma Region, Kompienga Province, 20km South of Pama, 3–24.IX.1988, F.Génier, M.Sanborne, F.M.Tou, MT, savanna, 1♀; Gourma Region, Kompienga Province, 20km South of Pama, 1–16.VI.1988, Sanborne, Landry & Tou, Savane, lit de rivière, p.á intercept, 1♀. **CÔTE D'IVOIRE:** Vallée du Bandama Region, Bouaké, IV.1980, P.Cochereau, 1♂; Vallée du Bandama Region, Bouaké, 01.X.1981, P.Cochereau, 1♂. **KENYA:** Central Province, Njukiini Forest, 1455m, ca. -0.5191, 25.4166, 1–
Xenomerus yamagishii Mikó & Masner, new species

Figures 46, 47

**FEMALE** (HT): Length=0.89 mm.

Yellowish-brown (ochre); A3–A2, T3 posteriorly and T4–T6 entirely dark brown; **FCI**=1.14; **LCI**=1.73; **HW/IOS**=1.58; head less than 1.5 times as wide as mesosoma (**HW/WSL**= 1.3); facial striae not exceeding midlevel of eye; frontal patch distinct; frons setae dense, setae thin; central keel complete; toruli triangle shorter than clypeus height; POL almost as long as OOL (**POL/OOL**=1.15); OOL more than 1.5 times as long as LOL (**OOL/LOL**=1.62); hyperoccipital carina absent; vertex patch present, with diameter equal to lateral ocellus; vertex setae denser behind POL area; genal patch absent; A1 more than 5 times as long as radicle (**A1/r**=5.37), as long as clava (**A1/cl**=1.07).

Epomial carina absent; cervical pronotal area smooth, with scattered setae along lateral and dorsal margin; lateral pronotal area near epomial carina reticulate, with scattered setae, ventrolaterally smooth; netrion sulcus incomplete; pronotal suprahumeral sulcus diminishing medially, foveolate; pronotal cervical sulcus not foveolate; anterior tip of pronotum reduced; mesoscutum more than 1.5 times as wide as long (**TSL/ML**=1.82); notaulus absent; mesoscutum with dense setae; mesoscutum sculpture extending to posterior margin; mesoscutellum 2 times as wide as long (**SW/SL**=2.02); scuto-scutellar sulcus slightly diminishing medially, 1.5 times as wide laterally as in the middle; mesoscutellum anteriorly punctate, with fine wrinkles between punctures, with dense setae; posterior scutellar sulcus extending onto axillula; sternaus not separated from anterior row of foveae of mesopleural carina; distance between postacetabular sulcus and anterior row of foveae of mesopleural carina 2.5 times as long as foveae width of postacetabular sulcus; mesopleural carina complete, with complete rows of foveae, maximal distance between posterior row of foveae of mesopleural carina and mesepimeral sulcus 2 times as long as width of posterior row of foveae of mesopleural carina; sulcus along metapleural carina foveolate; metascutellum bluntly triangular, entirely striated; propodeal lateral carinae S- shaped; propodeal lateral area and plical area obscured by sparse setae,
entirely striated; posterior propodeal projection distinct, tuberclelike; fore wing almost as wide as mesoscutum (TSL/WW=1.13); marginal vein more than 3 times as long as stigmal vein (m/st=3.1); hind wing less than 2 times as wide as marginal cilia length (HWW/HWS=1.76).

T1 about 1.5 times as wide as T1+T2 length (T1W/T1+T2L=1.57); T3 as wide as mesoscutum (T3W/TSL=1.01); basal depressions thin; costae exceeding to middle of tergum; lateral patch indistinct; diameter of posterior patch of T3 nearly equal to width of one basal depression, indistinct; T3 with dense setae laterally; apical setae of T3 elongate, more than two times as long as lateral setae of tergum; lateral patch on T4 present, median patch absent.

**Variability** (n=11): Length=0.86–1.05 mm (m=0.93, SD=0.07); sometimes mesoscutellum dark ochre; FCI=1.13–1.18 (m=1.16, SD=0.01); LCI=1.64–1.88 (m=1.73, SD=0.07); HW/IOS=1.56–1.75 (m=1.63, SD=0.05); HW/TSL=1.22–1.30 (m=1.28, SD=0.02); POL/OOL=1.00–1.15 (m=1.10, SD=0.04); OOL/LOL=1.62–1.77 (m=1.68, SD=0.04); A1/r=5.87–6.42 (m=6.13, SD=0.16); A1/cl=1.06–1.16 (m=1.11, SD=0.03); TSL/ML=1.75–1.92 (m=1.84, SD=0.05); SW/SL=1.90–2.23 (m=2.05, SD=0.09); TSL/WW=0.98–1.19 (m=1.09, SD=0.07); m/st=2.91–3.10 (m=2.28, SD=0.04); HW/HWW=1.76–2.38 (m=2, SD=0.25); T1W/T1+T2L=1.5–1.75 (m=1.66, SD=0.09); T3W/TSL=1.00–1.09 (m=1.02, SD=0.03), sometimes T4 reticulate medially, smooth submedially.

**MALE** (n=5): length=0.93–1.11 (m=0.99, SD=0.07); A1–2 yellow to light brown, A3–A12 light brown to dark brown, metasoma mesonotum and vertex around ocelli brown; head wider (FCI=1.28–1.34, m=1.30, SD=0.02); LCI=1.56–1.65, m=1.61, SD=0.04); HW/IOS=1.50–1.60 (m=1.55, SD=0.03); HW/TSL=1.33–1.44 (m=1.38, SD=0.04); OOL longer than POL (POL/OOL=0.83–0.95, m=0.86, SD=0.04) OOL/LOL=2.11–2.33 (m=2.23, SD=0.08); A1/r=3.75–4.60 (m=4.28, SD=0.34); A5 modified; A7–A11 with two whorls of setae and weak (Thailand) or strong (Japan) constrictions in-between; flagellomeres with 5–6 (Japan) or 10–12 (Thailand) ventral microcilia; TSL/ML=1.66–1.85 (m=1.73, SD=0.07); notaulus present, almost exceeding TSL; SW/SL=2.00–2.25 (m=2.11, SD=0.11); TSL/WW=0.73–0.86 (m=0.82, SD=0.05); m/st=3.00–3.33 (m=3.20, SD=0.04); HW/HWW=1.73–2.13 (m=1.89, SD=0.18); T1W/T1+T2L=1.15–1.50 (m=1.34, SD=0.13); T3W/TSL=0.96–1.06 (m=1.00, SD=0.04).

**Diagnosis.** Most closely related to Xenomerus ochraceus, differing by the complete central keel, thin basal depressions on T3 and POL/OOL. Shared with Xenomerus guinensis the thin basal depressions and elongated costae on T3 extending to middle of tergum and differs by complete central keel and dense setae on frons.

**Eymology.** Named after Kenzo Yamagishi, who collected some of the type material of this species.


Xenomerus flavicornis Dodd, 1914: 84. Deposited in SAMC; type lost.

On the basis of remained body parts and original description Xenomerus indicus could be conspecific with X. canariensis. On the basis of the original descriptions Xenomerus solox and X. forax could be conspecific with X. orientalis. Xenomerus atomus could be conspecific with Xenomerus orientalis n. sp. or with Xenomerus spinosus n. sp. based on personal communication with K. Rajmohana.

Holotype is deposited in CNCI. Paratypes are deposited in BMNH (3), CNCI (45), ZLMU (2) QSBG (5), ROME (3).
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Reference


FIGURES 1–4. Generalized Teleasinae. 1, mesosoma, dorsal view; 2, head, dorsal view; 3, fore wing venation; 4, head, anterior view.
FIGURES 5–8. 5,6 generalized Teleasinae. 5, metasoma ventral view; 6, metasoma, dorsal view; 7, *Xenomerus ergenna* Walker, ♂, posterior felt field; 8, *Trimorus nitidulus* Thomson, ♀, S2 and anterior S3, dorsal (internal) view. Scale bar=0.1mm.
FIGURES 22–27. 22, Xenomerus ergenna Walker, ♀, mesosoma and head, lateral view; 23, X. vanharteni, sp. n., ♀, mesosoma and head, lateral view; 24, X. vanharteni sp. n., ♀, mesosoma and head, dorsal view; 25, X. ergenna Walker, ♀, mesosoma and head, dorsal view; 26, X. buccatus Kononova & Kozlov, ♀, mesosoma and head, dorsal view; 27, X. calligetus Kononova & Kozlov, ♀, head and mesosoma, dorsal view. Scale bar=0.1 mm.
FIGURES 46–51. 46, Xenomerus yamagishii sp. n., ♀, head, anterior view; 47, X. yamagishii sp. n., ♂, metasoma, dorsal view; 48, X. ochraceus sp. n., ♀, metasoma, dorsal view; 49, X. guinensis sp. n., ♂, metasoma, dorsal view; 50, X. ergenna Walker, ♀, mesosoma, posterior view; 51, X. ochraceus sp. n., ♀, mesosoma, anterolateral view. Scale bar=0.1mm.
FIGURES 52–57. 52, *Xenomerus halteratus* sp. n., ♀, metasoma, dorsal view; 53, *X. rugifrons* sp. n., ♀, metasoma, dorsal view; 54, *X. halteratus* sp. n., ♀, head and mesosoma, dorsal view; 55, *X. armatus* sp. n., ♀, head and mesosoma, dorsal view; 56, *X. halteratus* sp. n., ♀, head anterior view; 57, *X. armatus* sp. n., ♀, head, anterior view. Scale bar=0.1mm.
FIGURES 58–63. 58, Xenomerus halteratus sp. n., ♀, mesosoma, anteroventral view; 59, X. rugifrons sp. n., ♀, mesosoma, anterior view; 60, X. comatus sp. n., ♀, head and mesosoma, lateral view; 61, X. comatus sp. n., ♀, head and mesosoma, dorsal view; 62, X. comatus sp. n., ♀, metasoma, dorsal view; 63, X. comatus sp. n., ♀, head, anterior view. Scale bar=0.1mm.
FIGURES 64–69. 64, *Xenomerus watshami* sp. n., ♀, head and mesosoma, dorsal view; 65, *X. watshami* sp. n., ♀, head, anterior view; 66, *X. parorinetalis* sp. n., ♀, head and anterior mesosoma, dorsal view; 67, *X. orientalis* sp. n., ♀, head and anterior mesosoma, dorsal view; 68, *X. parorinetalis* sp. n., ♀, head, anterior view; 69, *X. orientalis* sp. n., ♀, head, anterior view. Scale bar= 0.1 mm.
FIGURES 70–75. 70, Xenomerus aureipes sp. n., ♀, head and mesosoma, dorsal view; 71, X. aureipes sp. n., ♀, head, posterior view; 72, X. scutellatus sp. n., ♀, mesosoma, dorsal view; 73, X. melikai sp. n., ♀, head and mesosoma, dorsal view; 74, X. varipes Dodd, ♀, head, anterior view; 75, X. laticeps Dodd, ♀, metasoma, dorsal view. Scale bar= 0.1 mm.
FIGURES 76–81. 76, *Xenomerus varipes* Dodd, ♀, mesosoma, lateral view; 77, *X. laticeps* Dodd, ♀, mesosoma, lateral view; 78, *X. varipes* Dodd, ♂, head and mesosoma, dorsal view; 79, *X. laticeps* Dodd, ♀, head and mesosoma, dorsal view; 80, *X. gloriosus* sp. n., ♀, head, anterior view; 81, *X. gloriosus* sp. n., ♀, head and mesosoma, dorsal view; *arf*: anterior row of fovea of mesopleural carina, *prf*: posterior row of foveae of mesopleural carina. Scale bar= 0.1 mm.
FIGURES 82–87. 82, *Xenomerus gloriosus* sp. n., ♀, head and mesosoma, anterolateral view; 83, *X. bickeli* sp. n., ♀, head and mesosoma, anterolateral view; 84, *X. bickeli* sp. n., ♀, head and mesosoma, dorsal view; 85, *X. malawi* sp. n., ♀, mesosoma, dorsal view; 86, *X. feehani* sp. n., ♀, head, anterior view; 87, *X. kalocsai* sp. n., ♀, head, anterior view. Scale bar= 0.1 mm.
FIGURES 88–93. 88, Xenomerus kalocsaï sp. n., ♀, head and mesosoma, dorsal view; 89, X. feehani sp. n., ♀, head and mesosoma, dorsal view; 90, X. kalocsaï sp. n., ♀, metasoma, dorsal view; 91, X. feehani sp. n., ♀, metasoma, dorsal view; 92, X. noyesi sp. n., ♂, metasoma, dorsal view; 93, X. noyesi sp. n., ♂, head and mesosoma, lateral view. Scale bar= 0.1 mm.
FIGURES 94–99. 94, *Xenomerus melleus* sp. n., ♂, head, anterior view; 95, *X. ochraceus* sp. n., ♂, head, anterior view; 96, *X. melleus* sp. n., ♂, head and mesosoma, dorsal view; 97, *X. ochraceus* sp. n., ♂, head and mesosoma, dorsal view; 98, *X. melleus* sp. n., ♂, mesosoma, anterolateral view; 99, *X. hilleri* sp. n., ♂, head, anterior view. Scale bars= 0.1mm.
FIGURES 100–105. 100, Xenomerus orientalis sp. n., ♂, head and mesosoma, dorsal view; 101, X. hilleri sp. n., ♂, head and mesosoma, lateral view; 102, X. hilleri sp. n., ♂, head and mesosoma, dorsal view; 103, X. varipes Dodd, ♂, head and mesosoma, dorsal view; 104, X. laticeps Dodd, ♂, head and mesosoma, dorsal view; 105, X. laticeps Dodd, ♂, head, anterior view, Scale bar= 0.1 mm.
FIGURES 106–111. 106, Xenomerus aureipes sp. n., ♂, head, anterior view; 107, X. watshami sp. n., ♂, head, anterior view; 108, X. aureipes sp. n., ♂, head and mesosoma, dorsal view; 109, X. watshami sp. n., ♂, head and mesosoma, dorsal view; 110, Xenomerus melleus sp. n., ♂, metasoma, ventral view; 111, X. halteratus sp. n., ♀, metasoma, ventral view. Scale bar= 0.1 mm.
FIGURES 112–117. 112, *X. ergenna* ♂, Walker, metasoma, ventral view; 113, *X. ochraceus* sp. n. ♂, metasoma, ventral view. 114, *Xenomerus comatus* sp. n., ♂, metasoma, ventral view; 115, *X. feehani* sp. n., ♂, metasoma, ventral view; 116, *X. scutellatus* sp. n., ♂, metasoma, ventral view; 117, *X. watshami* sp. n., ♂, metasoma, ventral view. Scale bar=0.1mm.