

Order Coleoptera, family Staphylinidae

Subfamily Pselaphinae

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INTRODUCTION

The first Pselaphinae of the Arabian Peninsula were found by Dr. Millingen in Taïf (Saudi Arabia), which lies in the mountains of Hedjaz alongside the Red Sea; they were described by A. Raffray (1887) as *Enoptosomus nitidulus*, *Desimia arabica* and *Psilcephalus lewisi*, together with *Ctenistes parviceps* from the Oasis of the Hadj, in the vicinity of Aden (Yemen). Later, *Trissemus brittoni* Jeannel, 1951, *Parabatriscus scotti* Jeannel, 1951, *Brachygluta tumidipes* Besuchet, 1981, and *Trissemus maroccanus wittmeri* Besuchet, 1981, were described from Saudi Arabia, bringing the total of species of pselaphines from this large country to eleven.

In the present study, based on extensive collections from the United Arab Emirates made during the last decade by A. van Harten, we recognize a total of seventeen species of Pselaphinae, of which 10 are new to science: *Biblopectus eximius* nov. spec., *B. gracilentus* nov. spec., *B. incredibilis* nov. spec., *Centrophthalmus persimilis* nov. spec., *C. tempestivus* nov. spec., *Commatocerus concinnus* nov. spec., *Ctenisomorphus fortipalpis* nov. spec., *Enoptostomus arabicus* nov. spec., *Philotrimium disseminatum* nov. spec., and *Trissemus vanharteni* nov. spec.. In addition, *Ctenisoschema* Jeannel, 1956, a monotypic genus based on *Ctenisomorphus garamantica* Peyerimhoff, 1929, is synonymized with *Ctenisomorphus* Raffray, 1890 (nov. syn.).

In the studied material the most frequent species from the United Arab Emirates was *Enoptostomus arabicus* (226 specimens), while four species were represented by not more than two individuals (*Biblopectus incredibilis*, *Centrophthalmus persimilis*, *C. tempestivus*, *Commatocerus concinnus*).

MATERIALS AND METHODS

This study is based on a total of 602 specimens, of which 568 from the United Arab Emirates. The type material of the new species is deposited in the Muséum d'histoire naturelle, Geneva, Switzerland (MHNG) and in the Národní Muzeum, Prague, Czech Republic (NMPC). Unless specified, the paratypes and additional material collected in the United Arab Emirates are deposited in MHNG and the United Arab Emirates Invertebrate Collection (UAEIC).

Abbreviations used: AvH = leg. A. van Harten; LT = light trap; MT = Malaise trap; WT = water traps.

SYSTEMATIC ACCOUNT

Subfamily **Pselaphinae** Latreille, 1802

Tribe **Trichonychini** Reitter, 1882

Genus *Philotrimium* Blatný, 1905*Pseudozibus* Jeannel, 1956

The genus *Philotrimium* Blatný, 1925 contains five species: *P. abdominale* (Motschulsky, 1851) from Burma, *P. crassipes* (Raffray, 1908) from Italy, *P. longicolle* (Jeannel, 1958) from Japan, *P. simplicipenne* (Jeannel, 1958) from Zaire, and *P. disseminatum*, which is described below.

***Philotrimium disseminatum* Besuchet & Cuccodoro nov. spec.**

Plate 1, Figures 1–3

Specimens examined: Holotype: ♂ (MHNG), “UNITED ARAB EMIRATES, Wadi Safad <25.13N; 56.19E> 15–22.04.2006, leg. A. van Harten, in light-trap, UAE 8256”. Paratypes (42): 1♂; same data as holotype, but 31.i–21.ii.2006. 1♀, al-Ajban, 9.xi–7.xii.2005, LT & MT, AvH; 1♀, 6–22.v.2006, LT, AvH; 1♀, 7–28.xii.2006, LT & MT, AvH. 1♂, Fujairah, 28.ii–1.iv.2006, LT, AvH; 3♂, 3♀, 8–29.iv.2006, LT, AvH; 1♂, 15–22.iv.2006, LT, AvH; 6♂, 20–27.v.2006, LT, AvH. 1♂, Hatta, 24–30.ii.2006, LT, AvH. 1♂, 4–11.iv.2006, LT, AvH. 1♀, near al-Hayer 30.01.2005, from leaf litter, AvH. 1♂, 1♀, near Mahafiz, 29.xii.2005–7.ii.2006, LT, AvH. 4♂, 1♀, Sharjah, 27.iv–5.vi.2005, LT, AvH. 1♀, Sharjah Desert Park, 29.iii–6.iv.2005, LT, AvH. 3♂, 2♀, Wadi Bih dam, 24.iv–1.v.2007, LT, AvH; 1♀, 6–13.v.2007, LT, AvH. ISRAEL: 4 ♀, Galilea, Jinosar, –200m, 28.iv.1982, in leaf litter, leg. C. Besuchet & I. Löbl (MHNG). 1♀, Jordan Valley, Bet She’an, The Hawwat “Eden Agricultural Experiment Station”, vi.1986, LT, leg. Q. Argaman (MHNG); 1♀, same data but 15.vii.1990 (MHNG). YEMEN: 1♂, Ta’izz, xi.1999, LT, AvH & A. Awad (MHNG).

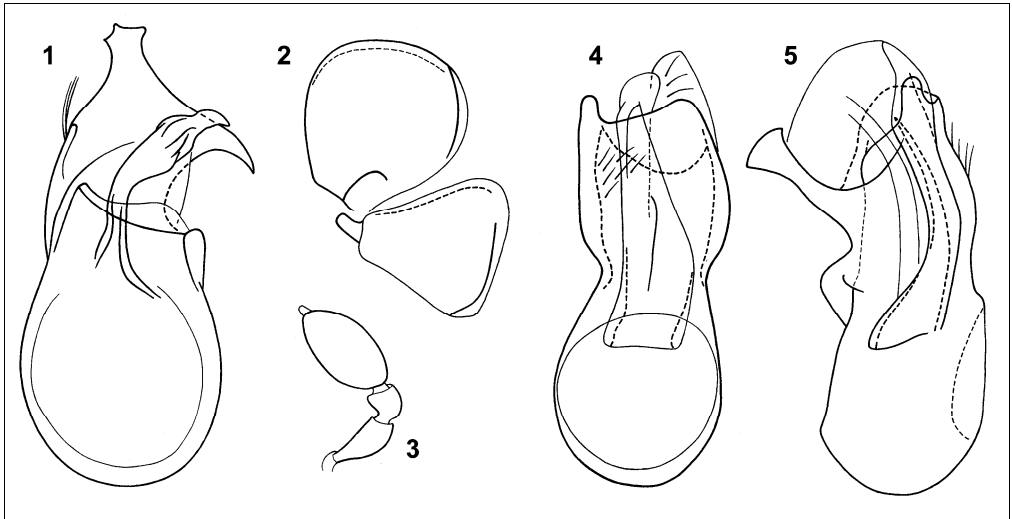
Description: Body (Plate 1) 1.00–1.10 mm long, rather convex, uniformly pale reddish-brown, with pubescence on pronotum, elytra and abdomen short and recumbent. Eyes well developed, protruding. Maxillary palpi as in Figure 3. Antennae (length 0.28 mm) with article 3 slightly longer than wide, 4–8 all similar and distinctly wider than long, 9 slightly wider and distinctly wider than long; club (length 0.11 mm) consisting of two articles (10 and 11), the penultimate almost as wide as the terminal and wider than long. Interocular fovae small, but well marked. Pronotum (length 0.25 mm; width 0.22 mm) with a pair of minute laterobasal fovae. Elytra (length 0.35 mm; combined width 0.39 mm) with the two sutural striae entire, lacking basal fovae. Abdomen (length 0.40 mm; width 0.36 mm) characterized by first visible tergite (length 0.18 mm; width 0.36 mm) larger, bearing two minute basal carinae separated from each other by 0.15 mm. Legs rather long and slender. Metathoracic wings membranose and well developed. Pro-, meso- and metacoxae contiguous.

Male. Eyes slightly wider than female (0.05/0.08 mm). Mesotibiae very slightly notched on apical third. Aedeagus as in Figure 1 (length 0.26–0.28 mm) asymmetrical. Operculum (last ventrite) rounded, with an hemisternite on each side (Fig. 2).

Comments: *Philotrimium disseminatum* resembles the only other West Palaearctic member of the genus, *P. crassipes* (Raffray, 1908), from which it differs by its body being less convex with a slightly longer pronotum, by the absence of interocular pits, by the eyes being markedly smaller, and by the antennomeres ten short and transverse. Its aedeagus is also smaller and almost symmetrical.

Tribe **Euplectini** Streubel, 1839Genus *Biblopectus* Reitter, 1882

Almost all the *Biblopectus* of the West Palaearctic region (32 species) have the body blackish, or dark brown, while the three new species described below from the United Arab Emirates all have the body pale yellow-brown. These very small filiform Pselaphines show very little external interspecific differences, but their very complex aedeagi facilitate their identification.



Figures 1–5. 1–3: *Philotrimium disseminatum* nov. spec. 1: Aedeagus in dorsal view; 2: Operculum with one hemisternite; 3: Maxillary palpus. 4, 5: *Leptoplectus remyi* (Jeannel). 4: Aedeagus in dorsal view; 5: Aedeagus in lateral view.

***Biblopectus eximius* Besuchet & Cuccodoro nov. spec.**

Plate 2, Figures 9–11

Specimens examined: Holotype: ♂ (MHNG): “UNITED ARAB EMIRATES, Fujairah <25.08N; 56.21E> 28.02–01.04.2006, leg. A. van Harten, in light-trap, UAE 4149”. Paratypes (44): 5♂, 12♀, same data as holotype; 1♀, same data, but 8.xii.2005–2.i.2006; 1♂, 1♀, same data, but 28.ii–21.iii.2006; 1♂, 2♀, same data, but 1–8.iv.2006; 3♂, 5♀, same data, but 8–29.iv.2006; 1♀, same data, but 15–22.iv.2006; 2♀, same data, but 10–17.vi.2006. 2♀, Wadi Madaq, 2–16.ii.2006, LT, AvH; 3♂, 4♀, 1–8.vii.2006, LT, AvH. 1♀, Wadi Wurayah farm, 22.ii–2.iii.2009, LT, AvH.

Description: Body (Plate 2) 0.90–1.00 mm long. Head 0.19 mm wide. Pronotum as wide as long (length 0.19 mm; width 0.20 mm). Elytra 0.29–0.30 mm long.

Male. Metaventrite with a medial depression shallow and quite large. Mesofemora stout, 0.06 mm wide. Posterior margin of abdominal sternite 4 with narrow and deep medial notch (width 0.04 mm). Aedeagus as in Figures 9 and 10 (length 0.17–0.18 mm). Operculum (last ventrite) as in Figure 11.

Female. Pygidium rounded, bearing a black minute spike.

Comments: *Biblopectus eximius*, *B. gracilentus* and *B. incredibilis* are the only members of the genus having the body pale yellow-brown. *Biblopectus eximius* can be distinguished from *B. gracilentus* nov. spec. and *B. incredibilis* nov. spec. by the shape of the male abdominal sternite four, which has the posterior margin not notched medially. The shape of its aedeagus is diagnostic.

***Biblopectus gracilentus* Besuchet & Cuccodoro nov. spec.**

Figures 6–8

Specimens examined: Holotype: ♂ (MHNG): “UNITED ARAB EMIRATES, Hatta <24.49N; 56.87E> 04–11.04.2006, leg. A. van Harten, in light-trap, UAE 8473”. Paratypes (16): 4♂, 6♀, same data as holotype; 1♀, same data, but 24–30.iii.2006. 1♂, al-Ajban, 9.xi–7.xii.2005, LT & MT, AvH; 1♂, 1♀,

6–22.v.2006, LT, AvH. 1♀, Sharjah Desert Park, 22.xi.2004, beaten from vegetation, AvH; 1♂, 23.iii–6.iv.2005, LT, AvH.

Description: Body (similar to Plate 2) 0.80–0.90 mm long. Head 0.18 mm wide. Pronotum slightly wider than long (length 0.16 mm; width 0.19 mm). Elytra 0.26–0.27 mm long.

Male. Metaventricle evenly convex, without medial depression. Mesofemora 0.04 mm wide. Posterior margin of abdominal sternite 4 slightly triangular in middle, entire. Aedeagus as in Figures 6 and 7 (length 0.12–0.13 mm). Operculum (last ventrite) as in Figure 8.

Female. Pygidium triangular, apically rounded.

Comments: *Biblopectus gracilentus* and *B. incredibilis* have the male abdominal sternite four medially notched, while it is entire in *B. eximius*. The shape of their aedeagus is diagnostic. See comments under *B. eximius*.

***Biblopectus incredibilis* Besuchet & Cuccodoro nov. spec.**

Figures 12, 13

Specimens examined: Holotype: ♂ (MHNG): “UNITED ARAB EMIRATES, Wadi Bih dam <25.48N; 56.04E> 01–15.03.2007, leg. A. van Harten, in light-trap, UAE 10297”.

Description: Body (similar to Plate 2) 1.10 mm long. Head 0.30 mm wide. Pronotum as wide as long (length 0.20 mm; width 0.21 mm). Elytra 0.31 mm long.

Male. Metaventricle with a medial depression shallow and narrow. Mesofemora stout, 0.06 mm wide. Posterior margin of abdominal sternite 4 with narrow and deep medial notch (width 0.05 mm). Aedeagus as in Figure 12 (length 0.17–0.18 mm). Operculum (last ventrite) as in Figure 13.

Female. Unknown.

Comments: See comments under *B. eximius* and *B. gracilentus*.

Genus ***Leptoptectus*** Casey, 1908

The genus *Leptoptectus* contains fifteen species from the Palaearctic, East Nearctic, Oriental and South Pacific regions. One of them occurs in the UAE.

Leptoptectus remyi (Jeannel, 1961).

Plate 3, Figures 4, 5

Specimens examined: (35): Fujairah, 1♂, 8.xii.2005–2.i.2006; 4♂, 3♀, 28.ii–1.iv.2006; 3♀, 1–8.iv.2006; 6♂, 8♀, 8–29.iv.2006; 1♂, 15–22.iv.2006; 1♂, 2♀, 20–27.v.2006; 2♀, 10–17.vi.2006; all LT, AvH. Hatta, 1♀, 22–29.i.2006, LT, AvH. Sharjah, 2♂, 1♀, 28.vi–23.vii.2005, LT, AvH.

Diagnosis: Aedeagus as in Figures 4 and 5.

Distribution: This Pselaphine described from Sri Lanka has subsequently been recorded from India, Nepal, Japan, Senegal (in rotting wood of baobab), Switzerland (in composts) (Besuchet, 1999), and now also from the UAE.

Tribe ***Brachyglutini*** Raffray, 1904

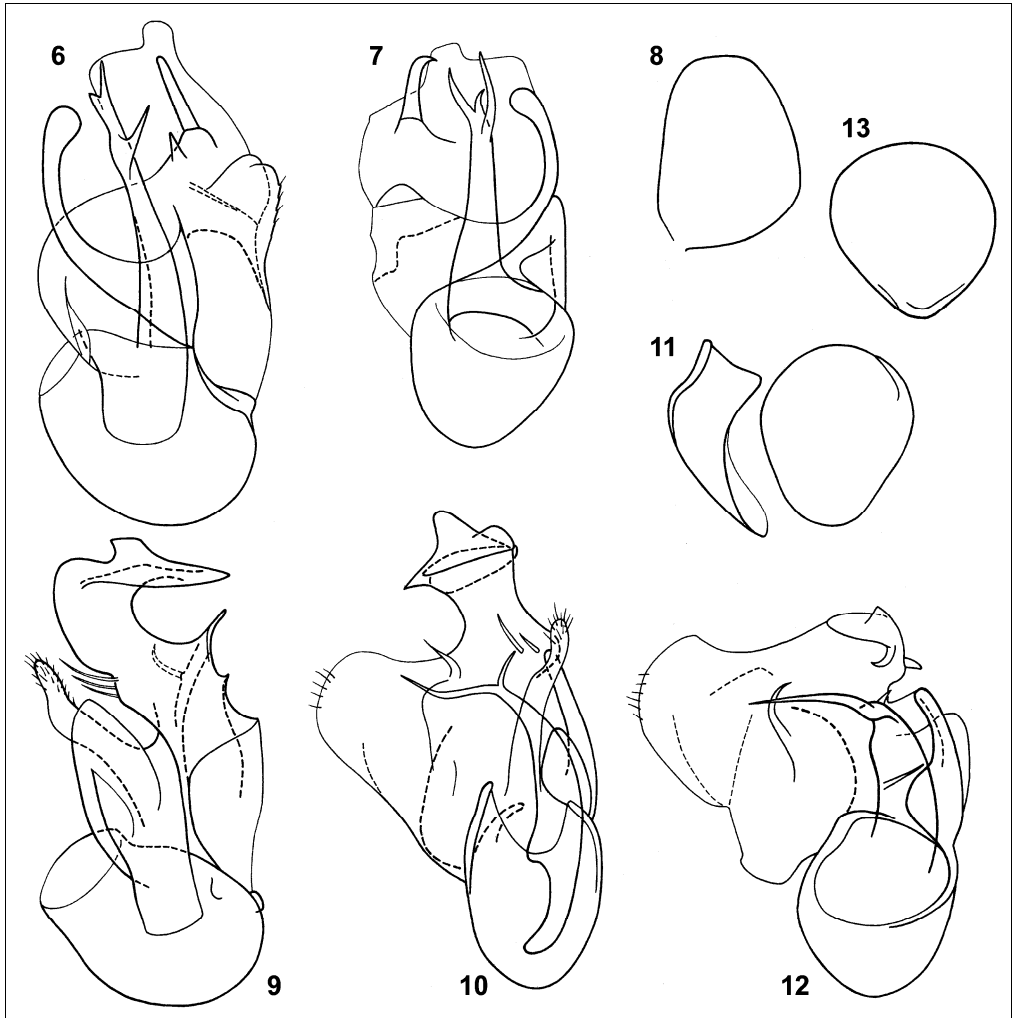
Genus ***Brachygluta*** Thomson, 1859

Brachygluta contains over one hundred species from the Afrotropical, Holarctic and Oriental regions. *Brachygluta larica* Sabella, 2004 (p. 75; p. 206: Fig. 125) and *B. martinae* Bückle, 2004 (p. 136; p. 206: Fig. 191) have been described recently from the South of Iran, where they were found near partially dry rivers. These two species also occur in the UAE.

Brachygluta larica Sabella, 2004

Plate 4

Specimens examined: (2): 1♂, 1♀, Hatta, 4–11.iv.2006, LT, AvH.



Figures 6–13. 6–8: *Biblopectus gracilentus* nov. spec. 6: Aedeagus in lateral view; 7: Aedeagus in dorsal view; 8: Operculum. 9–11: *Biblopectus eximius* nov. spec. 9: Aedeagus in lateral view; 10: Aedeagus in dorsal view; 11: Operculum with one hemisternite. 12–13: *Biblopectus incredibilis* nov. spec. 12: Aedeagus in dorsal view; 13: Operculum.

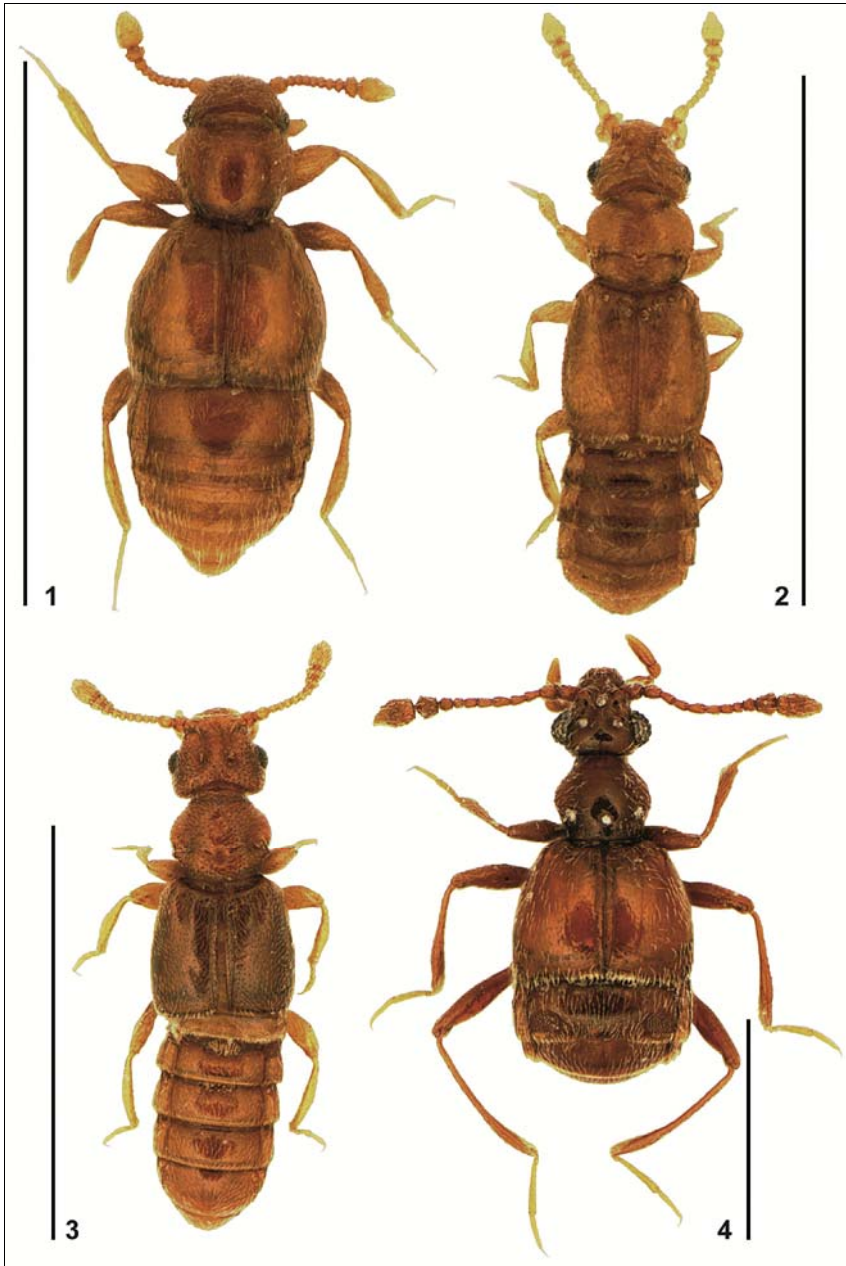
***Brachygluta martinae* Bückle, 2004**

Plate 5

Specimens examined: (2): Wadi Siji, 1♂, 24.ix–22.x.2006, WT, AvH. Sharjah-Khor Kalba, near tunnel, 7–22.iii.2006, LT, AvH.

Genus ***Trissemus*** Jeannel, 1949

Trissemus is a large genus of Pselaphinae containing some one hundred and thirty species from the African, Palearctic and Oriental regions. It is represented in the UAE by two species.



Plates 1–4. 1: *Philotrimium disseminatum* nov. spec., habitus; 2: *Biblopectus eximius* nov. spec., habitus; 3: *Leptoplectus remyi* (Jeannel), habitus; 4: *Brachygluta larica* Sabella, habitus. Scale bars = 1 mm.

***Trissemus maroccanus maroccanus* (Raffray, 1904)**

Specimens examined: (28): Fujairah, 1♂, 8–29.i.2006, LT, AvH. Hatta, 1♂, 19–28.iii.2006; 1♂, 24–30.iii.2006; 7♂, 6♀, 8–26.iv.2006; all LT, AvH. Near Mahafiz, 1♂, 2.ii–2.iii.2006, LT, AvH. Sharjah-Khor Kalba, near tunnel, 1♂, 2♀, 7–22.iii.2006, LT, AvH; 1♂, 4♀, 31.v–7.vi.2006, LT, AvH. Wadi Safad, 1♂, 17–24.vi.2006, LT, AvH. Wadi Wurayah, 1♀, 12–14.iv.2005, MT & WT, leg. T. Pape. Wadi Wurayah farm, 1♀, 15–30.iii.2009, LT, AvH.

Comments: This *Trissemus* has a predilection for desertic regions. It is known from Morocco (South), Algeria (Tassili), Tunisia (South), Saudi Arabia, Oman, and now also from the UAE.

Trissemus vanharteni* Besuchet & Cuccodoro *nov. spec.

Plate 6, Figure 14

Specimens examined: Holotype: ♂ (MHNG): “UNITED ARAB EMIRATES, Wadi Madaq <25.18N; 56.07E> 27.04–05.05.2006, leg. A. van Harten, in light-trap, UAE 6509”.

Paratypes (67): 29♂ & 16♀, same data as holotype. 1♂, 3♀, Hatta 4–11.iv.2006, LT, AvH. 2♂, near Mahafiz, 21–28.viii.2006, LT, AvH. 1♂, Sharjah-Khor Kalba, near tunnel, 7–22.iii.2006; 1♂, 31.v–7.vi.2006; 1♂, 7–14.vi. 2006; all LT, AvH. 2♂, Wadi Madaq, 27.iv–4.v.2006, LT, AvH. 2♀, Wadi Safad, 20.xii.2005–2.i.2006; 1♂, 31.i–21.ii.2006; 1♂, 15–22.iv.2006; 1♂, 17–24.vi.2006; 2♂, 2♀, 1–8.vii.2006; all LT, AvH. 1♂, Wadi Wurayah farm, 15.i–22.ii.2009, LT, AvH.

Description: Body (Plate 6) 1.75–1.90 mm long, uniformly pale reddish-brown, with pronotum, elytra and abdomen smooth and impunctate, covered with pubescence short and recumbent. Head (length 0.38 mm; width 0.39 mm) dorsally flattened, with three deep fovae of similar dimensions. Temples short, rounded. Eyes (0.15/0.14 mm) well developed, protruding. Maxillary palpi with last article 0.12 mm long and 0.07 mm wide. Antennae moderately long (0.79 mm) with articles 3–5 about 1.5 times longer than wide, 6 slightly shorter, 7 slightly wider than long, 8 markedly wider than long; club consisting of three articles (9–11), with article 9 slightly wider than flabellum and transverse, article 10 markedly wider than 9 and transverse, and terminal article in female almost two times longer than wide (length 0.18 mm; width 0.10 mm). Pronotum (length 0.35 mm; width 0.39 mm) almost spherical, with a pair of deep lateral fovae and a minute mediobasal fovea. Elytra (length 0.63 mm; combined width 0.78 mm) each with three minute laterobasal fovae prolonged mesally by sutural stria entire and externally by dorsal stria extended nearly to posterior margin. Abdomen (length 0.65 mm; width 0.72 mm) rather convex, characterized by first visible tergite (length 0.35 mm) bearing on basal third two slightly diverging carinae separated from each other at base by an interval slightly larger than third of basal tergal width. Male. Terminal antennomere (length 0.23 mm; width 0.12 mm) bearing internally on basal third a shallow depression bordered with a fine carina. Mesotibiae slightly enlarged in middle, bearing a robust subapical spur (length 0.07 mm). Aedeagus as in Figure 14 (length 0.32–0.35 mm).

Comments: The species is well characterized from *T. maroccanus* by the shape of the parameres and the structure of the internal sac of the aedeagus.

Etymology: The species is named after Antonius van Harten, Sharjah, UAE.

Tribe **Ctenistini** Blanchard, 1845

Genus *Epicaris* Reitter, 1882

This African genus contains only two species: *E. crassicornis* Raffray, 1913, from South Africa, and *E. ventralis* (Raffray, 1882), which is widely distributed in the African continent.

Epicaris ventralis (Raffray, 1882).

Plate 7

Specimens examined: (32): Near Mahafiz, 1♂, 29.xii.2005–7.ii.2006; 2♂, 24–30.iv.2006; 1♂, 21–28.viii.2006; 1♂, 7–14.ix.2006; all LT, AvH. Sharjah Desert Park, 1♀, 21.vii–5.viii.2005; 1♀, 28.v–4.vi.2007; 2♂, 20.x–24.xi.2007; all LT, AvH. Sharjah-Khor Kalba, near tunnel, 1♂, 1♀, 7–22.iii.2006; 1♀, 24–30.v.2006; 2♂, 7–14.vi.2006; all LT, AvH. Wadi Bih dam, 1♀, 6–13.v.2007, LT, AvH. Wadi Madaq, 3♂, 28.i.2006, from leaf litter, AvH; 4♂, 1♀, 27.iv–5.v.2006, LT, AvH. Wadi Safad, 1♀, 31.i–21.ii.2006, LT, AvH; 1♀, 21.ii–4.iii.2006, LT, AvH. Wadi Wurayah farm, 1♂, 15.i–22.ii.2009; 4♂, 1♀, 8–15.ii.2009; 1♂, 15–30.iii.2009; all LT, AvH.

Genus ***Ctenistes*** Reichenbach, 1816

Ctenistes contains some thirty species from the African, Palaearctic and Oriental regions, of which one has been found in the UAE.

Ctenistes staudingeri Schaufuss, 1861.

Plate 8

Ctenistes parviceps Raffray, 1887

Specimens examined: (12): Fujairah, 2♀, 28.ii–1.iv.2006; 2♂, 1♀, 1–8.iv.2006; 1♀, 8–29.iv.2006; 1♂, 2♀, 15–22.iv.2006; 1♂, 20–27.v.2006; 2♂, 13.xi–10.xii.2006; all LT, AvH.

Comments: This species described from Spain (Andalusia) is widespread in the Maghreb from Morocco to Tunisia and Tibesti; it is also known from Yemen, Saudi Arabia, Israel, Iraq and Iran, and now also from the United Arab Emirates.

Genus ***Ctenisomorphus*** Raffray, 1890***Ctenisoschema*** Jeannel, 1956 **nov. syn.**

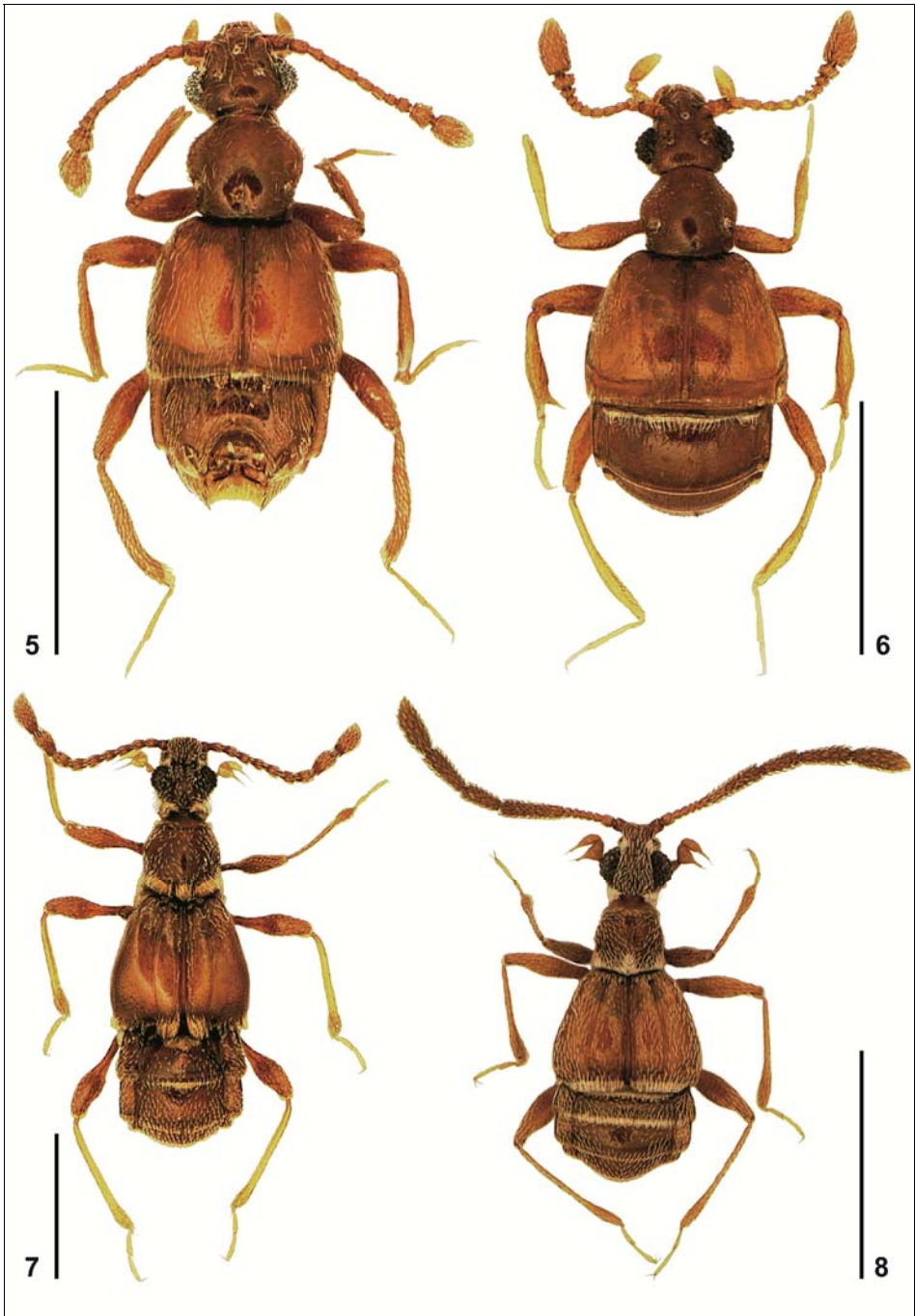
Species of *Ctenisomorphus* exhibit considerable variations with respect to the development of several structures, notably the maxillary palpi and the antenna club, which are occasionally affected by individual variations, or disharmonic growth (Besuchet, 1981: 247–249). Jeannel (1957) erected the monotypic genus *Ctenisoschema* to accommodate *Ctenisomorphus garamantica* Peyerimhoff, 1929 (type species, by monotypy) because this taxon has the antennal club consisting of four antennomeres, instead of two in the other *Ctenisomorphus*. However, these genera share in common all the other features, notably a characteristic shape of the antennomeres ten and eleven, which are about four times longer than wide, with the tenth notched basally. We therefore consider that *Ctenisoschema* is a new junior synonym of *Ctenisomorphus*. Thus, the genus now contains *C. garamantica* Peyerimhoff, 1929, from Algeria and Morocco, *C. major* (Raffray, 1877) from Africa, the Middle East and the Arabian Peninsula, and the new species described below.

Ctenisomorphus fortipalpis Besuchet & Cuccodoro **nov. spec.**

Plate 10, Figs 15, 16

Specimens examined: Holotype: ♂ (MHNG), “UNITED ARAB EMIRATES, Wadi Wurayah farms <25.24N; 56.17E> 15–30.03.2009, leg. A. van Harten, in light-trap, UAE 10894”. Paratypes (26): 1♂, Wadi Madaq, 27.iv–5.v.2006, LT, AvH; 1♀, 1–8.vii.2006, LT, AvH. IRAN: 4♂, 6♀ (MHNG, NMPC), Southeast, Bahu-Kalat, 3–4.iv.1973, Exped. Nat. Mus. Praha, n° 147; 1♂ (NMPC), same data, but Tis, 6–7.iv.1973, n° 150; 2♂ (NMPC), same data, but 13 km SSE of Nikshahr, river, 8–9.iv.1973, n° 152; 2♀ (NMPC), same data, but 25 km W of Ghasre-ghand, river, 9–10.iv.1973, n° 153; 1♂ (MHNG), same data, but 9 km S of Espakeh, 10.iv.1973, n° 155; 1♂, 1♀ (MHNG); same data, but South, Derpehan, 12 km E of Senderk, 11–12.v.1977, n° 326; 1♀ (MHNG), same data, but Kahurak, 2–3.vi.1977, n° 355; 3♂, 2♀ (MHNG, NMPC), same data, but Ziorat, 23 km NWN of Bilol, 14–15.v.1977, Exped. Nat. Mus. Praha, n° 330.

Description: Body (Plate 10) 2.10–2.30 mm long. Eyes (0.16/0.16 mm) well developed, protruding, slightly bigger than temples. Maxillary palpi as in Figure 16, very big; second



Plates 5–8. 5: *Brachyluta martinae* Bückle, habitus; 6: *Trissemus vanharteni* nov. spec., habitus; 7: *Epicaris ventralis* Raffray, habitus; 8: *Ctenistes staudingeri* Schaufuss, habitus. Scale bars = 1 mm.

article curved, incrassate apically, with peduncle short prolonged by long penicillum (0.10 mm); articles 3 and 4 narrow, prolonged each by peduncle long (0.09 mm and 0.06 mm, respectively) bearing an even longer penicillum (0.17 mm and 0.16 mm, respectively). Legs very long and slender, terminated each by two very fine claws; protrochanters 0.26 mm long and 0.07 mm wide; profemora 0.48 mm long and 0.10 mm wide; protibiae 0.60 mm long and 0.05 mm wide; protarsi combined 0.20 mm long and 0.02 mm wide; metatrochanters 0.28 mm long and 0.07 mm wide; metafemora 0.59 mm long and 0.12 mm wide; metatibiae 0.78 mm long and 0.03 mm wide; metatarsi combined 0.25 mm long and 0.02 mm wide.

Male. Antennae very long (1.45 mm) with club consisting of four articles. Lengths of antennomeres: 1: 0.11 mm; 2: 0.08 mm; 3–7 combined: 0.18 mm; 8: 0.33 mm; 9: 0.08 mm; 10: 0.28 mm; 11: 0.39 mm. Aedeagus as in Figure 15 (length 0.20–0.23 mm).

Female. Antennae very long (1.51 mm) with club consisting of three articles. Lengths of antennomeres: 1: 0.11 mm; 2: 0.08 mm; 3: 0.06 mm; 4: 0.08 mm; 5: 0.09 mm; 6: 0.10 mm; 7: 0.10 mm; 8: 0.11 mm; 9: 0.13 mm; 10: 0.26 mm; 11: 0.39 mm.

Comments: The new species shares in common with *Ctenisomorphus garamantica* an antennal club consisting of four articles in the male. These two species have, however, different antennal proportions, and their aedeagus is also diagnostic.

***Ctenisomorphus major* (Raffray, 1877)**

Plate 9

Specimens examined: (60): Al-Ajban, 1♀, 6–22.v.2006, LT, AvH. Near Mahafiz, 3♂, 1♀, 23.iv.2005, at light and in light-trap, AvH & K. Szpila. Sharjah Desert Park, 1♂, 25.i–22.ii.2005; 1♀, 22.ii–9.iii.2005; 1♀, 21–29.iii.2005; 1♂, 3♀, 29.iii–6.iv.2005; 2♂, 1♀, 6–30.iv.2005; 4♂, 1♀, 30.iv–31.v.2005; 1♀, 30.vi–21.vii.2005; 2♂, 2♀, 20.x–8.xi.2005; 3♂, 13.xi–11.xii.2005; 1♂, 1♀, 1–25.ii.2006; 1♀, 17.ii–3.iii.2007; 1♂, 1♀, 20–30.iv.2007; 8♂, 20.x–24.xi.2007; 2♂, 2♀, 14.ii–1.iii.2008; all LT, AvH. Wadi Bih dam, 7♂, 1♀, 6–13.v.2007, LT, AvH. Wadi Madaq, 11♂, 1♀, 28.i.2006, in leaf litter, AvH; 2♂, 27.iv–5.v.2006, LT, AvH; 1♀, 24.ix–22.x.2006, WT, AvH; 3♂, 1–8.vi.2006, LT, AvH. 1♂, Wadi Wurayah farm, 15.i–22.ii.2009, LT, AvH.

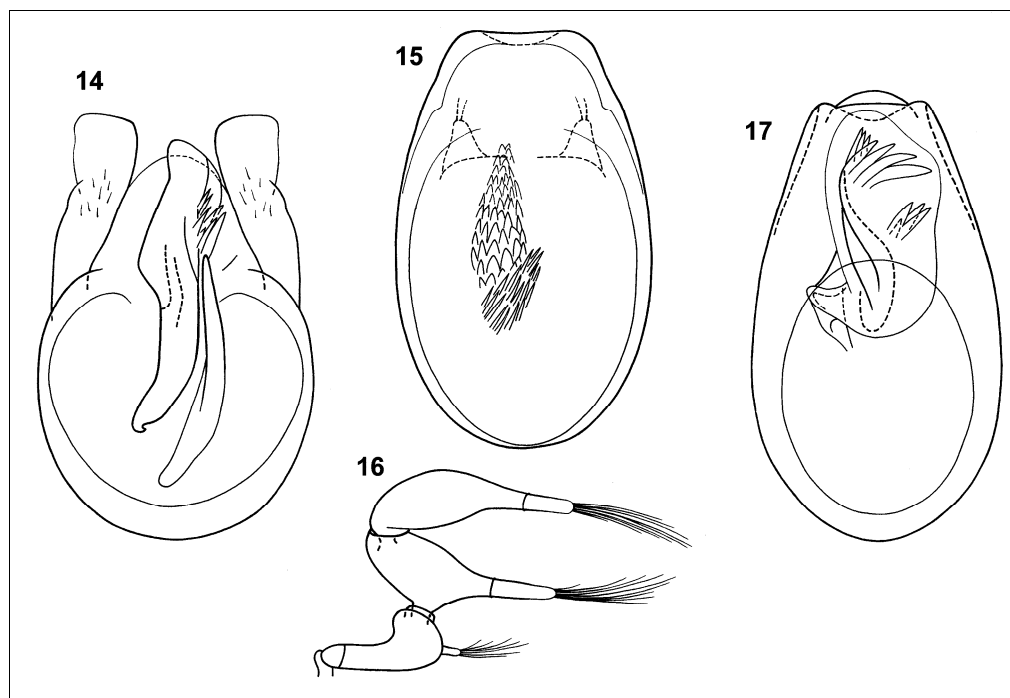
Comments: This species is known from Algeria, Tunisia, Egypt, Israel, Jordan, Turkey, Iran, Yemen and Saudi Arabia, and now also from the United Arab Emirates.

Genus ***Enoptostomus*** Schaum, 1864

***Enoptostomus arabicus* Besuchet & Cuccodoro nov. spec.**

Plate 11, Figure 17

Specimens examined: Holotype: ♂ (MHNG): “UNITED ARAB EMIRATES, Wadi Madaq <25.18N; 56.07E> 27.04–05.05.2006, leg. A. van Harten, in light-trap, UAE 6509”. Paratypes (225): 26♂, 4♀, same data as holotype. 1♂, al-Ajban, 2–9.iv.2006, MT, AvH. 2♂, Bithnah, 31.xii.2005–2.ii.2006, LT, AvH. 7♂, 1♀, Fujairah, 6.iv–2.v.2005, LT, AvH; 1♂, 20–27.v.2006, LT, AvH. 1♂, 1♀, Khor al-Khwair, 16–23.v.2007, LT, AvH. 10♂, 1♀, near Mahafiz, 21–28.viii.2006, LT, AvH. 1♂, Sharjah Desert Park, 1–25.ii.2006, LT, AvH; 1♂, 20.x–24.xi.2007, LT, AvH. 2♂, Sharjah-Khor Kalba, near tunnel, 7–22.iii.2006; 2♂, 24–30.v.2006; 5♂, 31.v–7.vi.2006; all LT, AvH. 1♂, NARC, near Sweihan, 14.iii–2.iv.2005, LT, AvH. 2♂, Wadi Bih dam, 1–8.iii.2007; 16♂, 1–15.iii.2007; 14♀, 24.iv–1.v.2007; 14♂, 30.v–5.vi.2007; all LT, AvH. 1♂, Wadi Madaq, 28.i.2006, in leaf litter, AvH; 2♂, 24.ix–22.vi.2006, WT, AvH; 5♂, 1–8.vii.2006, LT, AvH. 4♂, 2♀, Wadi Safad, 20.xii.2005–2.i.2006; 15♂, 2–26.i.2006; 1♀, 21.ii–4.iii.2006; 15♂, 31.i–21.ii.2006; 2♀, 15–22.iv.2006; 3♂, 17–24.vi.2006; 1♂, 1–8.vii.2006; all LT, AvH. 1♂, Wadi Siji, 24.ix–22.x.2006, WT, AvH. 3♂, Wadi Wurayah, 12–14.iv.2005, MT & WT, leg. T. Pape. 32♂, 2♀, Wadi Wurayah farm, 15.i–22.ii.2009; 2♂, 22.ii–2.iii.2009; 4♂, 1♀, 8–15.iii.2009; 12♂, 1♀, 15–30.iii.2009; all LT, AvH. OMAN: 3♂ (MHNG), Fanjah, Wadi Fanjah, 9.iv.1985, leg. C. Holzschuh.



Figures 14–17. 14: *Trissemus vanharteni* nov. spec., aedeagus in dorsal view. 15, 16: *Ctenisomorphus fortipalpis* nov. spec. 15: Aedeagus in dorsal view; 16: Maxillary palpus. 17: *Enoptostomus arabicus* nov. spec., aedeagus in dorsal view.

Description: Body as in Plate 11, 1.60–1.80 mm long (1.40–1.60 mm in *E. globulicornis*). Eyes protruding, with ommatidia rather big. Maxillary palpi with article 4 transverse and 0.22–0.25 mm long (0.19–0.21 mm in *E. globulicornis*), prolonged by penicillum 0.09–0.10 mm long (0.05–0.07 mm in *E. globulicornis*).

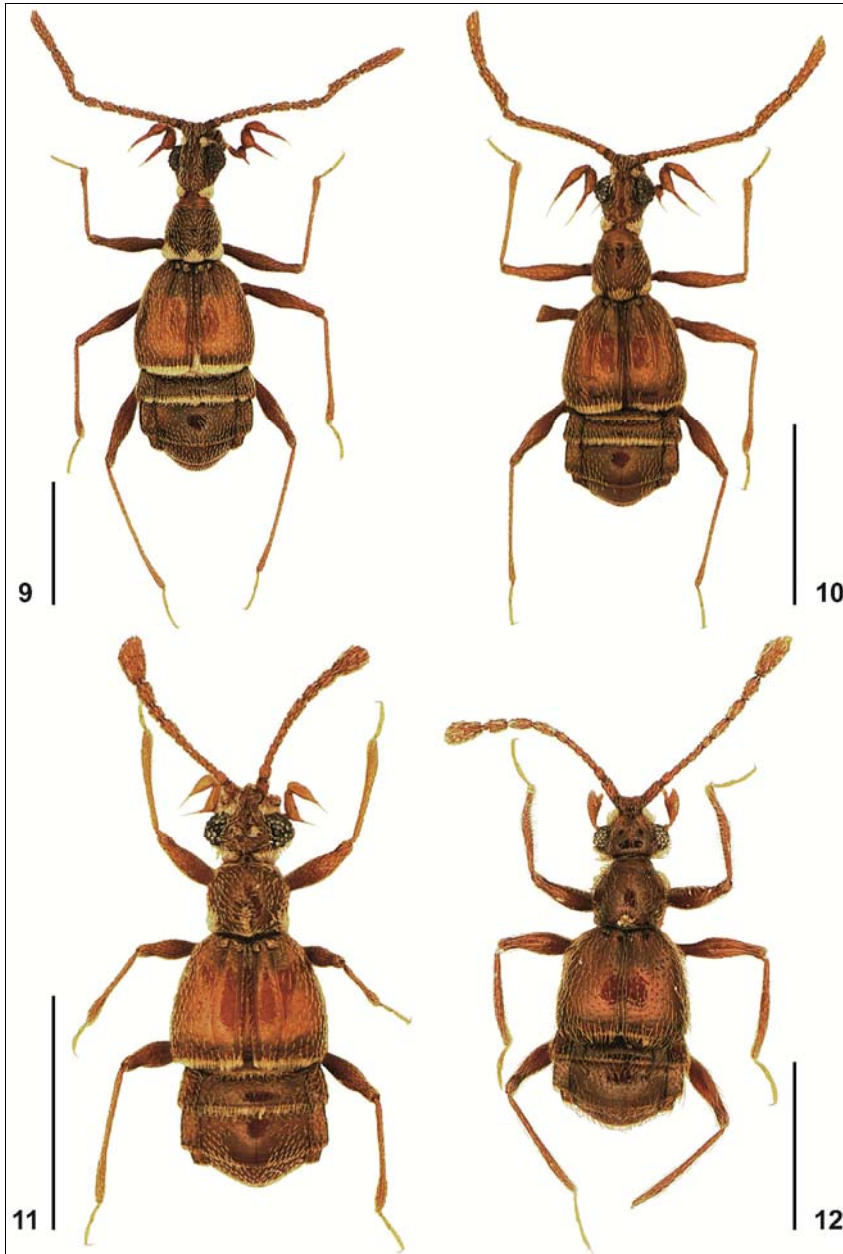
Male. Eyes 0.14–0.15 mm long (0.11–0.12 mm in *E. globulicornis*). Antennal club consisting of 4 articles and 0.46–0.49 mm long (0.36–0.39 mm in *E. globulicornis*). Metatibiae 0.55–0.60 mm long (0.47–0.52 mm in *E. globulicornis*). Aedeagus as in Figure 17 and 0.20–0.23 mm long (0.20–0.23 mm in *E. globulicornis*).

Female. Eyes 0.10–0.11 mm long (0.09–0.10 mm in *E. globulicornis*). Antennal club consisting of 3 articles and 0.31–0.34 mm long (0.24–0.26 mm in *E. globulicornis*).

Comments: *Enoptostomus arabicus* strongly resembles *E. globulicornis* (Motschulsky, 1851), from which it differs essentially by having the maxillary palpi much more developed. The conformation of the aedeagus is also diagnostic.

Genus *Centrophthalmus* Schmidt-Göbel, 1838

Centrophthalmus persimilis Besuchet & Cuccodoro **nov. spec.** Plate 12, Figures 18, 19
Specimens examined: Holotype: ♂ (MHNG): “UNITED ARAB EMIRATES, Wadi Safad <25.13N; 56.19E> 15–22.04.2006, leg. A. van Harten, in light-trap, UAE 8256”.



Plates 9–12. 9: *Ctenisomorphus major* (Raffray), habitus; 10: *Ctenisomorphus fortipalpis* nov. spec., habitus; 11: *Enoptostomus arabicus* nov. spec., habitus; 12: *Centrophtalmus persimilis* nov. spec., habitus. Scale bars = 1 mm.

Description: Body (Plate 12) 2.15 mm long, uniformly pale reddish-brown, rather uniformly covered on entire dorsum with moderately long pubescence becoming slightly longer laterally on elytra and abdomen. Head (length 0.37 mm; width 0.45 mm) with three deep fovae of similar dimensions, the medial one in the sulcus of the frontal lobe. Temples very short (0.04 mm) and angled, bearing a spur. Eyes well developed, protruding, margined posteriorly by numerous long erect setae. Maxillary palpi with article 3 (0.09 mm wide) lacking dorsal depression, and article 4 very slender (length 0.12 mm; width 0.04 mm). Antennae (length 1.30 mm) less robust than *C. tempestivus*, with club consisting of four elongated articles (8–11); proportions (length/width, in mm): scapus 0.19/0.06 – pedicel 0.08/0.07 – article 3 0.07/0.05 – article 4 0.05/0.05 – article 5 0.05/0.05 – article 6 0.06/0.05 – article 7 0.07/0.05 – article 8 0.16/0.06 – article 9 0.15/0.07 – article 10 0.15/0.08 – article 11 0.27/0.14. Pronotum (length 0.39 mm; width 0.42 mm) bearing three deep mediobasal fovae. Abdomen with first visible tergite (length 0.15 mm) bearing two diverging carinulae extending on entire tergal length, and second visible tergite (length 0.31 mm) bearing posteriorly two parallel carinulae extending on slightly less than half of tergal length. Protibiae not bent subapically.

Male: Aedeagus as in Figures 18 and 19 (length 0.34–0.12 mm) gracile, rather simple.

Female: Unknown.

Comments: *Centrophthalmus persimilis* is very similar to *C. abyssinicus* Raffray, 1904, from Yemen, from which it can be distinguished only by the structure of the aedeagus, notably by the shape of the internal sac.

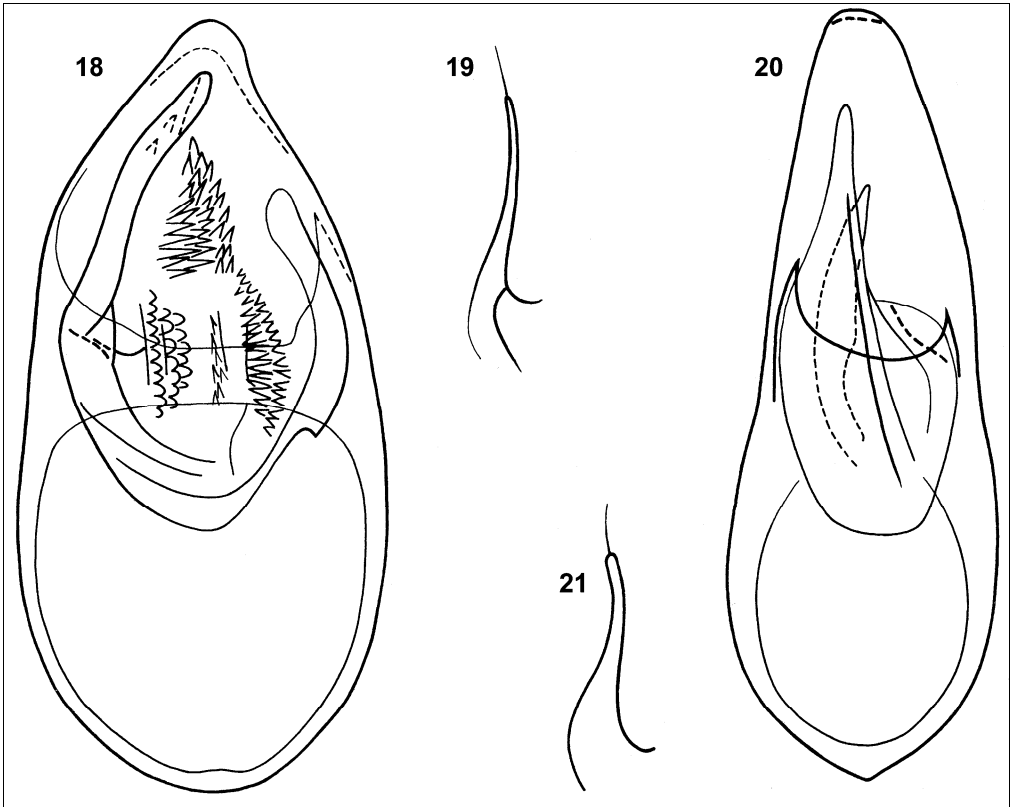
***Centrophthalmus tempestivus* Besuchet & Cuccodoro nov. spec.** Plate 13, Figures 20, 21
Specimens examined: Holotype; ♂ (MHNG): “UNITED ARAB EMIRATES, Wadi Safad <25.13N; 56.19E> 31.01–21.02.2006, leg. A. van Harten, in light-trap, UAE 5923”. Paratype (1): 1♂ (MHNG), same data as holotype but 15–22.iv.2006.

Description: Body (Plate 13) 2.50 mm long, uniformly pale reddish-brown, rather uniformly covered on entire dorsum with moderately long pubescence. Head (length 0.44 mm; width 0.49 mm) with three deep fovae of similar dimensions, the medial one in the sulcus of the frontal lobe. Temples short (0.05 mm) and angled, without spurs. Eyes well developed, protruding, margined anteriorly and posteriorly by numerous long erect setae. Maxillary palpi with article 3 (0.10 mm wide) lacking dorsal depression, and article 4 very slender (length 0.14 mm; width 0.04 mm). Antennae (length 1.31 mm) robust, with club consisting of four ovoid articles (8–11); proportions (length/width, in mm): scapus 0.20/0.08 – pedicel 0.09/0.07 – article 3 0.08/0.06 – article 4 0.07/0.06 – article 5 0.06/0.06 – article 6 0.06/0.06 – article 7 0.06/0.06 – article 8 0.12/0.08 – article 9 0.15/0.09 – article 10 0.15/0.11 – article 11 0.26/0.15. Pronotum (length 0.41 mm; width 0.48 mm) bearing three deep mediobasal fovae. Abdomen with first visible tergite (length 0.18 mm) bearing posteriorly two diverging carinulae extending on slightly more than half tergal length, and second visible tergite (length 0.38 mm) bearing posteriorly two parallel carinulae extending on slightly less than half of tergal length. Protibiae bent subapically.

Male: Aedeagus as in Figures 20 and 21 (length 0.51–0.25 mm), robust, quite complex.

Female: Unknown.

Comments: *Centrophthalmus tempestivus* is very similar to *C. sharpi* Besuchet, 1966, and *C. mesopotamensis* Besuchet, 1966, both from Mesopotamia (Besuchet, 1966: 59–65, Figs 1 and 4), from which it differs notably by the shape of the aedeagus.



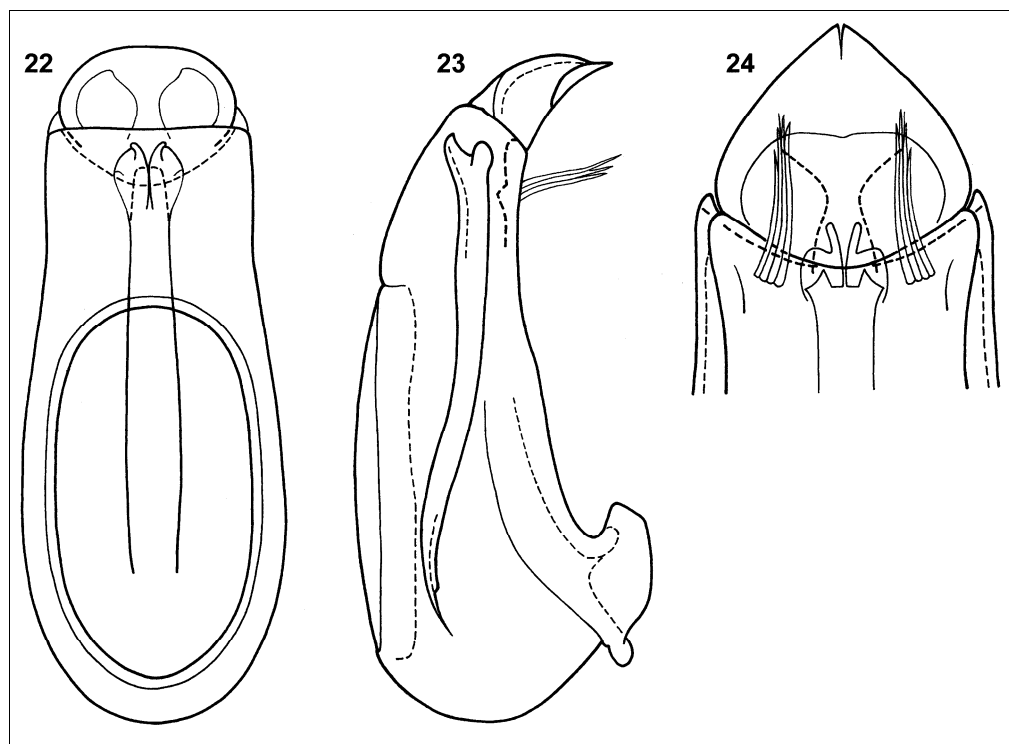
Figures 18–21. 18, 19: *Centrophthalmus tempestivus* nov. spec. 18: Aedeagus in dorsal view; 19: Paramere (same magnification as 18). 20, 21: *Centrophthalmus persimilis* nov. spec. 20: Aedeagus in dorsal view; 21: Paramere (same magnification as 20).

Tribe **Clavigerini** Leach, 1815

Genus *Commatocerus* Raffray, 1882

Commatocerus are true myrmecophiles, with three segmented antennae and atrophic mouthparts. This genus erected by Raffray (1882) was synonymised by himself some years later with *Fustiger* Leconte, 1886 (Raffray 1890), and subsequently revalidated again by Raffray (1893). Although it was even revalidated a second time by Jeannel (1949), the latter nomenclatural act has been overlooked in the catalogues of Newton and Chandler (1989) and Löbl and Besuchet (2004), in which both genera stand as synonyms.

The finding of a member of this genus in the United Arab Emirates is very interesting, as it contained so far only three African species: *C. elegantulus* Raffray, 1882, from Ethiopia (Abyssinia), *C. leleupi* Jeannel, 1953, from Zaire (Kivu) and *C. aspericornis* Jeannel, 1956, from Zaire (Oriental).



Figures 22–24. *Commatocerus concinnus* nov. spec. 22: Aedeagus in dorsal view; 23: Aedeagus in lateral view; 24: Aedeagus in ventral view.

***Commatocerus concinnus* Besuchet & Cuccodoro nov. spec.**

Plate 14, Figures 22–24

Specimens examined: Holotype: ♂ (MHNG): “UNITED ARAB EMIRATES, Wadi Shawkah <27.08N; 56.01E> 03–18.02.2008, leg. A. van Harten, in water-trap, UAE 8741”.

Description: Body (Plate 14) 2.40 mm long, uniformly pale reddish-brown, with dorsal pubescence rather short and longer on elytra and abdomen than on head and pronotum. Head (length 0.50 mm; width 0.27 mm) shagrinated dorsally and laterally, with anterior portion rather cylindrical and posterior portion flattened, the latter dorsally concave; pair of interocular fovae deep and of similar dimensions, closer to the eyes than to neck. Temples (0.20 mm) slightly widened posteriorly, abruptly narrowed behind to distinct neck. Eyes (0.08/0.09 mm) located laterally on the middle of the head capsule, consisting of small ommatidia. Antennae consisting of three articles, the two basal short (combined length 0.13 mm), and the terminal very long (length 0.73 mm), cylindrical, apically truncate, and bearing numerous setae. Pronotum (length 0.33 mm; width 0.38 mm) nearly cylindrical, bearing three small mediobasal fovae. Elytra (length 0.72 mm; combined width 0.76 mm) each with a sutural stria entire and four minute basal fovae. Abdomen (length 0.95 mm; width 0.83 mm) particularly long, consisting only of one tergite visible in dorsal view prolonged by two vertical tergites; first visible tergite with anterior third smooth, glabrous, with deep and



Plates 13–14. 13: *Centrophtalmus tempestivus* nov. spec., habitus; 14: *Commatocerus concinnus* nov. spec., habitus. Scale bars = 1 mm.

broad depression gradually raised posteriorly, and posterior two-thirds evenly convex and covered with long setae; pleurites 1 each bearing anteriorly small tufted trichomes (0.11 mm). Abdomen consisting ventrally of 6 ventrites: first short, pubescent; second quite long; third and fourth shorter than second, corresponding to the long tergite; fifth and sixth ventrites corresponding to the two apical tergites.

Male: Metaventrite very convex, bearing slightly behind middle a small projecting tooth. Mesofemora bearing basally a stout tooth (length 0.05 mm). Mesotibiae (0.61 mm) with basal portion slender and apical half stout, bearing on apical third a pair of small contiguous adventral teeth. Aedeagus as in Figures 22–24 (length 0.49–0.19 mm) with parameres bearing each a subapical tuft of setae.

Comments: *Commatocerus concinnus* is the only member of the genus having the terminal antennomeres cylindrical, instead of apically enlarged.

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