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## PYRGOTID FLIES ASSIGNED TO APYRGOTA. I. NEW SPECIES AND SYNONYMS IN EUPYRGOTA (S. STR.) (DIPTERA, PYRGOTIDAE), WITH THE DESCRIPTION OF A NEW SUBGENUS

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**Pyrgotid Flies assigned to *Apyrgota*. I. New Species and Synonyms in *Eupyrgota* (s. str.) (Diptera, Pyrgotidae), with Description of a New Subgenus.** Korneyev, V. A. — *Eupyrgota scioida* Hendel, 1908, the type species of the genus *Apyrgota* Hendel, 1909, syn. n. is shown to belong in *Eupyrgota* Coquillett, 1899. The diagnoses of the genus *Eupyrgota* and the subgenus *Eupyrgota* (s. str.) are reconsidered. *E. alienata* (Walker, 1861) comb. n., *E. brahma* (Hendel, 1914), comb. n., *E. aequalis* (Malloch, 1939), comb. n., *E. angustifrons* (Bezzi, 1914), comb. n., and *E. armipes* (Hendel, 1914), comb. n. are transferred into *Eupyrgota* (s. str.). The following synonymy is established: *Eupyrgota* Coquillett, 1899 = *Apyrgota* Hendel, 1909, syn. n.; *E. alienata* (Walker, 1861) = *E. scioida* Hendel, 1908, syn. n.; and *E. brahma* (Hendel, 1914) = *Adapsilia nocturna* Bezzi, 1914, syn. n. *E. nyambene* V. Korneyev, sp. n. is described based on a single female from Kenya; the new species belongs in the *varipennis* subgroup, but differs from other species by having a slender fore femur (thickened in *E. varipennis* Curran) and the mid femur with a femoral organ (absent in *E. rugosigenis* Hendel). A monotypic subgenus *Asipyrgota* subgen. n. (type species: *Adapsilia flaviseta* Malloch, 1929) is established; it shares the presence of the nipple-like processes of the prosternum, a generally robust appearance, and presence of 3 pairs of scutellar setae with members of the subgenus *Eupyrgota* s. str., differing by the absence of paired ventro-apical hooks on the ov scape.

Key words: Diptera, Cyclorrhapha, Tephritoidea, Pyrgotidae, *Eupyrgota*, taxonomy, new taxa, new combinations, synonymy.

**Мухи-пирготиды, отнесенные к *Apyrgota*. I. Новые виды и синонимы в роде *Eupyrgota* (s. str.) (Diptera, Pyrgotidae), с описанием нового подрода.** Корнеев В. А. — Показано, что *Eupyrgota scioida* Hendel, 1908, типовой вид рода *Apyrgota* Hendel, 1909 относится к *Eupyrgota* Coquillett, 1899. Пересмотрены диагнозы рода *Eupyrgota* и подрода *Eupyrgota* (s. str.). Виды *E. alienata* (Walker, 1861) comb. n., *E. brahma* (Hendel, 1914), comb. n. *E. aequalis* (Malloch, 1939), comb. n., *E. angustifrons* (Bezzi, 1914), comb. n., *E. armipes* (Hendel, 1914), comb. n., перемещены в номинативный подрод рода *Eupyrgota*. Установлены следующие синонимы: *Eupyrgota* Coquillett, 1899 = *Apyrgota* Hendel, 1909, syn. n.; *E. alienata* (Walker, 1861) = *E. scioida* Hendel, 1908, syn. n.; *E. brahma* (Hendel, 1914) = *Adapsilia nocturna* Bezzi, 1914, syn. n. Описана *E. nyambene* V. Korneyev, sp. n. по единственной самке из Кении; новый вид относится к подгруппе *varipennis*, отличаясь от двух других видов узким передним бедром (утолщено у *E. varipennis* Curran) и средним бедром с развитым феморальным органом (отсутствует у *E. rugosigenis* Hendel). Установлен монотипный подрод *Asipyrgota* subgen. n. (типовой вид: *Adapsilia flaviseta* Malloch, 1929), он сходен с представителями подрода *Eupyrgota* s. str. наличием пары пальчатых, или сосцевидных отростков протестернума, наличием 3 пар щитковых щетинок и крепким телосложением, отличаясь отсутствием парных вентроапикальных крючков основного членика яйцеклада.

Ключевые слова: Diptera, Cyclorrhapha, Tephritoidea, Pyrgotidae, *Eupyrgota*, таксономия, новые таксоны, новые комбинации, синонимия.

### Introduction

Pyrgotidae are medium to large-sized (4–18 mm) acalyprate flies, which can usually be recognized by having pictured wings with a short lobate cell bcu, rather slender body, oblique face, and stiletto-like aculeus

that is much shorter than the ov scape. Their larvae, as far as known, parasitize adult scarab beetles (Coleoptera: Scarabaeoidea: Melolonthidae, Rutilidae, and Cetoniidae), developing in the abdomen. Adult flies are active at dusk, like their hosts, and are collected mostly at lights.

While preparing the Pyrgotidae chapter for the Manual of Afrotropical Diptera (Korneyev, in press) extensive material deposited in several African, European and American collections was examined. It revealed some new synonymies of names and showed that some species actually do not fit diagnoses of previously established nominal genera. The limits and diagnoses of some previously established nominal genera must be therefore revised by considering previously unused genital characters.

This paper starts a series of three publications concerning the status of species currently assigned to the nominal genus *Apyrgota* Hendel, 1909. Previously, a single Neotropical species, *Apyrgota personata* Lutz et Lima, 1918, was transferred by Steyskal (1977) to form a monotypic genus *Anapyrgota* Steyskal, 1967; later, Mello et al. (2010) synonymized that nominal genus with *Carrerapyrgota* Aczél, 1957.

Further studies of collection material have shown that the reduced facial carina and fused antennal grooves occur in several otherwise different species, which apparently belong not only to non-related genera, but also to different groups of genera. To clarify the taxonomic position of pyrgotid species with fused antennal grooves, I have prepared a series of three articles.

In this paper, the taxonomic position of *Eupyrigota scioida* Hendel, 1908, the type species of *Apyrgota*, and other species here transferred to *Eupyrigota* (s. str.) are discussed; in addition, a new species from Africa is described and a new subgenus is established in *Eupyrigota*.

The second and third papers in this series (Korneyev, in press) will consider the status of *Taeniomastix* Enderlein, 1942 and the species currently assigned to *Apyrgota* that actually belong to the former genus, as well as *Tylotrypes* Bezzi, 1914 and a new genus.

## Material

The specimens examined in this study are deposited in the following collections: BBMH — Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A.; BMNH — the Natural History Museum, London, U.K.; NHMB — Naturhistorisches Museum Basel, Switzerland; NMKE — National Museums of Kenya, Nairobi; USNM — National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

The slash character (/) is used to separate lines, and square brackets for deciphered abbreviations in the literally cited labels. The non-type material is arranged alphabetically by country names, then from the West to the East and from the North to the South within each country; and finally, by the year, month and day of collecting; the collector(s) name(s) and the acronym of the depositary enclose the list of non-type specimens and are provided only once at the end if repeated.

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## Taxonomic position of *Eupyrigota* and related genera

According to Korneyev (2006 a), several Old World genera (*Adapsilia* Waga, *Campylocera* Macquart, *Euphya* Wulp, *Eupyrigota* Coquillett, *Pyrgotomyia* Hendel, *Siridapha* Enderlein) and a few minor genera related to them form a distinct group; if considered a separate subtribe or tribe, a name of this group should be derived from the available family-group name *Adapsilioidi* Rondani, 1869, which is currently considered a synonym of Pyrgotini.

Some species belonging in this group of genera were either originally described in, or subsequently transferred to the nominal genus *Apyrgota*. Earlier Korneyev (2006 a) subdivided Afrotropical *Eupyrigota* into two groups of species, the *spinifemur* and *latipennis* groups, which correspond to the two subgenera considered here. He also noted that the type species of *Apyrgota* also belongs in *Eupyrigota*, but further discussion of that nomenclatural problem, which involves several Old World species assigned to *Apyrgota*, was pending. The Afrotropical *Apyrgota marshalli* Hendel, 1914, was stated to belong elsewhere. Detailed study of some morphological features shows that it deserves status in a separate genus, which will be described in a third part of this paper (Korneyev, in press), after discussion of the species included and synonymies in the *Eupyrigota*.

***Eupyrgota*** Coquillett, 1898

Type species: *Eupyrgota luteola* Coquillett, 1898, by original designation.

*Apyrgota* Hendel, 1909, **syn. n.**

Type species: *Eupyrgota scioida* Hendel, 1908, by monotypy.

*Pelto dasia* Enderlein, 1942.

Type species: *Pelto dasia vespiformis* Enderlein, 1942, by original designation.

**Diagnosis.** Species of *Eupyrgota* can be recognized from the other Old World Pyrgotini by the following combination of characters: prosternum bearing a pair of nipple- or finger-like lobes, femora apico-ventrally with postero- and antero-ventral row of thickened setae (fig. 5, 6, 7; 8, 5, 6) and except in *E. flaviseta* (Aldrich), the oviscape with a pair of heavily sclerotized hooks at the apico-ventral margin (see Korneyev, 2006 a: fig. 2, 4; 5, 5, 6; 8, 2).

Presence of the nipple-like lobes on the prosternum is a unique character of *Eupyrgota*, which does not occur in other pyrgotid genera and supports its monophyly.

The rows of spurious setae on the femora are known also in *Euphya* Wulp (Pyrgotini), *Epice* Paramonov (Toxurini) and numerous taxa in the families Richardiidae, Tephritidae and Platystomatidae. Furthermore, in a few Oriental species of *Eupyrgota* the spur-like setae are poorly expressed. Species of both *Euphya* and *Epice* can be recognized by the saddle-like shape of the prosternum without prominent lobes and the oviscape without hook-like lobes. Females of the East Asian (Palaeartic and Oriental) species *Adapsilia hirtoscutellata* Hendel and *A. myopoides* Chen both possess similarly sclerotized hook-like lobes on the oviscape, but they are located in a different position and are separated by a small sclerotized ventro-medial lobe or sclerite (Korneyev, 2004; Nartshuk, Korneyev, 2005: fig. 13, 14). These species can be distinguished from *Eupyrgota* by the absence of nipple-like lobes on the prosternum and spur-like setae on the femora.

**Description.** Moderate or large (wing length 7.0–21.0 mm) wasp-like flies, often with petiolate abdomen, yellow and brown coloration of body and wings with darkened band or brown spots on anterior half or also at middle. Head normally higher than wide, short or moderately long setose; ocelli absent; parafacial microsetulose, with subocular dilation; facial carina developed or absent; epistoma (= “supraclypeal sclerite” of Korneyev, 2004, 2006 a) low to moderately high (at most 0.33 times as high as face); lateral vertical seta short or indistinguishable; antenna as long as face, flagellomere 1 almost as long as pedicel; palpus usually as long as flagellomere 1 (or slightly longer in some Oriental species), parallel-sided or apically expanded; labellum large, fleshy; prosternum bearing a pair of finger- or nipple-like ventral lobes; presutural supra-alar and prescutellar acrostichal setae absent; scutellum with 1–5 pairs of setae; wing with humeral and subcostal breaks present; costa reaching medial vein; Sc straight, narrowly broken before costa;  $R_{2+3}$  strongly curved, always with spurious vein joined to angulate break of  $R_{2+3}$ ;  $Cu_2$  short; halter yellow; mid coxa anteroventrally setose and setulose but without “brush” or “comb” of setae; hind coxa anteroventrally without “brush” of setae; fore and mid trochanters without or with “brushes” of short spine-like or hook-like setae; femora ventrally with 2 rows of thickened, usually spine-like setae; female mid femur either with bare membranous femoral organ of various position, or lacking it entirely; hind tarsi in both sexes asymmetrical, with brushes of dense setulae on medial surfaces of tarsomeres; syntergite 1 + 2 in both sexes narrowed at middle; female with rather short, ventrally curved oviscape (not longer than remaining abdomen), bearing 2 sclerotized hook-like projections ventro-apically (except in *E. flaviseta* Malloch), but without spinules or taenia-like sclerites on eversible membrane; aculeus short, flattened dorso-ventrally, with wide, bulky base and narrow stiletto-like apex; 3 oval, smooth spermathecae; in male, hypandrium narrow, with microtrichose flap-like phallic guide; phallapodeme very narrow, vanes separate, joined to hypandrium rather than to bar-

like gonites; ejaculatory apodeme fan-shaped; phallus without large sclerites of acrophallus, with paired, sometimes loop-like sclerites of praeputium.

**Distribution.** Species of *Eupyrgota* occur predominantly in the Oriental Region, with a few representatives also in the Palaearctic, Afrotropical, and Australasian Regions (Papuan Subregion).

**Taxonomy.** In this and a forthcoming paper (Korneyev, in press), 38 species are considered to belong in *Eupyrgota*, 25 in the nominative subgenus, and 13 in two other subgenera; three species (*Apyrgota pubiseta* Hendel, 1914 from (?) India, and *Adapsilia illingworthana* Bezzi, 1929 and *Adapsilia gratiosa* Paramonov, 1958 from Australia) possibly belong elsewhere. Some nominal species are possible synonyms of the others; several undescribed new species are recognized in collections. In total, the genus is believed to include c. 40–45 species, and needs a detailed revision for the Oriental and Australasian species. This, however, is out of the scope of the present work, and I only consider here the species of *Eupyrgota* needing formal taxonomic actions (new combinations for transferred species, some new synonymies, new taxa, and a revised rank). A key to the subgenera will be published in the second part of this series of papers.

I therefore transfer the type species of *Apyrgota* Hendel, 1909 into *Eupyrgota* Coquillett, 1898 and consider these genus-group names to be synonyms.

### Subgenus *Eupyrgota* (s. str.)

Syn. *Apyrgota* Hendel, 1909.

**Diagnosis.** Usually large, robust species; wing 7–21 (usually 9–19) mm long, largely yellow or grey, usually with apex dark grey or brown; scutellum with 3–6 pairs of scutellar setae, except in *E. echinata* Korneyev, *E. melancholica* (Brunetti), *E. vespiformis* (Enderlein), and *E. wagaie* (Bigot) with 2 pairs of setae; fore trochanter of female often with short spiny (or hook-like) setulae. Oviscape uniformly sclerotized, with 2 robust wide ventral hooks anterior of apex and short desclerotized area between them. Male with epandrium moderately elongate in profile, with lateral surstylus often somewhat pointed posteroventrally, densely covered with thick but short setulae; phallus glans with asymmetrical sclerites of acrophallus (conspicuously developed in *E. wagaie*) (see Korneyev, 2004: fig. 16, 1, 4; 2006 a: fig. 6).

**Species included.** Twenty-five nominal species correspond to the diagnosis of the subgenus and are placed here:

*E. aequalis* (Malloch, 1939), **comb. n.** (*Adapsilia*) (Papua New Guinea); *E. alienata* (Walker, 1861), **comb. n.** (*Oxycephala*) (= *E. scioida* Hendel, 1908, **syn. n.**) (Maluku); *E. angustifrons* (Bezzi, 1914), **comb. n.** (*Adapsilia*) (India); *E. armipes* (Hendel, 1914), **comb. n.** (*Adapsilia*) (India); *E. brahma* (Hendel, 1914), **comb. n.** (*Adapsilia*) (= *Adapsilia nocturna* Bezzi, 1914, **syn. n.**) (India); *E. caffra* (Hendel, 1914) (*Adapsilia*) (Tropical Africa); *E. crassipes* V. Korneyev, 2006 (DR Congo); *E. echinata* V. Korneyev, 2006 (DR Congo, Ghana, Uganda); *E. flavopilosa* (Hendel, 1914) (*Adapsilia*) (Japan, Korea, China); *E. furvamaculis* Shi, 1996 (China: Yunnan); *E. fusca* (Hendel, 1914) (*Adapsilia*) (Japan, China); *E. latipennis* (Walker, 1849) (*Oxycephala*) (Tropical Africa); *E. luteola* Coquillett, 1898 (Japan, Korea); *E. maculiala* Shi, 1996 (China: Yunnan); *E. melancholica* (Brunetti, 1929) (*Adapsilia*) (Nigeria, Central African Rep., Uganda); *E. nyambene* V. Korneyev, **sp. n.** (Kenya); *E. pekinensis* Chen, 1947 (China: Beijing); *E. pieli* Chen, 1947 (China: Kiangsu); *E. rugosigenis* (Hendel, 1934) (*Adapsilia*) (Angola, Rep. South Africa); *E. similis* Chen, 1947 (China: Szechwan); *E. sublatipennis* (Brunetti, 1929) (*Adapsilia*) (southern Africa); *E. varipennis* (Curran, 1928) (*Campylocera*) (DR Congo); *E. vespiformis* (Enderlein, 1942) (*Peltodasia*) (Central African Republic, Guinea, Kenya); *E. vulpina* (Hendel, 1914) (*Adapsilia*) (India); *E. wagaie* (Bigot, 1880) (*Pyrgota*) (Middle East of the Palaearctic Region).

*Eupyrgota aequalis* (Malloch), comb. n. (fig. 1)

*Adapsila aequalis* Malloch, 1939: 51.

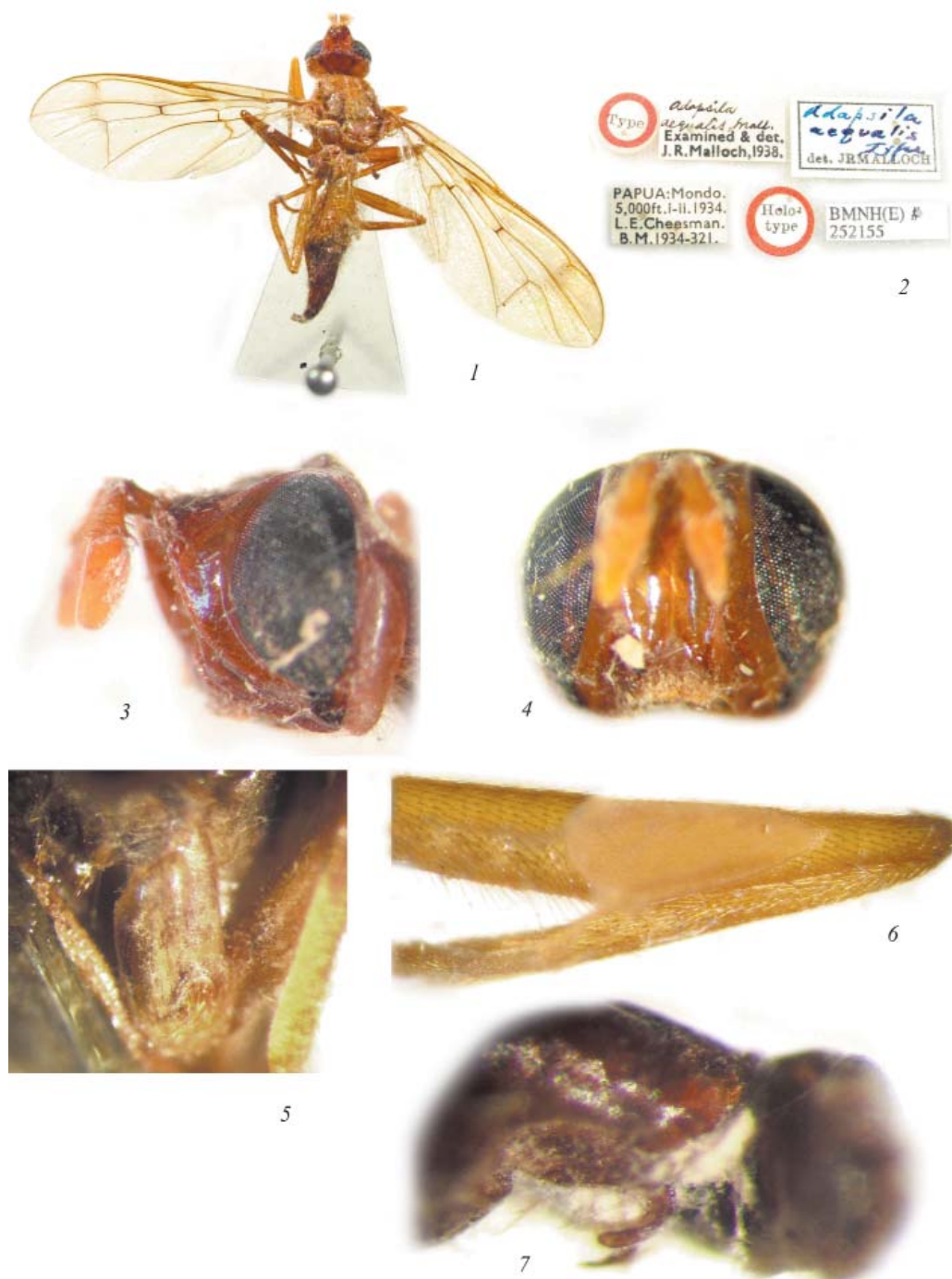


Fig. 1. *Eupyrgota aequalis*, holotype ♀ (BMNH): 1 — habitus, dorsal; 2 — labels; 3–4 — head (3 — left; 4 — anterior); 5 — fore coxa; 6 — mid femur; 7 — apex of oviscapae.

Рис. 1. *Eupyrgota aequalis*, голотип ♀ (BMNH): 1 — общий вид, дорсально; 2 — этикетки; 3–4 — голова (3 — слева; 4 — спереди); 5 — передний тазик; 6 — среднее бедро; 7 — вершина основного членика яйцеклада.

**Material. Type.** Holotype ♀: “Papua: Mondo / 5,000 ft i-ii.1934. / L. E. Cheesman. / B.M. 1934–321”, “Adapsila / aequalis, Mall. / examined & det. J. R. Malloch, 1938”, “Adapsila / aequalis / Typus / det. JRMalloch” (Malloch’s handwriting), “Type [red bordered circle]”, “Holo / type [red bordered circle]”, “BMNH # 252155”. Double pinned into celluloid triangle (BMNH). **Non-type. Papua New Guinea:** Goilala, Tororo, 1500 m, 15–20.02.1958, 1 ♀ (W. W. Brandt) (BBMH).

**Diagnosis.** This species can be recognized from the combination of head slightly longer and wider than high, face with conspicuous carina; parafacial in profile as wide as flagellomere 1 (fig. 1, 3, 4); mesonotum and abdomen reddish yellow with a few black spots; scutellum with three to four pairs of long setae (fig. 1, 1); wing almost uniformly hyaline with yellow veins, without spots or bands (fig. 1, 1); fore coxa with cluster of setulae extending from round depression (fig. 1, 5); fore femur with numerous long and thin setae, mid femur with very large femoral organ on middle two-thirds of femur; setae in ventro-apical rows thin and non-spurious; abdominal sternites with long suberect setae at posterior margins; ventral hooks on oviscape strong; all setae and setulae golden yellow. The presence of more than two scutellar setae and the strong hooks of the oviscape support its placement in *Eupyrgota* s. str.

***Eupyrgota alienata*** (Walker), comb. n. (fig. 2)

*Oxycephala alienata* Walker, 1861: 22. — *Eupyrgota scioida* Hendel, 1908: 149, **syn. n.**

**Material. Type.** Holotype ♂ *Oxycephala alienata* Walker: “Cer.” (paper circle), “alienata” (Walker’s handwriting), “alienata / Ceram Walker” (Walker’s handwriting), “Holo / type [red bordered circle]”, “Holotype *Oxycephala alienata* Walker verified J. E. Chainey 2002”, “BMNH # 252215”. Directly pinned, with holes in both wings. (BMNH). Holotype ♀ *Apyrgota scioida* Hendel: “Buru, Molukken (leg. Frühstorfer), ungar. National-Museum”, not located; apparently lost. **Non-type.** Indonesia: Amboin, “Lichtfang” (at light), 15.07.1960, 1 ♂ (A. M. R. Wegner) (NHMB) (“*Apyrgota scioida*” [Keiser (?) det.]).

**Description.** Male. Head (fig. 2, 3–4) higher than long, length: height: width ratio — 1 : 1.45 : 1.15, brownish yellow except black spot on subocular sclerite. Vertex with conspicuous transverse ridge. Frons depressed, matt, sparsely and short brown setulose; ocellar triangle and vertical plates poorly or not distinguishable. Orbits shining yellow, without sculpture; parafacial moderately wide, at its widest point shorter than flagellomere 1; eye 2.2 times as high as long and 4.5 times as high as gena; subocular sclerite subshining, three times as high as soft portion of gena; face shining, twice as high as wide in its widest point; antennal grooves separated by low and inconspicuous carina; epistoma low, 0.17 times as high as face, transverse bar-like; clypeus as high as epistoma, large, brown. Antenna yellow, pedicel 1.1 times as long as flagellomere 1; flagellomere 1 2.2 times as long as wide, blunt at apex, matt, but not conspicuously microtrichose; arista two-segmented, bare. Palp yellow, moderately densely and short brown setulose on apical half on lateral and ventral sides; long, wide and flat, 2.5 times as long as wide and slightly wider than flagellomere 1. Proboscis very large and densely brown setose. Short, poorly differentiated brown setae: 1 poc, vti, vte and 1–2 proclinate fr; oc absent.

**Thorax** brownish yellow, with prosternum, anepisternum and katatergite partly, and anepimeron, katapisternum, mediotergite, meron and metapleuron black. Scutum brown, along posterior margin narrowly dark brown, brown setulose and setose; setulae with reddish-yellow sheen. Scutellum yellow. Setae short, 1.2–2 times as long as moderately long and dense setulae. 1 ppn, 2 npl, 1 prst, 1 sa, 1 pa, 1 ia, 1 dc, 0 ac; 4–5 short, upturned sctl (on each side of scutellum); proepisternum fine and short yellow setulose; 1 anepst, 1 anepm; no conspicuous posterodorsal kepst.

**Wing** (fig. 2, 5) yellowish-brown on anterior half, grey on posterior half, slightly lighter in cell dm; narrow, 3.5 times as long as wide; wing length — 16.5 mm. Costal and medial vein conspicuously narrowed apically, but reaching each other at apex. Veins C and R<sub>1</sub> golden-brown setulose.

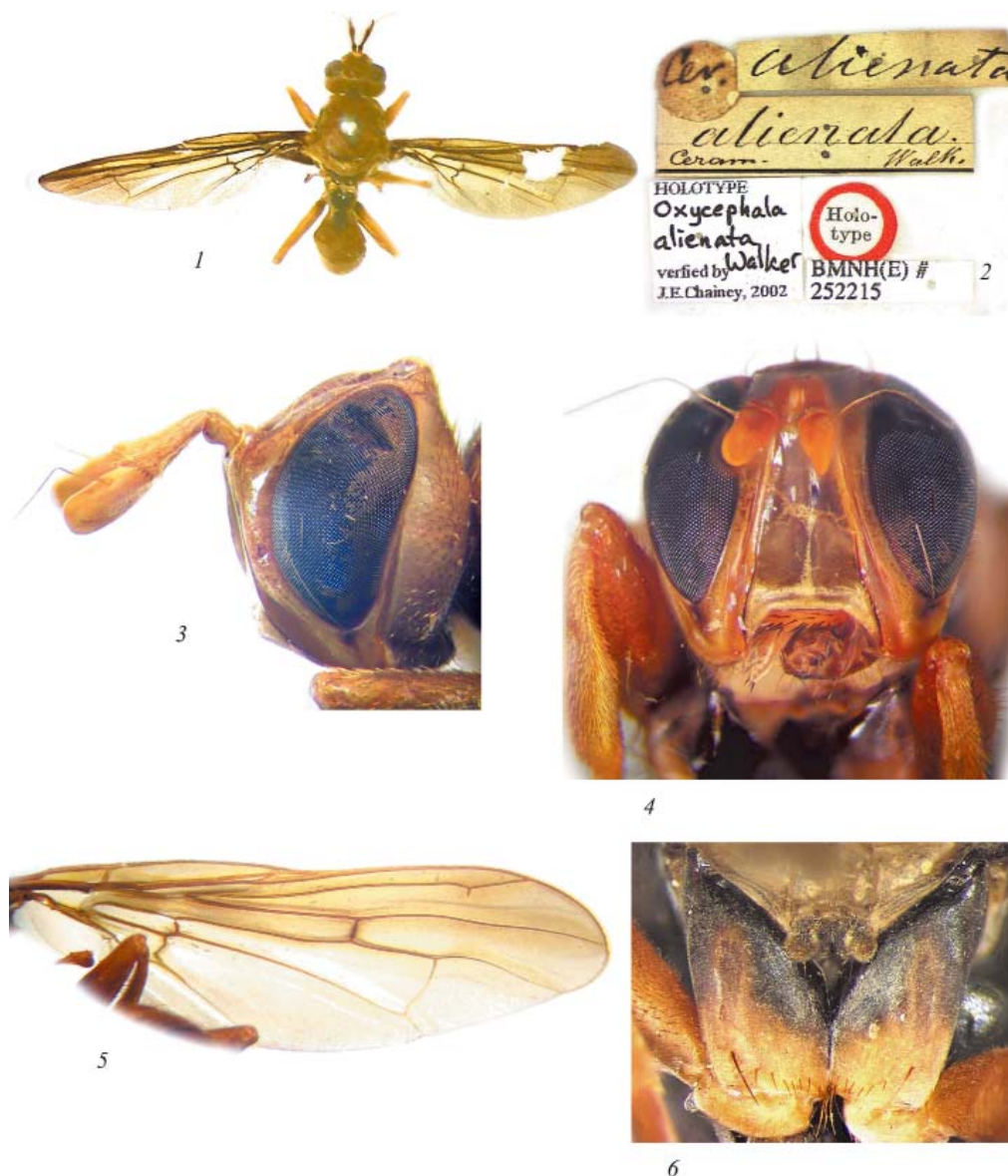


Fig. 2. *Eupyrgota alienata*, holotype ♀ (BMNH) (1–2) and non-type ♀ (NHMB) (3–6): 1 — habitus, dorsal; 2 — labels; 3–4 — head (3 — left; 4 — anterior); 5 — wing; 6 — fore coxa.

Рис. 2. *Eupyrgota alienata*, голотип ♀ (BMNH) (1–2) и нетиповая ♀ (NHMB) (3–6): 1 — общий вид, дорсально; 2 — этикетки; 3–4 — голова (3 — слева; 4 — спереди); 5 — крыло; 6 — передний тазик.

**Legs.** Fore and hind coxae dark brown basally (fig. 2, 6), yellow on apical two-thirds to one-fourth, mid coxa entirely yellow; fore and mid trochanters yellow, hind trochanter partly brown; without modified setae. Femora yellow, with brown spot or ring at basal one-sixth; subbasal seta as long as femur width; other setae indistinguishable from surrounding setulae; setae in apicoventral rows very slightly thickened, not really spur-like. Tibiae entirely yellow, rather thick, short and densely setulose, conspicuously constricted on basal one-third; mid tibia with very short apicoventral setae (less than 0.3 times as long as tibia width). Tarsi yellow, tarsomeres symmetrical, with pair of dense brushes of setulae on ventral surface and sparse, thin and slightly curled hairs among them. All setae and setulae brown or yellow, with golden sheen.

Abdomen yellow, syntergite 1 + 2 with double black crossbands, medially joined in H-like mark, 1.2 times as long as tergites 3 and 4 together or tergite 5. Tergites uniformly covered by

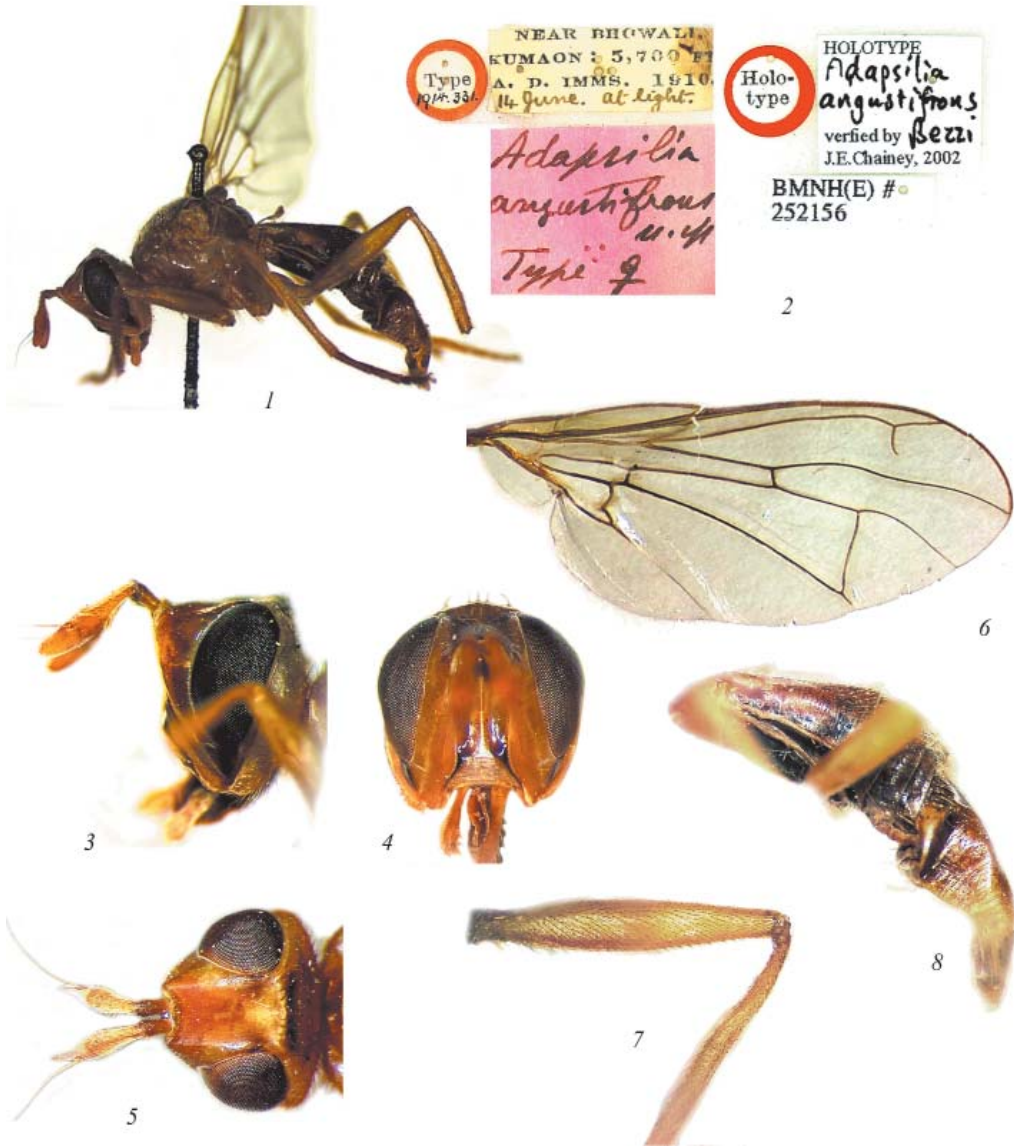


Fig. 3. *Eupyrgota angustifrons*, holotype ♀ (BMNH): 1 — habitus, left; 2 — labels; 3–5 — head (3 — left; 4 — anterior; 5 — dorsal); 6 — wing; 7 — mid femur and tibia, anterior; 8 — abdomen, left.

Рис. 3. *Eupyrgota angustifrons*, голотип ♀ (BMNH): 1 — общий вид, слева; 2 — этикетки; 3–5 — голова (3 — слева; 4 — спереди; 5 — дорсально); 6 — крыло; 7 — среднее бедро и голень, спереди; 8 — брюшко, слева.

moderately dense and rather short golden-brown setae. Synsternite 1 + 2 black on anterior half, yellow on posterior, Y-shaped, twice as long as width at anterior margin and 6.5 times as long as width at posterior margin. Sternites 3 and 4 twice as long as wide at their posterior margins, slightly narrowed anteriorly. Sternite 5 1.6 times as long as wide, at posterior margin slightly incised, 1.5 times as wide as wide at anterior margin. Sternites 3–5 posterolaterally with group of rather long setae in addition to moderately long ones on disk.

Postabdomen not dissected. Sternite 8 long gold setose. Epandrium (in situ) elongate, as illustrated for *E. latipennis* (Walker) and *E. caffra* (Loew) (Korneyev, 2006 a: fig. 6, 1 and 8, 6–8); phallus not extracted for examination.

Remarks. *Eupyrgota alienata* is known to me from two males only. The original description of *Apyrgota scioida* is rather incomplete, but it is sufficient together with the



figure of the holotype female (see Hendel, 1909: fig. 13, 14) to clearly indicate that it is conspecific with *E. alienata*. They share all the essential characters, and I synonymize these two species names.

Though one of the three diagnostic characters of *Eupyrgota* (s. str.), namely the paired hooks on the oviscapae, remains unexamined for this species, the males share well developed nipple-like ventral processes of the prosternum and the shape of the epandrium with the other species of the nominative subgenus and belongs here. I therefore transfer the type species of *Apyrgota* Hendel, 1909 into *Eupyrgota* Coquillett, 1898 (s. str.) and consider these genus-group names to be synonyms.

***Eupyrgota angustifrons* (Bezzi), comb. n. (fig. 3)**

*Adapsila angustifrons* Bezzi, 1914: 158.

**Material. Type.** Holotype ♀: **India:** “Near Bhowali, Kumaon, / 5,700 ft / A. D. Imms 1910 / 14 June at light”, “*Adapsila / angustifrons / n. sp. / Type ♀*” (pink paper label with Bezzi’s handwriting), “Type / 1914.331 [red bordered circle]”, “Holo / type [red bordered circle]”, “Holotype *Adapsila angustifrons* Bezzi verified J. E. Chainey 2002”, “BMNH # 252156”. Directly pinned (BMNH). **Non-type. China:** “Darien, China”, “DG Hall collection”, 07.1938, 1 ♀ (Weymann); Szechwan, Kuanshien, 1934, 2 ♂, 2 ♀ (D. C. Graham) (USNM).

**D i a g n o s i s.** This species can be recognized from the combination of face with facial carina; no ocellar setae; parafacial in profile twice as wide as flagellomere 1 (fig. 3, 3–5), mesonotum and abdomen reddish yellow with a few brown or black spots or without them; scutellum with three pairs of long golden yellow setae; wing almost uniformly hyaline with yellow veins, without spots or bands (fig. 3, 6); fore coxa unmodified; fore and mid trochanters with spinulose brown setulae; fore femur without long setae, except 2 subbasal ventral setae, mid femur without femoral organ (fig. 3, 7); setae in ventro-apical rows brown, spurious; abdominal sternites sparsely yellow setose; ventral hooks on oviscapae strong; most setae brown to reddish yellow, setulae golden yellow. The presence of more than two scutellar setae and strong hooks on the oviscapae supports its placement in *Eupyrgota* (s. str.).

**R e m a r k s.** This species possesses all the characters of *Eupyrgota* (s. str.), and I transfer it to the nominal subgenus. However, it shows apparently no essential differences from *E. flavopilosa* (Hendel, 1914) and *E. rufosetosa* Chen, 1947. Thorough comparison of existing material is needed to see if these nominal species are synonyms.

***Eupyrgota armipes* (Hendel), comb. n. (fig. 4)**

*Adapsila angustifrons* Hendel, 1914: 87.

**Material. Type.** Holotype ♀: **India:** “Kangra Valley / Sikkim / 4,500 ft / Aug. 1899 / G. C. Dudgeon” [handwritten], “Kangra Valley / Sikkim / 4,500 ft / Aug. 1899 / Dudgeon” [printed], “Type / ♀” [red bordered circle], “Holo / type [red bordered circle]”, “Holotype *Adapsila angustifrons* Hendel verified J. E. Chainey 2002”, “BMNH # 252158”. Double pinned in a celluloid rectangle (BMNH).

**D i a g n o s i s.** This species can be recognized from the combination of face with facial carina; parafacial in profile 1.6× as wide as flagellomere 1 (fig. 4, 3–5), mesonotum and abdomen yellow with narrow brown or black marks or without them (fig. 4, 1, 11, 12); scutellum with three pairs of long golden yellow setae; wing hyaline with gray apex and brownish radial fork; fore and mid trochanters with spinulose brown setulae (fig. 3, 8, 9); fore femur thickened, with numerous strong suberect setae, mid femur with large oval femoral organ; setae in ventro-apical rows black, spurious; ventral hooks on oviscapae strong; most setae brown to black.

**R e m a r k s.** This species possesses all the characters of *Eupyrgota* (s. str.), and I transfer it to the nominal subgenus.

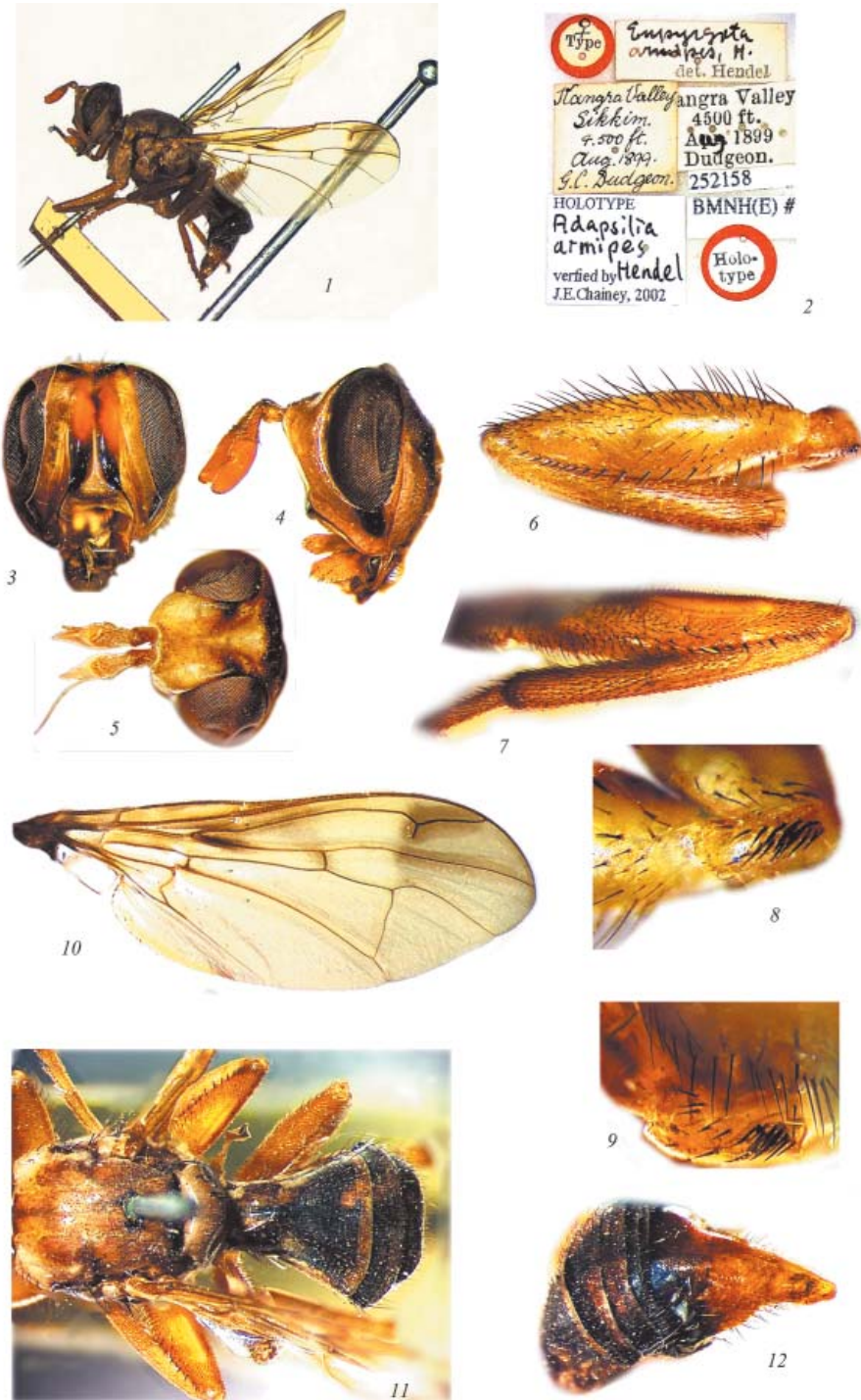


Fig. 4. *Eupyrgota armipes*, holotype ♀ (BMNH): 1 — habitus, left; 2 — labels; 3–5 — head (3 — left; 4 — anterior; 5 — dorsal); 6 — fore femur and tibia, posterior view; 7 — mid femur, anterior view; 8 — fore trochanter; 9 — mid trochanter; 10 — wing; 11 — mesonotum and abdomen, dorsally; 12 — abdomen, posterior.

Рис. 4. *Eupyrgota armipes*, голотип ♀ (BMNH): 1 — общий вид, слева; 2 — этикетки; 3–5 — голова (3 — слева; 4 — спереди; 5 — дорсально); 6 — переднее бедро и голень, вид сзади; 7 — среднее бедро, вид спереди; 8 — передний вертлуг; 9 — средний вертлуг; 10 — крыло; 11 — среднеспинка и брюшко, дорсально; 12 — брюшко, сзади.

***Eupyrgota brahma* (Hendel), comb. n. (fig. 5)***Adapsilia brahma* Hendel, 1914: 85.*Adapsilia nocturna* Bezzi, 1914: 159, **syn. n.**

**Material. Type.** Holotype ♂ *Adapsilia brahma*: **India**: “Nilgiris / S. India / Sir J. T. Hampson / 88.112”, “Suljuis 3000 [ft] 26/4/[18]89” “*Eupyrgota / Brahma*, H. /det. Hendel”, “Type ♂ [red bordered circle]”, “Holo / type [red bordered circle]”, “Holotype *Adapsilia brahma* Bezzi verified J. E. Chainey 2002”, “BMNH # 252156”. Directly pinned (BMNH). Holotype ♂ *Adapsilia nocturna*: **India**: “Near Bhowali, Kumaon, / 5,700 ft / A. D. Imms 1910 / 18 June at light”, “34”, “*Adapsilia / nocturna* /n. sp. / Type ♂” (pink paper label with Bezzi’s handwriting), “Type / 1914.331 [red bordered circle]”, “Holo / type [red bordered circle]”, “Holotype *Adapsilia nocturna* Bezzi verified J. E. Chainey 2002”, “BMNH # 252157”. Directly pinned (BMNH).

**Diagnosis.** This species can be recognized from the combination of face with facial carina; no ocellar setae; epistoma high, half as high as antennal groove; parafacial in profile 1.7 times as wide as flagellomere 1 (fig. 5, 6, 7), mesonotal scutum brownish yellow with extensive black lyrate pattern; anterior portions of anepisternum and anepimeron, as well as anteroventral part of katepisternum black (fig. 5, 5); scutellum with at least two pairs of long golden yellow setae (setae partly broken); wing 13 mm long, grey, except yellow anterobasal margin and cell br, and large brown anteroapical spot; fore coxa unmodified; fore and mid trochanters without spinulose setulae; fore femur without long setae, except 2 subbasal ventral setae; setae in ventro-apical rows brown, spurious and moderately long (one-quarter to one-third as long as femur width); all femora mostly brown; tibia reddish or brownish yellow (fig. 5, 5); abdominal tergites brownish yellow, tergites 1–3 partly black (fig. 5, 9); sternites sparsely yellow setose; surstyli (exposed only in the holotype of *A. brahma*) long triangular (as in *E. luteola*: see Kim, Han, 2000: fig. 2G); most setae and setulae brown to reddish yellow.

**Remarks.** As the holotypes of both nominal species are males (some sexually dimorphic characters remain unknown), the reason to place it in the nominative subgenus *Eupyrgota* (s. str.) is their large size and, in addition, spotted, as in many other Asian species of the nominative subgenus, wing pattern (rather than widely brown one, as in *E. (Asipyrgota) flaviseta* Aldrich: see below). The specimens show no essential differences in size and body coloration; they share the dark pleural and wing patterns, brown coloration of the moderately thin femora, comparatively strong spurious setae of the apicoventral rows. I therefore consider both holotypes to be conspecific and synonymize two nominal species. No females are known.

The paper by Hendel appeared in the beginning of 1914 in the volume of “Archiv für Naturgeschichte” for the year 1913, and Bezzi in his paper (published not earlier than in the August, 1914), referred to the species described by Hendel as to already published, with numbers of the pages. This undoubtedly shows the priority of the Hendel’s name.

***Eupyrgota nyambene* V. Korneyev, sp. n. (fig. 6)**

**Material. Type.** Holotype ♀: “**Kenya**: Eastern Province, Nyambene Hills, Itieni Forest, at bottom, 2142 m, 0.24433° N, 37.87016° E”, “Malaise trap, edge of indigenous forest”, 26.06–10.07.2011 (R. Copeland “14481 PyrgotidH11” (NMKE).

**Diagnosis.** This species is distinguished from all other species of *Eupyrgota* by the combination of its large size, bicoloured brown-yellow body and wing, well-developed facial carina, parafacial shining, narrow, half as wide as eye horizontal diameter, eye vertical diameter more than 3 times (3.7×) as high as gena, moderately narrow legs and petiolate abdomen, slightly wrinkled fronto-orbital plate and parafacial, 3 pairs of scutellar setae, and presence of small femoral organ in female. See the key in the remarks below for differences from related species.

**Description.** Head (fig. 6, 2–5) brown, with partly yellow vertex, face and occiput; frons 1.35× (at vertex) and 1.7× as wide as eye (at lunule level), conspicuously broadened anteriorly; eye oval (eye ratio 0.55); genal-eye ratio 0.27; antenna dark brown to black;

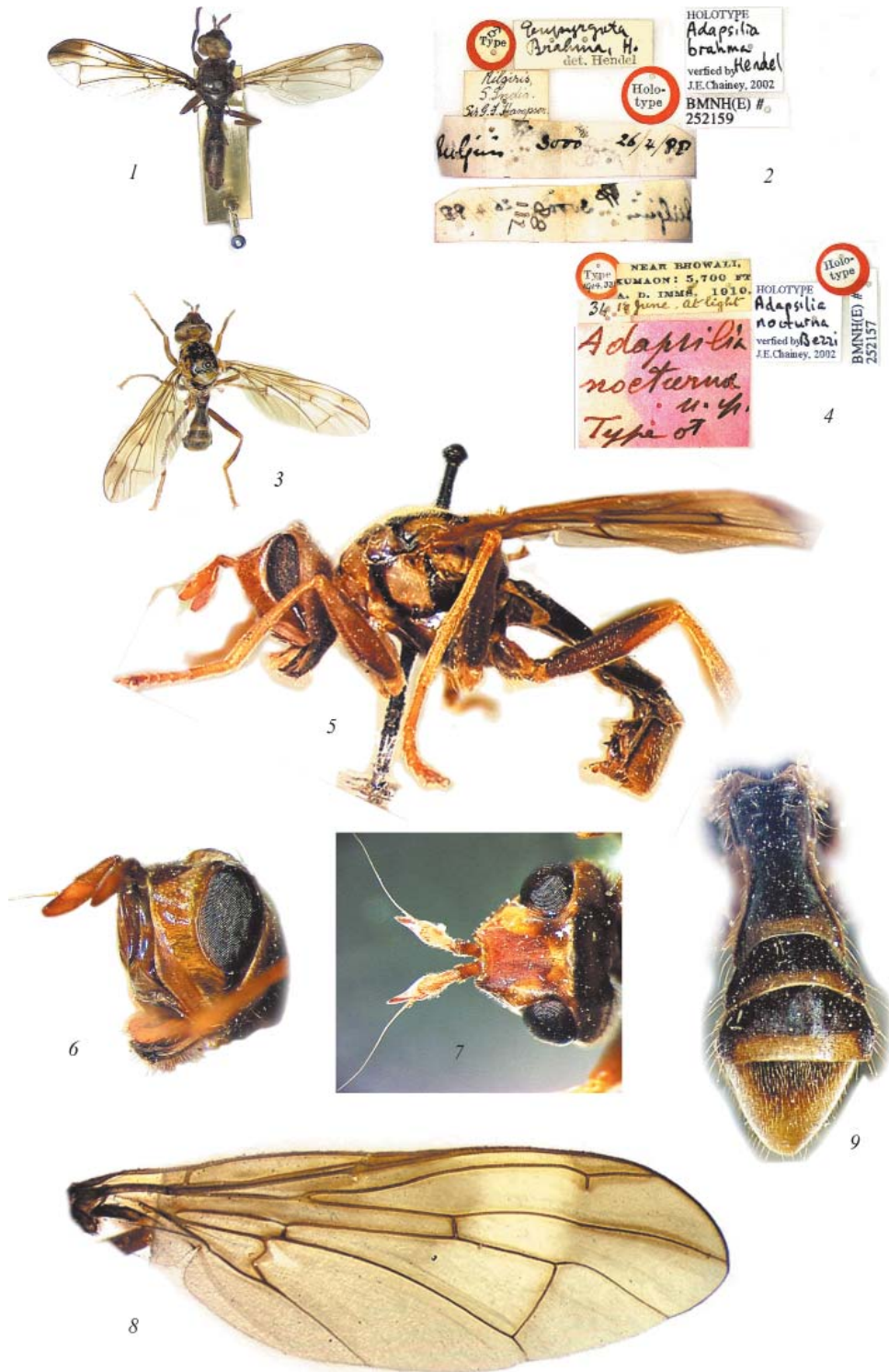


Fig. 5. *Eupyrigota brahma*, holotype ♀ *Adapsilia brahma* (BMNH) (1–2) and holotype ♀ *Adapsilia nocturna* (BMNH) (3–9): 1, 3 — habitus, dorsal; 5 — same, left; 2, 4 — labels; 6–7 — head (3 — anterior left view; 4 — dorsal); 8 — wing; 9 — abdomen, dorsally.

Рис. 5. *Eupyrigota brahma*, голотип ♀ *Adapsilia brahma* (BMNH) (1–2) и голотип ♀ *Adapsilia nocturna* (BMNH) (3–9): 1, 3 — общий вид, дорсально; 5 — same, слева; 2, 4 — этикетки; 6–7 — голова (3 — спереди слева view; 4 — дорсально); 8 — крыло; 9 — брюшко, дорсально.

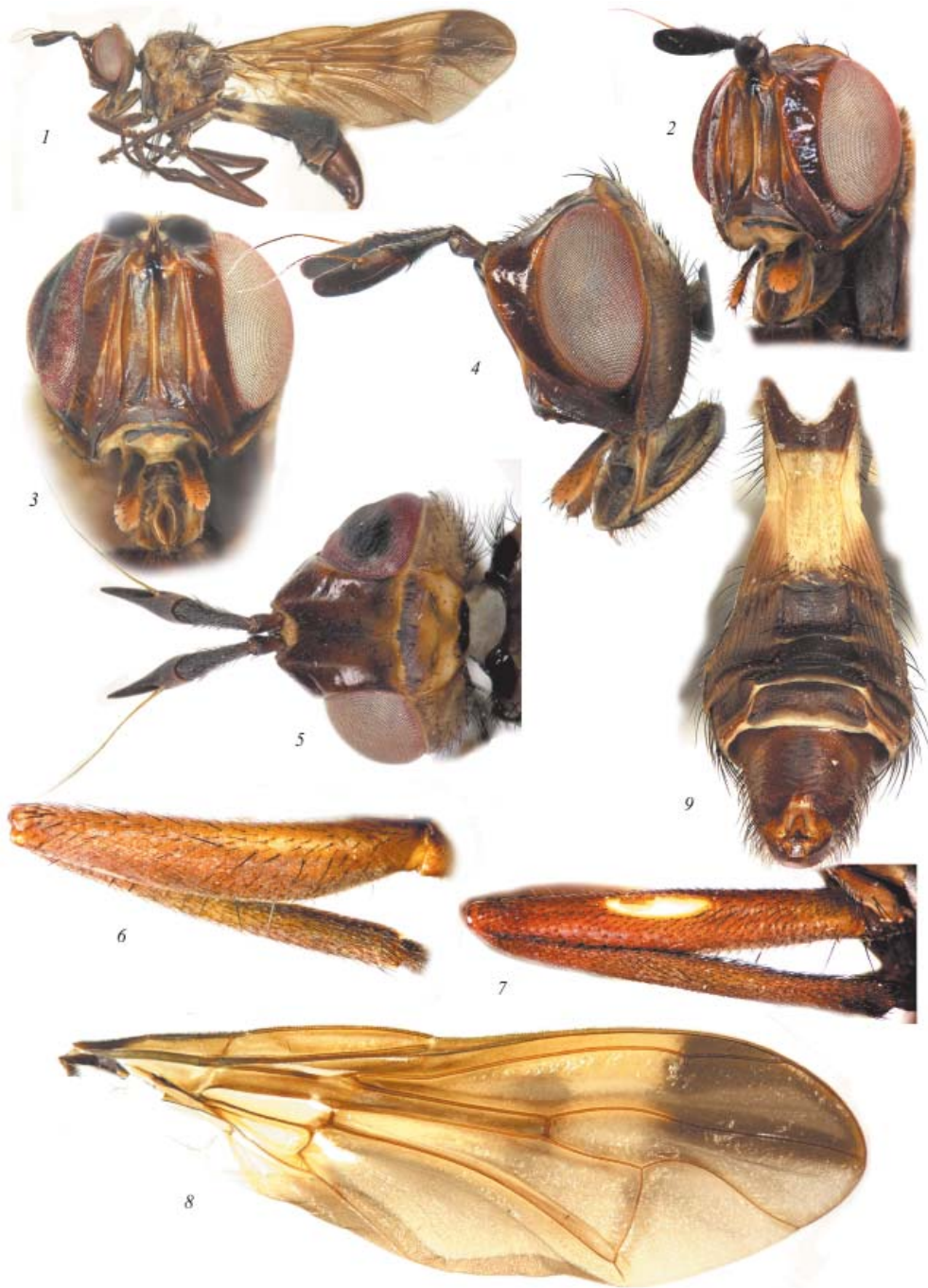


Fig. 6. *Eupyrgota nyambene*, sp. n., holotype ♀ (NMKE): 1 — habitus, left; 2–5 — head (2 — anterior left; 3 — anterior; 4 — left; 5 — dorsal); 6 — fore femur, posterior view; 7 — mid femur, anterior; 8 — wing; 9 — abdomen, ventral.

Рис. 6. *Eupyrgota nyambene*, sp. n., голотип ♀ (NMKE): 1 — общий вид, слева; 2–5 — голова (2 — спереди слева; 3 — спереди; 4 — слева; 5 — дорсально); 6 — переднее бедро, вид сзади; 7 — среднее бедро, спереди; 8 — крыло; 9 — брюшко, вентрально.

first flagellomere-pedicel ratio 1.25; medial vertical seta  $0.2\times$  as long as vertical diameter of eye; lateral vertical seta non-distinguishable from postocular setulae; postocellar, three ocellar and orbital setae  $0.6\text{--}0.8\times$  as long as medial vertical seta. Fronto-orbital plates and parafacial shining, yellowish brown to dark brown, with sparse shallow wrinkles and pits (fig. 2, 2). Antennal groove brownish yellow, with dark brown ventral margin. Gena dark brown. Epistoma black,  $0.17\times$  as high as facial carina. Supracervical area with dark brown spot. Palp as long as flagellomere 1;  $3\times$  as long as wide, black at base, dark yellow, moderately short black setulose and gray microtrichose on the rest.

Thorax dark yellow, largely gray microtrichose and black setulose, with brown anteprotum, supra-alar vitta and prescutellar area on mesonotal scutum, katepisternum, meron, and anatergite; 1–2 postpronotal, 0 + 2 supra-alar, 1 intra-alar, 2 postalar, 1 dorsocentral, and 0 prescutellar acrostichal setae; proepisternal ridge with 30–35 moderately long setae; anepisternum, anepimeron, and katepisternum each with one long black seta and numerous (10–20) additional long setulae  $0.6\text{--}0.8\times$  as long as seta; scutellum with 2 strong setae on its right and 3 strong setae on its left side  $1.2\text{--}1.4\times$  as long as scutellum, plus 2–3 slightly thinner setae between and anterior of them; mesonotum length 3.6 mm.

Wing (fig. 6, 8) yellow, with diffuse brown spots in anteroapical corner and around crossvein r-m, with partly hyaline cells bm and cup, anal cells, and alula. Wing length 17.0 mm.

Coxae and trochanters with moderately thickened setulae, fore and hind coxae dark brown, mid coxa lighter; fore trochanter with hooked setulae. Femora brown, short setulose, with moderately short dorsal setae; fore femur (fig. 6, 6) narrow,  $4.2\times$  as long as wide, slightly wrinkled, short setulose, with 9–10 short suberect setae on dorsal side; mid femur (fig. 6, 7) in female with narrow oval femoral organ  $0.4\times$  as wide as femur and 6 times as long as wide; tibiae and tarsi brown, black setulose, neither conspicuously curved, nor thickened.

Abdomen dark brown, black setulose; syntergite 1 + 2 with II-shaped pale yellow and bare mark at base of tergite 2, moderately narrowed,  $2.8\times$  as long as wide at middle and  $1.31\times$  as long as wide at posterior margin in female,  $1.6\times$  as long as tergites 3–6 in female; synsternite 1 + 2 pale yellow, except base and apex dark brown,  $4\times$  as long as wide at posterior margin in female; sternites 3–6 dark brown, subrectangular, with moderately short and sparse setulae; pleura mostly brown (fig. 6, 9).

Female terminalia: ov scape subshining yellowish brown to dark brown, robust,  $0.75\times$  as long as preabdominal tergites combined and slightly wider than long on ventral side; apicoventrally with pair of soft lobes, densely covered by trichoid sensilla and closing ov scape aperture at rest; pair of strong black apically rounded, wide and relatively thin hooks; ventral surface of ov scape anterior to hooks broadly desclerotized, with rather narrow stripes bearing 14–16 reddish yellow setulae in 3–4 rows on basal portion and numerous trichoid sensillae apically; aculeus and spermathecae not examined (specimen not dissected).

**E t y m o l o g y.** The species is named for its type locality. It is a noun in apposition.

**R e m a r k s.** In the key to Afrotropical *Eupyrgota* species (Korneyev, 2006 b), this species runs to couplet 8, which must be modified as follows:

8. Fore- and hindfemur thickened, in female with strong appressed setae dorsally; midfemur with femoral organ well developed. Frons at anterior margin wide,  $0.55\text{--}0.65$  times as wide as head. Flagellomere 1 slightly longer than pedicel and less than half as wide as parafacial. Oviscape with thickened black setae anterior to hooks (similar to those in *E. latipennis*). Democratic Republic of Congo. .... *E. crassipes* V. Korneyev, 2006
- Fore- and hindfemur narrow, without enlarged setae on dorsal side; midfemur with or without femoral organ. Frons at anterior margin narrower,  $0.4\text{--}0.5$  times as wide as head. Other characters variable. .... 8 a
- 8 a. Larger species: wing longer than 14 mm, yellow with two brown areas. Scutellum, anepisternum, anepimeron and katepisternum with additional long setulae almost as long as regular setae. Midfemur of female with small femoral organ. Kenya. .... *E. nyambene* sp. n.
- Smaller species: wing shorter than 13 mm (7–12), widely brown along whole anterior margin. Scutellum, anepisternum, anepimeron and katepisternum at most with short setulae less than half as long as regular setae. Midfemur without femoral organ. ... *melancholica* subgroup. .... 9

***Eupyrgota vespiformis*** (Enderlein, 1942) (fig. 7)

**Material** (additional to published). **Kenya**: Western Province, Kakamega Forest, 0°14.13' N, 34°51.87' E, Malaise trap, 9–16.04.2000, 1 ♀ (Copeland) (NMKE).

**Remarks.** This specimen shows several characters supplementary to the redescription in Korneyev (2006 b: 124): parafacial dark brown to black, usually with yellow spot at level of antennal base, shining, often wrinkled (fig. 7, 2, 3); fronto-orbital plates very wide and shining, smooth or wrinkled, as wide as or wider than matt frontal vitta (fig. 7, 4); eversible membrane half as long as dorsal side of oviscape (fig. 7, 6).

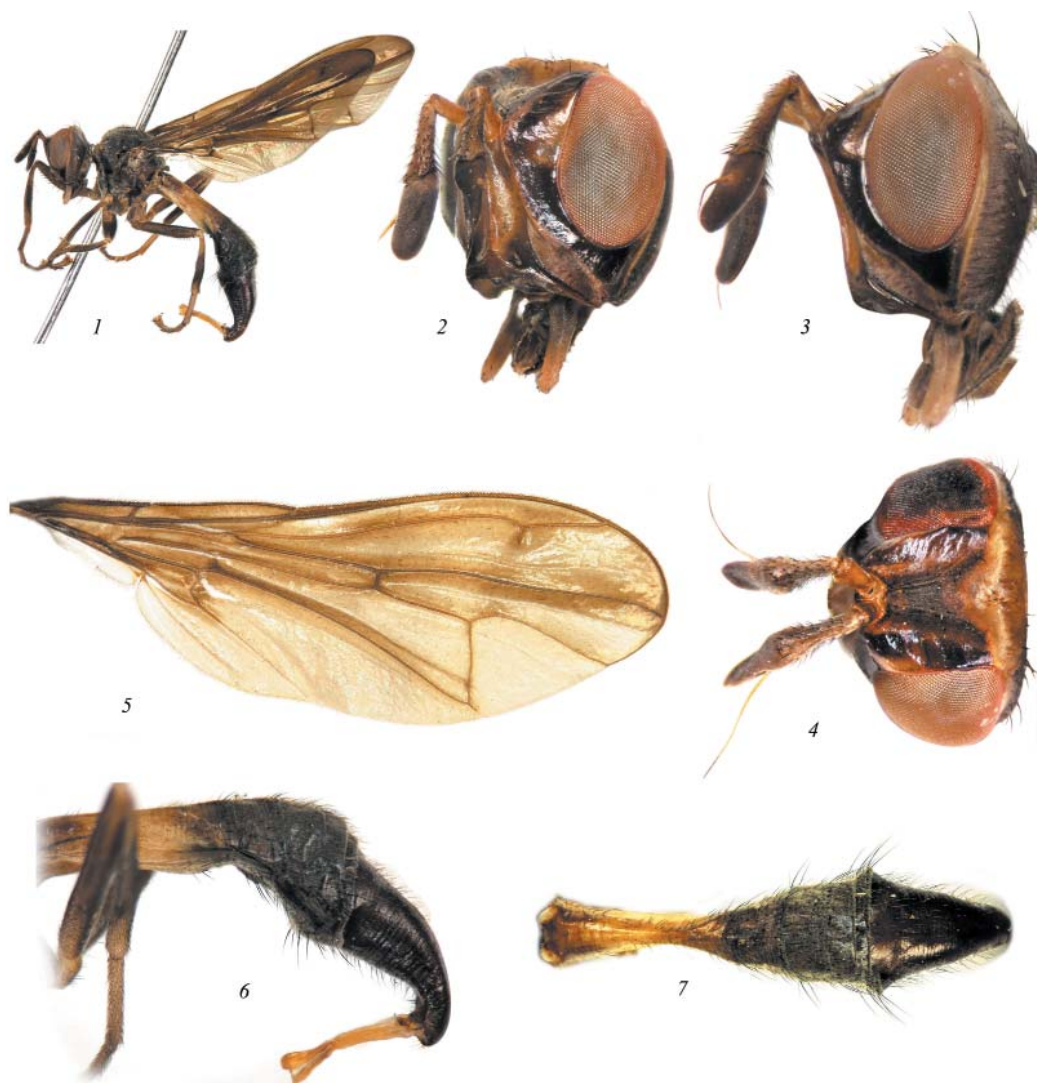


Fig. 7. *Eupyrgota vespiformis*, ♀ (NMKE): 1 — habitus, left; 2–4 — head (2 — anterior left; 3 — left anterior; 4 — dorsal); 5 — wing; 6–7 — abdomen (6 — left; 7 — dorsal).

Рис. 7. *Eupyrgota vespiformis*, ♀ (NMKE): 1 — общий вид, слева; 2–4 — голова (2 — спереди слева; 3 — слева спереди; 4 — дорсально); 5 — крыло; 6–7 — брюшко (6 — слева; 7 — дорсально).

**Subgenus *Asipyrgota* V. Korneyev, subgen. n.**

Type species: *Adapsilia flaviseta* Aldrich, 1928: 2.

**Diagnosis.** The type species in its robust body and widely brown wing and legs, as well as female aculeus and male genitalia structure agrees with *Eupyrgota* s. str. differing by the structure of the apico-ventral portion of the oviscape (a “sucker” instead of hooks); the only species can be recognized also from. See also remarks for *E. (A.) flaviseta*.

**Description.** Moderately large, robust species; widely and uniformly darkened; scutellum with 3 pairs of setae; fore and mid trochanters of female without spiny or hook-like setulae; oviscape without ventral hooks, but with desclerotized U-shaped area and narrower oval sucker-like area inside, rimmed with narrow bare area (fig. 8, 11, 12). Male genitalia (fig. 8, 7–9) similar to those in *Eupyrgota* (s. str.).

***Eupyrgota (Asipyrgota) flaviseta* (Aldrich), comb. n. (fig. 8)**

Aldrich, 1928: 2; Clausen et al., 1933: 13 (*Adapsilia*); Steyskal, 1977: 41 (*Peltodasia*) (India).

**Material. Type.** Holotype ♀: **India:** Assam, Meghalaya: “Shillong”, “C. R. Clausen”, “*Adapsilia flaviseta* Ald.” [Aldrich handwriting], “Type No 40983 U.S.N.M.” [red paper square] (USNM). Paratypes: 4 ♀ (1 dissected); labels as in the holotype (USNM). **Non-type: India:** Assam, Meghalaya: Shillong, “*Adapsilia* sp., ortalid parasite on *P.[opilia] cupricollis*”, 1 ♂ (dissected) (L. B. Parker leg.) (USNM).

**Diagnosis.** This species can be recognized from the combination of face with facial carina; epistoma low, 0.10–0.15× as high as antennal groove; parafacial yellow, in profile 1.6 times as wide as flagellomere 1 (fig. 8, 3, 4); scutum blackish brown with yellow postpronotal lobe and scutellum; scutellum with at least two (often three) pairs of short and fine black setae; wing 9–9.5 mm long, uniformly brown on anterior two-thirds, pale gray along posterior margin, cells bm and bcu hyaline (fig. 8, 1); fore coxa unmodified; fore and mid trochanters without spinulose setulae; fore femur (fig. 8, 5) robust, 3.5× as long as wide, dark brown, except apicoventrally reddish yellow, without long setae, except thickened setae in ventro-apical rows black, spurious and short (0.15× as long as femur width); mid femur without femoral organ (fig. 8, 6); tibia brown, sometimes partly yellow; abdominal tergites blackish brown, syntergite 1 + 2 laterally yellow (in male with yellow belt at constricted part), tergites 5 and 6 posteriorly yellow (fig. 8, 10); surstyli as in fig. 8, 7; glans of phallus as in fig. 8, 8, 9; oviscape blackish brown with orange yellow apex (fig. 8, 10); its ventral area as in fig. 8, 12; without hooks, but with desclerotized area and oval sucker inside of it; ventral receptacle as in other Pyrgotini; 3 sausage-like spermathecae, in examined female one spermathecal duct partly branched, with rudimentary additional spermatheca (fig. 8, 14).

**Remarks.** This species is closely related to *Eupyrgota* (s. str.), as indicated by the presence of the nipple-like lobes on the prosternum (synapomorphy of the genus *Eupyrgota*), robust habitus and the presence of more than 2 pairs of scutellar setae (possible synapomorphies at least with some species of *Eupyrgota* (s. str.)), and even could be considered a very specialized species inside of this lineage. It differs by lacking the paired sclerotized hooks on the oviscape (the presence of which is the key character and possible synapomorphy of *Eupyrgota* (s. str.) + *Taeniomastix*). The lack of the hooks (absent in other Pyrgotini) can be either primary absence (then *Asipyrgota* is a sister group to *Eupyrgota* s. str. + *Taeniomastix*) or secondary lack (then *Asipyrgota* is an in-group of *Eupyrgota* (s. str.), and the latter one is a paraphyletic group). The second hypothesis does not sound less probable. The hooks can be lost due to further transformation of the oviscape, possibly as the result of adaptation for oviposition into the abdomen of the male host; by far, this is the only documented case of specialization of pyrgotids for parasitizing males.

Also, this is one of the few pyrgotids with described larvae (Clausen et al., 1933).



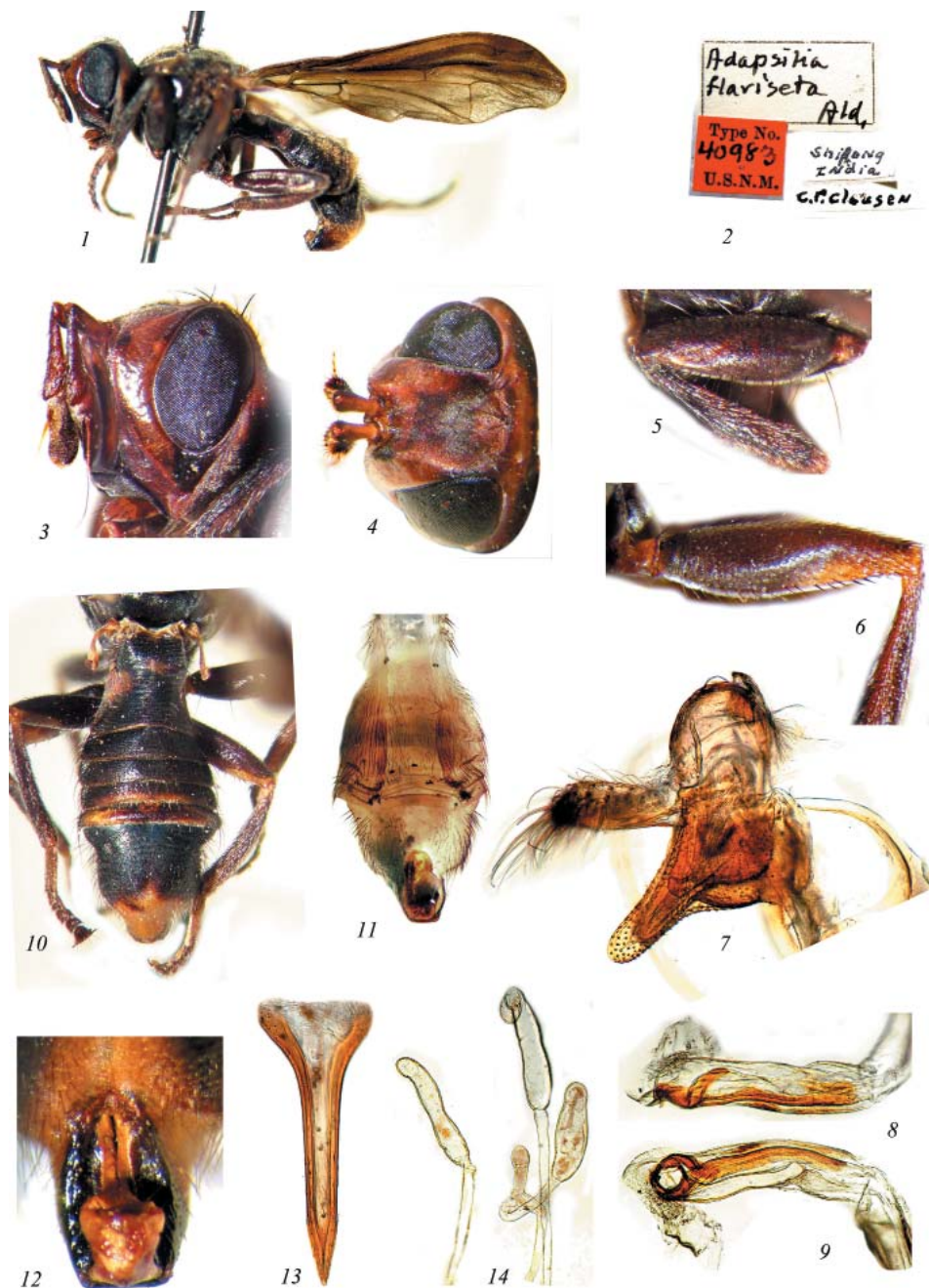


Fig. 8. *Eupyrgota flaviseta*, holotype ♀ (1-6), paratypes ♀ (7-9) and ♂ (10-14) (USNM): 1 — habitus, left; 2 — labels; 3-4 — head (3 — left; 4 — dorsal); 5 — fore femur and tibia, posterior view; 6 — mid femur, anterior view; 7 — epandrium, right; 8-9 — phallus glans, right and ventral; 10 — abdomen, dorsal; 11 — same, ventral, macerated in KOH; 12 — oviscape apex, ventrally; 13 — aculeus, ventral; 14 — spermathecae.

Рис. 8. *Eupyrgota flaviseta*, голотип ♀ (1-6), паратипы ♀ (7-9) и ♂ (10-14) (USNM): 1 — общий вид, слева; 2 — этикетки; 3-4 — голова (3 — слева и спереди; 4 — дорсально); 5 — переднее бедро и голень, вид сзади; 6 — среднее бедро, вид спереди; 7 — эпандрий справа; 8-9 — гланс фаллоса, справа и вентрально; 9 — средний вертлуг; 10 — брюшко, сверху; 11 — то же, вентрально, мацерировано в КОН; 12 — вершина основного членика яйцевода, вентрально; 13 — акулес; 14 — сперматеки.

All examined specimens were mounted and dried after storage in alcohol and have strongly shriveled wings, and this is why I do not illustrate its coloration and pattern, referring to the drawing in Clausen et al. (1933: fig. 7).

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