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First data on the genus *Elaphropeza* Macquart (Diptera: Hybotidae) from Madagascar, with descriptions of two new species

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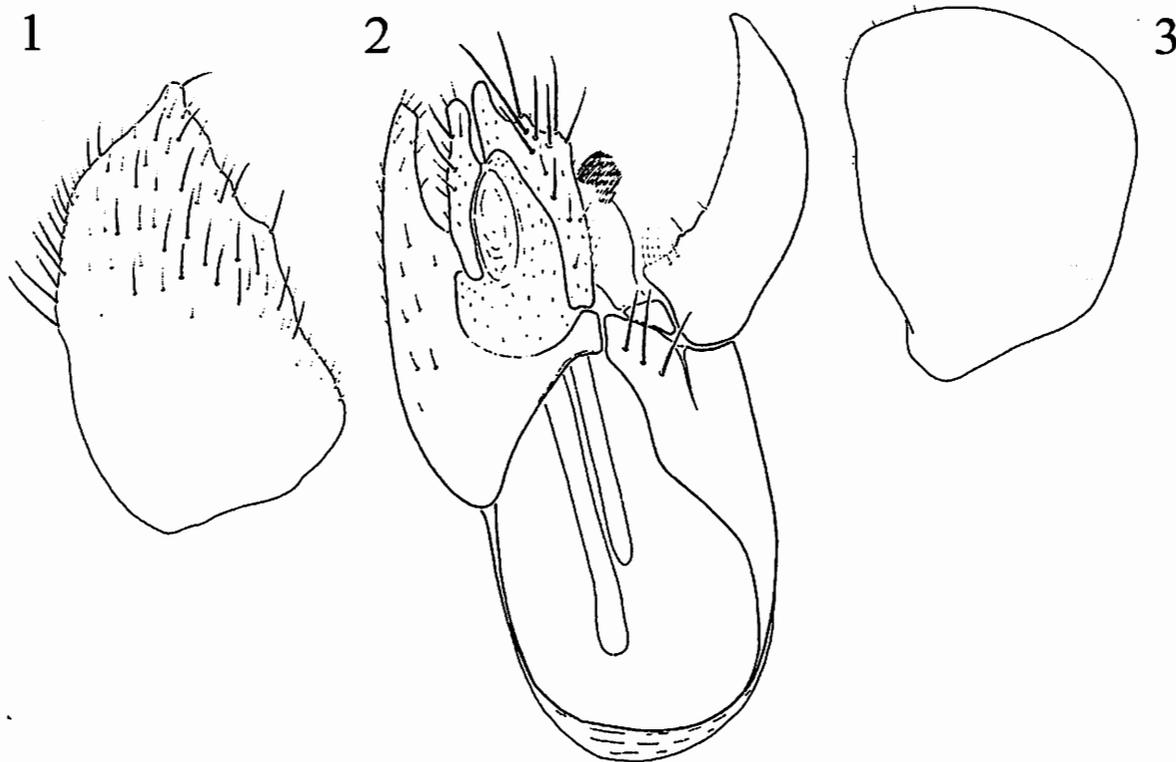
Abstract

Two new species of the genus *Elaphropeza* Macquart are described from Madagascar: *E. madagascariensis* sp. nov. (Type-locality: Ambohitra, 800 m, Joffreville) and *E. freidbergi* sp. nov. (Type-locality: Ambohitra, 800 m, Joffreville).

Keywords: Diptera, Hybotidae, *Elaphropeza*, new species, Madagascar, Afrotropical

The genus *Elaphropeza* Macquart is best represented in tropical areas and currently includes about 230 species described worldwide. That figure is probably far from the real number. In the Afrotropical region only 20 species are known and most of them have been described from South Africa (Smith, 1969). Actually, *Elaphropeza* is very diverse in most parts of Africa and many new species are still waiting for description. Here we present two hitherto unknown species of *Elaphropeza* taken from Madagascar. Thus, formally, this paper is the first record of the family Hybotidae (with named species) from Madagascar. In fact, like on continental Africa, Hybotidae (including *Elaphropeza*) of Madagascar is very rich in species, though the entire fauna remains completely unknown. This study is based on the

Diptera material housed in Tel Aviv University, Israel. Pinned specimens were used. For details of the methods, including morphological terms, descriptive format and related references, we refer to the paper published recently by the authors (Shamshev & Grootaert, 2007). In descriptions, the costal index is based on distances measured directly from tip to tip of the first three veins where they join the costa. The first section is measured from the humeral crossvein rather than the wing base for purposes of accuracy. The right and left side of the male terminalia are based on the unrotated position viewed posteriorly, such that in the illustrations the right surstylus appears on the readers left side and vice versa. All male terminalia are figured in their unrotated position.



Figs 1-3. *Elaphropeza madagascariensis* sp. nov. 1 - right epandrial lamella, lateral view, 2 - epandrium with cerci, 3 - left surstylus, lateral view. Scale 0.1 mm.

Elaphropeza madagascariensis sp. nov.
(Figs 1-3)

Material examined. Holotype male, MADAGASCAR N., Ambohitra 800 m, Joffreville, 9-12.04.1991, A. Freidberg & Fini Kaplan [TAU].

Paratypes: 2 males, 1 female, same data as in holotype [1 male and 1 female in TAU, 1 male in RBINS, Brussels].

Diagnosis. Recognised by black occiput, pale yellow antennae, very short postpedicel, largely yellow thorax with brown scutellum, metanotum and prescutellar depression, hind tibia with 2 anterodorsal setae, halter with brownish knob.

Description. Male. Length: body 1.8-1.9 mm, wing 2.0-2.1 mm. Occiput entirely black, greyish pollinose round neck, near moth-opening and narrowly behind eyes in lower part, otherwise shining; with yellowish setation; inner verticals long inclinate, outer verticals hardly prominent. Ocellar tubercle greyish pollinose; anterior ocellars long proclinate, posterior ocellars minute. Frons shining, very narrow, above antennae about as broad as anterior ocellus. Clypeus silvery white. Antenna entirely pale yellow, stylus brownish; pedicel with circlet of subequally short setulae;

postpedicel subtriangular, short, nearly 1.5 times longer than wide; stylus with short pubescence, very long, nearly 8.0 times longer than postpedicel, about 4.0 times as long as scape, pedicel and postpedicel combined. Proboscis yellowish. Palpus yellow, small, rounded, silvery pubescent, bearing scattered minute setulae and 1 moderately long yellowish subapical seta.

Thorax almost entirely yellow, shining, with yellowish setation; anteprenotum brownish dorsally, scutum with dark brown subrectangular spot occupying entire prescutellar depression, scutellum and metanotum entirely dark brown and tomentose, mesopleuron with large rounded dark brown spot, hypopleuron narrowly yellowish brown in upper part. Prothoracic episterna lacking long upturned seta just above fore coxa. Postpronotal seta hardly prominent. Mesonotum with 2 notopleurals, 1 very short postsutural supra-alar, 1 similar postalar and 4 scutellars (apical pair very long, cruciate; lateral pair minute); acrostichals minute, uniserial, prominent on anterior part of scutum; dorsocentrals uniserial, mostly minute, prescutellar pair long (nearly as long as apical scutellars).

Legs long, slender, mostly with yellowish setation, almost entirely yellow, tarsomere 5 slightly darkened. Coxae and trochanters with

unmodified setation. Fore femur slightly thickened, with hardly prominent rows of anteroventral and posteroventral setulae, long seta near base and moderately long subapical seta anteriorly. Fore tibia lacking prominent bristles (except subapicals). Mid femur with anteroventral and posteroventral setulae stronger and longer basally, 1 long seta near base and 1 subapical seta anteriorly. Mid tibia lacking ventral spinules and prominent setae (except subapicals). Hind femur with hardly prominent anteroventrals and 4–5 erect dorsal setae near base. Hind tibia with 2 brownish, wide apart, anterodorsal setae, almost lacking setulae dorsally; apical projection small, rounded, brownish. Tarsi of all legs unmodified, with unmodified setation; hind tarsomere 1 with some brownish spinule-like ventral setulae.

Wing normally developed, hyaline, covered with uniform microtrichia; veins mostly yellowish to brownish yellow, basal section of vein CuA₁ thicker, brownish. Costal vein with moderately long setulae along anterior margin. Costal bristle long, yellowish. Costal index: 58/25/47. Vein Rs nearly as long as crossvein bm-cu. Vein R2+3 evenly bowed. Veins R4+5 and M1+2 somewhat divergent near wing apex, the former slightly bowed, the latter straight. Vein CuA1 reaching wing margin. Vein A1 lacking. Crossvein bm-cu slightly oblique. Crossvein r-m before middle of cell bm. Halter with brownish knob and yellow stem.

Abdomen. Tergite 1 yellow; tergites 2–3 brownish, subtriangular viewed laterally, divided medially, with scattered unmodified setae; tergite 4 dark brown, broadest, with squamiform setae; tergite 5 narrow, undivided, with squamiform setae; tergites 6 nearly as wide as tergite 5, divided, with minute unmodified setae; tergite 7 broad, undivided, with long posteromarginal setae; tergite 8 unmodified. Sternites weakly sclerotised (except sternites 7–8), with scattered minute setulae, sternite 8 with long posteromarginal setae. Gland-like structures present between tergites 4–5.

Terminalia (Figs 1–3) small, brownish, left surstylus shining. Cerci narrowly separated; right cercus digitiform, short, with short unmodified bristles; left cercus unbranched, short, rather digitiform, with several unmodified bristles longer subapically. Epandrium completely divided. Right epandrial lamella subtriangular, pointed, covered with numerous unmodified bristles of different lengths. Right surstylus not prominent. Left epandrial lamella fused to hypandrium, with 3 moderately long bristles apically. Left surstylus

with upper lobe large, broadly ovate, with scattered minute submarginal setulae and several longer setae basally. Hypandrium with 2 short strong bristles on apical part. Phallus very short. Two rod-shaped apodemes.

Female. Cercus yellowish brown. Otherwise as in male.

Etymology. The epithet refers to entire region of origin of the new species, Madagascar.

Distribution. Madagascar.

Remarks. *Elaphropeza madagascariensis* sp. nov. belongs to the *E. ephippiata* group (Shamshev & Grootaert, 2007). Within the key to the South African species of *Elaphropeza* (Smith, 1969) the new species runs to *E. dingaani* Smith differing from it primarily by thoracic pattern, brownish knob of halteres and by the presence of 2 anterodorsal setae on the hind tibia (vs. 1 seta in *E. dingaani*).

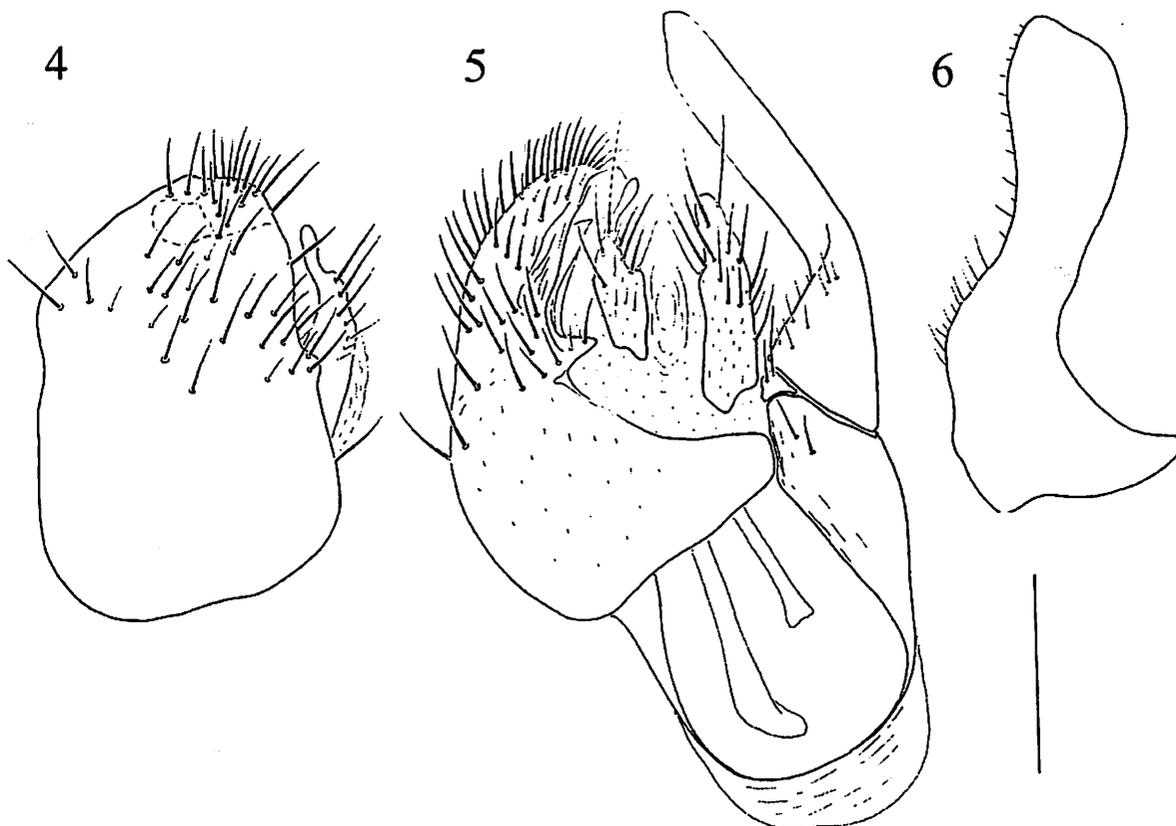
Elaphropeza freidbergi sp. nov.
(Figs 4–6)

Material examined. Holotype male, MADAGASCAR N., Ambohitra, 800 m, Joffreville, 9–12.04.1991, A. Freidberg & Fini Kaplan. [in TAU].

Paratypes: 4 males, MADAGASCAR N. Ambohitra 800 m, Joffreville, 9–12.04.1991, A. Freidberg & Fini Kaplan. 1 male, MADAGASCAR NW, NosyBe, Forest, SE Lakobe Res, 5.04.1991, A. Freidberg & Fini Kaplan. 1 female, MADAGASCAR NW, Nosy Be, Beach, Ambatoloaka, 4, 7.04.1991, A. Freidberg & Fini Kaplan [4 males and 1 female in TAU, 1 male in RBINS, Brussels].

Diagnosis. Recognised by black occiput, brown elongate postpedicel and yellow basal scape and pedicel, largely yellow thorax with brownish spot above wing base, entirely brown metanotum and partly brownish yellow mesopleuron, sternopleuron and hypopleuron, hind tibia with 2 anterodorsal setae, halter with brownish knob.

Description. Male. Length: body 1.8–1.9 mm, wing 2.1–2.2 mm. Occiput entirely black and finely greyish pollinose; with yellowish setation; inner verticals moderately long inclinate, outer verticals hardly prominent. Ocellar tubercle greyish pollinose; anterior ocellars long proclinate (longer than inner verticals), posterior ocellars minute. Frons shining, very narrow, slightly broadened



Figs 4-6. *Elaphropeza freidbergi* sp. nov. 4 - right epandrial lamella and right cercus, lateral view, 5 - epandrium with cerci, 6 - left surstylus, lateral view. Scale 0.1 mm.

toward ocellar tubercle, above antennae about as wide as anterior ocellus. Clypeus greyish. Antenna with scape and pedicel yellow, postpedicel (except extreme base) and stylus brownish; pedicel with circlet of subequally short setulae; postpedicel elongate, nearly 3.0 times as long as wide; stylus with short pubescence, rather short, nearly 1.5 longer than postpedicel, about as long as scape, pedicel and postpedicel combined. Proboscis brownish to yellowish brown. Palpus yellow, rather small, rounded, silvery pubescent, bearing scattered minute setulae and 1 longer pale subapical seta.

Thorax almost entirely yellow, shining, with yellowish to brownish yellow setation; scutum with brownish elongate-ovate spot above wing base, metanotum entirely brownish, mesopleuron, sternopleuron and hypopleuron with large brownish yellow spots; scutellum and metanotum densely tomentose. Prothoracic episterna lacking long upturned seta just above fore coxa. Postpronotal lobe with several moderately setae. Mesonotum with 2 long notopleurals (darker than other mesonotal setae), 1 similar postsutural supra-alar, 1 short postalar and 4 scutellars (apical pair very long, cruciate; lateral pair minute);

acrostichals long, mostly arranged in 2 wide apart, irregular rows, 3-4 serial near anterior margin of scutum, lacking on prescutellar depression; dorsocentrals 3-4 serial anteriorly, becoming uniserial toward scutellum, mostly as long as acrostichals, prescutellar pair long (nearly as long as apical scutellars).

Legs long, slender, entirely yellow. Coxae and trochanters with unmodified setation. Fore femur with rows of minute anteroventral and posteroventral setulae and long seta near base. Fore tibia lacking prominent bristles (except subapicals). Mid femur with rows of anteroventral and posteroventral setulae, 1 long seta near base and 1 subapical seta anteriorly. Mid tibia with row of black ventral spinules including 1 stronger subapical spinule, lacking prominent setae (except subapicals). Hind femur with several papilla-like projections near base posteriorly, bearing hardly prominent anteroventrals and 4-5 erect dorsal setae near base. Hind tibia with 2 brownish anterodorsal setae on middle part; apical projection small, pointed, brownish. Tarsi of all legs unmodified, with unmodified setation; hind tarsomere 1 with some brownish spinule-like ventral setulae.

Wing normally developed, hyaline, covered with

uniform microtrichia; veins mostly yellowish to brownish yellow, veins R_1 , R_{4+5} and basal section of vein CuA_1 thicker, brownish. Costal vein with moderately long setulae along anterior margin. Costal bristle long, brownish yellow. Costal index: 57/19/43. Vein R_s nearly as long as crossvein $bm-cu$. Vein R_{2+3} evenly bowed. Veins R_{4+5} and M_{1+2} somewhat divergent near wing apex, the former slightly bowed, the latter straight. Vein CuA_1 reaching wing margin. Vein A_1 present as fold. Crossvein $bm-cu$ slightly oblique. Crossvein $r-m$ before middle of cell bm . Halter with brownish knob and yellow stem.

Abdomen. Tergite 1 yellowish, tergites 2–3 brownish yellow, subtriangular viewed laterally, divided along midline, with unmodified setation; tergite 4 brown, broadest, with squamiform setae; tergite 5 brown, very narrow, with squamiform setae; tergite 6 brownish yellow, nearly as broad as tergite 5, with short unmodified setae; tergite 7 with long posteromarginal setae. Gland-like structures present between tergites 4–5, ampoule-like.

Terminalia (Figs 4–6) rather large, yellowish, left surstylus somewhat darker. Cerci broadly separated; right cercus digitiform, short, narrowly prolonged apically, with several unmodified bristles; left cercus unbranched, somewhat longer than right cercus, digitiform, with several unmodified bristles longer subapically. Epandrium completely divided. Right epandrial lamella subrectangular, broadly ovate apically, covered with numerous unmodified bristles of different lengths. Right surstylus not prominent. Left epandrial lamella fused to hypandrium, with 2

moderately long bristles apically. Left surstylus with upper lobe long, narrow, sinuate, with short submarginal setae longer basally. Hypandrium with 2 long bristles on apical part. Phallus very short. Two rod-shaped apodemes.

Female. Cercus yellowish brown. Otherwise as in male.

Etymology. The new species is named after Dr. Amnon Freidberg (Tel Aviv, Israel) who collected materials used in this study.

Distribution. Madagascar.

Remarks. *Elaphropeza freidbergi* sp. nov. belongs to the *E. ephippiata* group (Shamshev & Grootaert, 2007). Within the key to the South African species of *Elaphropeza* (Smith, 1969) the new species runs to *E. secunda* Smith differing from it primarily by thoracic pattern and brownish knob of halteres.

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