



Revision of the Australian stiletto fly genus *Acatopygia* Kröber (Diptera: Therevidae: Agapophytinae)

SHAUN L. WINTERTON

Queensland Department of Primary Industries & Fisheries, Indooroopilly, Queensland, Australia.
e-mail: wintertonshaun@gmail.com

Abstract

The endemic Australian stiletto fly genus *Acatopygia* Kröber is revised. *Acatopygia pulchella* Kröber and *Acatopygia paradoxa* (Kröber) are redescribed and a neotype for *A. paradoxa* designated. A new species, *Acatopygia olivacea* **sp. nov.**, is described and a key to *Acatopygia* species is presented.

Key words: Stiletto fly, Asiloidea

Introduction

The Australasian stiletto fly subfamily Agapophytinae comprises 11 genera with over 300 described and undescribed species (Winterton *et al.* 2001), representing at least half the therevid biodiversity in the region. Agapophytinae presently includes the genera *Acatopygia* Kröber, *Acraspisa* Kröber, *Acraspisoides* Hill & Winterton, *Acupalpa* Kröber, *Agapophytus* Guérin, *Belonalys* Kröber, *Bonjeania* Irwin & Lyneborg, *Laxotela* Winterton & Irwin, *Parapsilocephala* Kröber, *Patanothrix* Winterton and *Pipinnipons* Winterton. These genera are restricted to Australia, Papua New Guinea and the eastern provinces of Indonesia, although no single genus is recorded from all three regions (Winterton *et al.* 2001).

Acatopygia is endemic to eastern Australia and is frequently found in sandy, heath habitat types (Mann 1929, Winterton *et al.* 2001). Two species were described previously: *Acatopygia pulchella* Kröber and *Acatopygia paradoxa* (Kröber). *Acatopygia paradoxa* was originally described in *Spatulipalpa* Kröber (Kröber 1912b), but *A. paradoxa* was subsequently designated the type species of *Spatulipalpa* by Irwin & Lyneborg (1989) and transferred to *Acatopygia*, thus synonymising the genus. The other species in that genus described by Kröber, *Spatulipalpa ornata* Kröber, was left *incertae sedis* within Therevidae by Irwin & Lyneborg (1989), as it clearly did not belong to *Acatopygia*. *Spatulipalpa ornata* is known only from the original description as the type was apparently destroyed (pers. com., M. Foldvari, Hungarian National Museum of Natural History (HNMNH)), but it is clear from the description that it likely belongs to the genus *Laxotela* Winterton & Irwin (see Winterton 2007). The type of *A. paradoxa* was also apparently destroyed and no paratypes or other specimens determined by Kröber exist. As discussed by Winterton *et al.* (2001), Kröber mistook the female type of *A. paradoxa* for a male, as the description and figure (Kröber 1912b: page 221) clearly match the female from a series of specimens identifiable as *A. paradoxa* collected in southern New South Wales.

In this paper *Acatopygia* is revised with the two described species, *A. pulchella* and *A. paradoxa*, redescribed and figured. A new species, *Acatopygia olivacea* **sp. nov.**, is described and a key to *Acatopygia* species presented. Winterton *et al.* (2001) did not deem it necessary to designate a neotype for *A. paradoxa* in

their previous revision of the genus, but in light of the new species described and confusion regarding the sex of the original type specimen, a neotype is designated herein to stabilise the use of the name.

Materials and Methods

Terminology for wing venation follows McAlpine *et al.* (1981) and Irwin & Lyneborg (1981) and genitalic morphology as modified by Winterton *et al.* (1999a, b) and Winterton (2006). As discussed in Winterton (2006), this paper also follows Hauser & Irwin (2003) in the use of the term pubescence *sensu* Nichols (1989) instead of pruinescence to describe microtrichia covering the adult body.

Genitalia were macerated in 10% KOH at room temperature for one day to remove soft tissue, then rinsed in distilled water and dilute glacial acetic acid, and dissected in 80% ethanol. Female reproductive organs were stained with a saturated solution of Chlorazol Black in 40% ethanol. Genitalia preparations were placed in glycerine in a genitalia vial mounted on the pin beneath the specimen.

Types are located in the Queensland Museum (QMBA) and Queensland Department of Primary Industries & Fisheries (QDPI) insect collections, Brisbane, Australian Museum, Sydney (AMSA), and the Australian National Insect Collection, Canberra (ANIC), Australia, and the Deutsches Entomologisches Institut, Müncheberg (DEIC), Germany. Specimens deposited in the Michael E. Irwin Collection (MEIC) will ultimately be deposited in the California Academy of Sciences Collection, San Francisco (CASC), USA. Other collections listed include the New South Wales Department of Agriculture, Orange (NSWA), Mike Jefferies Collection, Canberra (MGJC) and Greg Daniels collection, Brisbane (GDCB). Numbers quoted with individual specimens as MEI ##### or ANIC29 ##### are unique identifiers in the therevid database MANDALA and are attached to each specimen as a yellow label (Kampmeier *et al.* 2004).

Taxonomy

Acatopygia Kröber

(Figures 1–4)

Acatopygia Kröber, 1912a: 149. Type species: *Acatopygia pulchella* Kröber, 1912a: 149 (by monotypy). – Kröber, 1913: 17 (redescription); Mann 1928: 42 (redescription); Irwin & Lyneborg, 1989: 353 (catalogue); Winterton *et al.* 2001: 195 (diagnosis).

Spatulipalpa Kröber, 1912b: 221. Type species: *Spatulipalpa paradoxa* Kröber, 1912b: 221 (by subsequent designation, Irwin & Lyneborg 1989: 353). – Kröber, 1913: 19 (redescription); Irwin & Lyneborg 1989: 353 (synonymy).

Diagnosis

Body slender, elongate; frons flat or slightly bulbous around base of antenna, often covered with elongate setae; wing strongly banded; wing cell m_3 closed; relatively elongate hind legs; epandrium arched, lateral margins extending ventrally; medial atrium present posteriorly between gonocoxites; gonocoxal apodemes approximately equal to length of gonocoxite; hypandrium with patch of strong, posteriorly directed setae; three spermathecae; spermathecal sac small rounded.

Redescription

Male and female. Body length: 6.0–8.0 mm.

Head. Shape longer than high; frons flat, slightly raised around base of antennae, overlain with pubescence but sometimes with glossy patch above antennae, usually admixed with elongate setae, male frons width at narrowest point either narrower than or equal width to ocellar tubercle, female frons much wider than ocellar tubercle; lower frons and face with silver or grey pubescence; ocellar tubercle black, overlain with

grey pubescence admixed with long, dark setae; male occiput concave or slightly convex; usually single row of postocular setae in male (2–3 poorly defined rows in male of *A. olivacea* **sp. nov.**); female occiput convex; 2–3 poorly defined rows of postocular setae; antennae positioned low on frons; length equal to or slightly shorter than head length; setae on antennae often enlarged; scape slightly wider than pedicel; flagellum gradually tapered (*A. olivacea* **sp. nov.**) to turbinate (*A. pulchella*), length approximately equal to combined length of scape and pedicel.

Thorax. Scutum dark, overlain with brown, green or grey pubescence, admixed with scattered dark setae, setae longer in male; macrosetae dark; scutellum relatively small, dark, sometimes overlain with matte, black pubescence anteriorly; pleuron glossy dark brown or black, partially overlain with dense, grey pubescence and long pale setae; coxae and legs dark or variously patterned with yellow; fore and hind femora with elongate velutum patch on ventral and posteroventral surfaces respectively; hind femur much longer than other femora; anteroventral subapical seta on hind femur absent (a row of dark, ventral setae present on all femora in *A. pulchella*); wing hyaline with dark banding, third medial cell (m_3) closed; scutal chaetotaxy: notopleural (np), 2–4; supraalar (sa), 1; postalar (pa), 1–2; dorsocentral (dc), 3–6; scutellar (sc), 1.

Abdomen. Elongate, glossy black or dark brown, extensive velutum dorsally on male abdomen (absent in *A. olivacea* **sp. nov.**); setae on abdomen of uniform size and distribution, not concentrated posteromedially on tergite 2.

Male genitalia. Epandrium width equal to length medially, posterolateral corners rounded or pointed, sometimes extending anterolaterally and ventrally to partially conceal gonocoxites; cercus elongate or short; tergite 8 emarginate medially; gonocoxite with large medial atrium with velutum-covered membrane; hypandrium large, quadrangular to sub-triangular, partially fused to gonocoxites laterally, numerous dark setae located medially along posterior margin; ventral lobe elongate, extending medially and dorsally, velutum present apically; gonocoxal apodeme narrow, shorter than or equal to gonocoxite length; gonocoxal process present, narrow, shorter than or equal in length to inner gonocoxal process; inner gonocoxal process spatulate apically; gonostylus curved medially along length; distiphallus straight or curved; dorsal apodeme of parameral sheath present, 'T'-shaped, fused laterally to gonocoxal apodeme in *A. olivacea* **sp. nov.**; ventral apodeme of parameral sheath often elongate, length equal to ejaculatory apodeme, rarely shorter; lateral ejaculatory apodeme present but not enlarged; ejaculatory apodeme narrow, elongate.

Female genitalia. Anterior process of tergite 8 narrow; three spherical spermathecae of equal size; spermathecal sac simple, spherical, without lobes; spermathecal ducts joining to common spermathecal sac duct; acanthophorite A1 setae well developed.

Comments

The shape of the gonocoxites and aedeagus indicates a close relationship between *Acatopygia* and *Patanothrix*. The banded wings and shape of the head and male genitalia are diagnostic for the genus. *Acatopygia* species are distributed throughout coastal south-eastern Australia. *Acatopygia pulchella* is common in south-eastern Queensland while *A. paradoxa* is more common in southern New South Wales. *Acatopygia olivacea* **sp. nov.** is less common than the other two species in collections and is known from southern Queensland to Northern New South Wales.

Included species

A. olivacea **sp. nov.**, *A. paradoxa* (Kröber 1912b), *A. pulchella* Kröber 1912a.

Key to *Acatopygia* species

1. Antennae and legs yellow..... *paradoxa* (Kröber).
- Antennae and legs brown..... 2.

2. Scutum dark with white dorsocentral stripes; male abdomen covered with dense, silver velutum dorsally, abdominal sternite setae filiform, not modified or scale-like*pulchella* Kröber.
- Scutum uniform olive-green coloured; male abdomen without silver velutum, black, scale-like setae on sternites 4–7..... *olivacea* **sp. nov.**

Acatopygia olivacea **sp. nov.**

(Figure 1)

Holotype female, AUSTRALIA: QUEENSLAND: Mt. Coot[-t]ha, 20.iii.1948 (MEI 25318) (ANIC). Condition: Good.

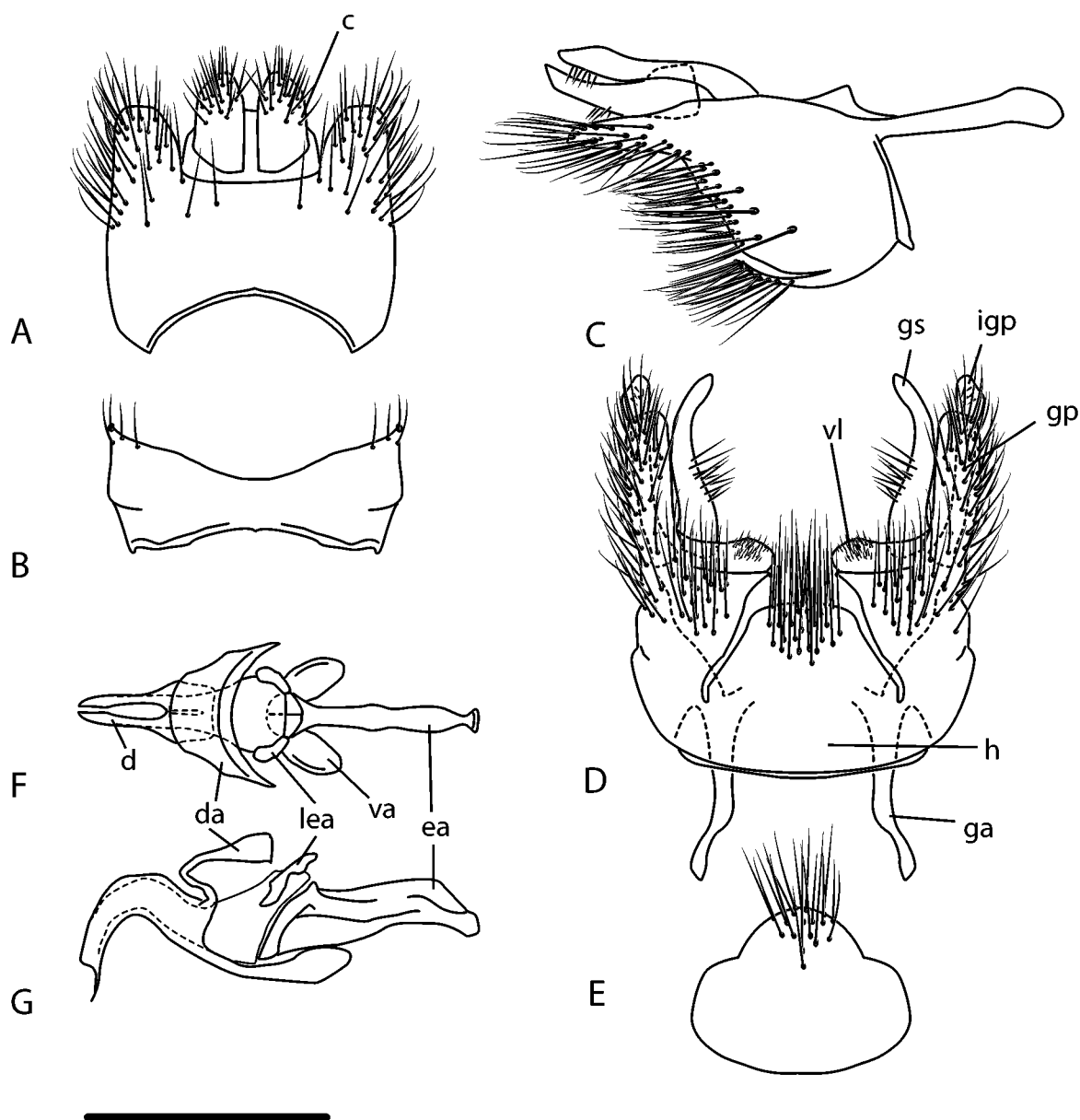


FIGURE 1. *Acatopygia olivacea* **sp. nov.**, male genitalia: A, eandrium, dorsal view; B, tergite 8, dorsal view; C, gonocoxites lateral view; D, same, ventral view; E, sternite 8, ventral view; F, aedeagus, lateral view; G, same, dorsal view. Abbreviations: *c*, cercus; *d*, distiphallus; *da*, dorsal apodeme of parameral sheath; *ea*, ejaculatory apodeme; *ga*, gonocoxal apodeme; *gp*, gonocoxal process; *gs*, gonostylus; *h*, hypandrium; *igp*, inner gonocoxal process; *lea*, lateral ejaculatory apodeme; *va*, ventral apodeme of parameral sheath; *vl*, ventral lobe. Scale line= 0.5 mm.

Paratypes, AUSTRALIA: QUEENSLAND: male, Pistol Gap, nr. Byfield, 23°10'S, 150°40'E, 10.i.1970, mv lamp, G.A. Holloway (MEI 25319) (AMSA); female, 5 km N Leyburn, 27°58'S, 151°38'E, 3.iv.1993, G.&A. Daniels, C.J. Burwell (MEI 33661) (GDCB/AMSA); male, Brisbane Forest Park: Scrub Road, 10.x.1997, 27°25'05"S, 152°50'13"E, open eucalypt forest, S. Winterton, N. Power, D. White, Malaise trap 3 (ANIC29 21105) (QDPI). NEW SOUTH WALES: male, Mosman, 20.ii.[19]24, Mackerras [J. Mann Coll.] (MEI 25317) (QMBA); female, Warrumbungle National Park, Brownes Creek nr. Wombelong Creek, M.E. Irwin, 12–16.xii.1995, nr. cliff overhang at water hole, 31°16'24"S, 148°57'38"E (MEIC/CASC).

Diagnosis

Scutum covered with olive-green pubescence; male frons wider than ocellar tubercle, occiput with multiple, poorly defined rows of postocular setae; legs brown; male abdomen without silver velutum; male sternites 4–7 with black, scale-like setae.

Description

Male: Body length: 7.5–8.0 mm.

Head. Frons flat, width equal to ocellar tubercle at narrowest point; frons and face glossy brown; frons overlain with sparse, brown pubescence dorsally, silver pubescence laterally between eye and base of antenna, admixed with short, dark setae; eye facets uniform size throughout eye, transverse furrow absent; ocellar tubercle flattened, black, overlain with grey pubescence admixed with several dark setae; occiput convex, dark, overlain with dense green-grey pubescence dorsally, changing to silver on lower portion and on gena; 2–3 poorly-defined rows of relatively long, black, postocular setae; gena overlain with silver-white pubescence admixed with white setae; palp and labellum brown, palp covered with dark setae; antennal length shorter than head; antenna orange-brown, overlain with brown-grey pubescence, admixed with scattered, dark setae on scape, pedicel, and base of flagellum; flagellum tapered gradually with two apical segments; style pale.

Thorax. Glossy dark brown; scutum overlain with olive-green pubescence, densely admixed with short setae; scutal macrosetae black; scutellum overlain with matte, black pubescence anteriorly, grey pubescence posteriorly; pleuron with sparse, grey pubescence anteriorly on postpronotum and proepisternum, also on meron, metanepisternum and posterior margin of katepisternum; coxae glossy dark-brown, overlain with grey pubescence, admixed with setae on anterolateral surfaces of mid and fore coxae; setae dark on fore coxa and posterolateral surface of hind coxa; setae pale on mid and hind coxae; legs glossy brown with sparse, pale setae, longer on fore femur; wing hyaline with brown or black banding, two bands across basal medial (*bm*) and discal (*d*) cells respectively, third band across the subcostal and radial fields, basal bands connected approximately midway; venation brown; haltere stem brown, knob white; scutal chaetotaxy (pairs): np, 3; sa, 1; pa, 1; dc, 3–4; sc, 1.

Abdomen. Glossy brown with scattered pale setae, setae on posterior segments a mixture of pale and dark setae, setae on terminalia pale; tergite 1 with grey pubescence laterally, brown pubescence medially on tergites 1–5; intersegmental membrane of segments 2–3 white; sternites 4–7 with covering of black, scale-like setae; terminalia dark.

Male genitalia. Epandrium quadrangular, length much shorter along midline than greatest width, posterolateral corners rounded (Fig. 1A); cercus rounded in shape; tergite 8 broad, slightly emarginate medially (Fig. 1B); sternite 8 ovate, anterior margin straight, posterior margin rounded with medial patch of elongate setae (Fig. 1E); gonocoxite (Figs 1C–D) slightly rounded in profile; gonocoxal process narrow, length equal to inner gonocoxal process, elongate setae on posterior surface; medial atrium present, relatively small; hypandrium large, fused laterally to gonocoxites, large patch of posteriorly projecting setae medially; ventral lobe broad, projecting dorsally, relatively short, velutum on apically posterior surface; gonostylus broad basally, curved medially along length, erect setae on medial surface; inner gonocoxal process spatulate, equal in length to gonostylus; gonocoxal apodeme approximately equal to length of gonocoxite; distiphallus curved ventrally (Figs 1F–G), ventral apodeme of parameral sheath relatively broad, much shorter than ejaculatory

apodeme; dorsal apodeme recurved dorsally, 'Y'-shaped, fused to ejaculatory apodeme laterally; lateral ejaculatory apodeme small and tapered; ejaculatory apodeme acuminate anteriorly.

Female: Body length: 7.0–9.0 mm.

Similar to male except: Frons slightly wider than ocellar tubercle, covered with greenish-grey pubescence dorsally; shorter setae on head, thorax and abdomen; scutum with short dark setae; abdominal sternites without black scale-like setae.

Female genitalia. Spermathecal sac present, spherical in shape; spermathecal sac duct thickened at common junction with spermathecal ducts; furca quadrangular in shape; spermathecae spherical.

Etymology

The specific epithet is derived from the Latin: *olivaceus*, green brown; referring to the distinctive olive-green coloured scutum.

Comments

Acatopygia olivacea **sp. nov.** is easily recognised from other species of *Acatopygia* based on the scutal colouration and male abdominal characters such as the presence of black, scale-like setae on the sternites and the lack of silver velutum on the tergites. This species is known from a disparate series of specimens from northern New South Wales and Queensland.

Acatopygia paradoxa (Kröber)

(Figure 2)

Spatulipalpa paradoxa Kröber, 1912b: 221.—Kröber 1913: 19, fig. 23 (listing).

Acatopygia paradoxa (Kröber)—Irwin & Lyneborg, 1989: 353 (catalogue, combination change); Winterton *et al.* 2001: 195, 210, figs 7a–b (listing).

Neotype male, AUSTRALIA: AUSTRALIAN CAPITAL TERRITORY: Picadilly Circus, 35.21 S, 148.47 E, 6.xii.1994, M.G. Jefferies (MEI 109613) (ANIC). Condition: very good, left hind leg missing.

Other material examined. AUSTRALIA: NEW SOUTH WALES: near Braidwood, Monga, 35.582 S, 149.918 E, 14.x.1954, S.J. Paramonov, 19 males, 2 females, (MEI 109489-507) (ANIC).

Diagnosis

Antenna and foreleg bright yellow; eye without transverse furrow; dark, enlarged setae on scape and pedicel; scutum overlain with dark-grey pubescence; male abdomen with dense, silver velutum; ventral lobe of male genitalia acuminate.

Redescription

Male: Body length: 7.0–8.0 mm.

Head. Frons flat, slightly bulbous above antennal base, narrower than ocellar tubercle at narrowest point; frons and face glossy brown; frons overlain with sparse, brown pubescence dorsally, admixed with sparsely distributed, elongate, dark setae; round, glabrous patch immediately above antenna; silver pubescence around base of antenna and on face; eye with facets larger in upper portion, transverse furrow absent; ocellar tubercle raised, black, overlain with grey pubescence admixed with dark setae; occiput concave, dark, overlain with light grey pubescence; single row of relatively long, black, postocular setae; gena overlain with silver-white pubescence along eye margin, admixed with white setae; palp bright yellow, labellum brown, covered with dark setae; antennal length approximately equal to length of head; antenna yellow, overlain with yellow pubescence, admixed with erect, elongate, dark setae on scape and pedicel; flagellum tapered; style pale.

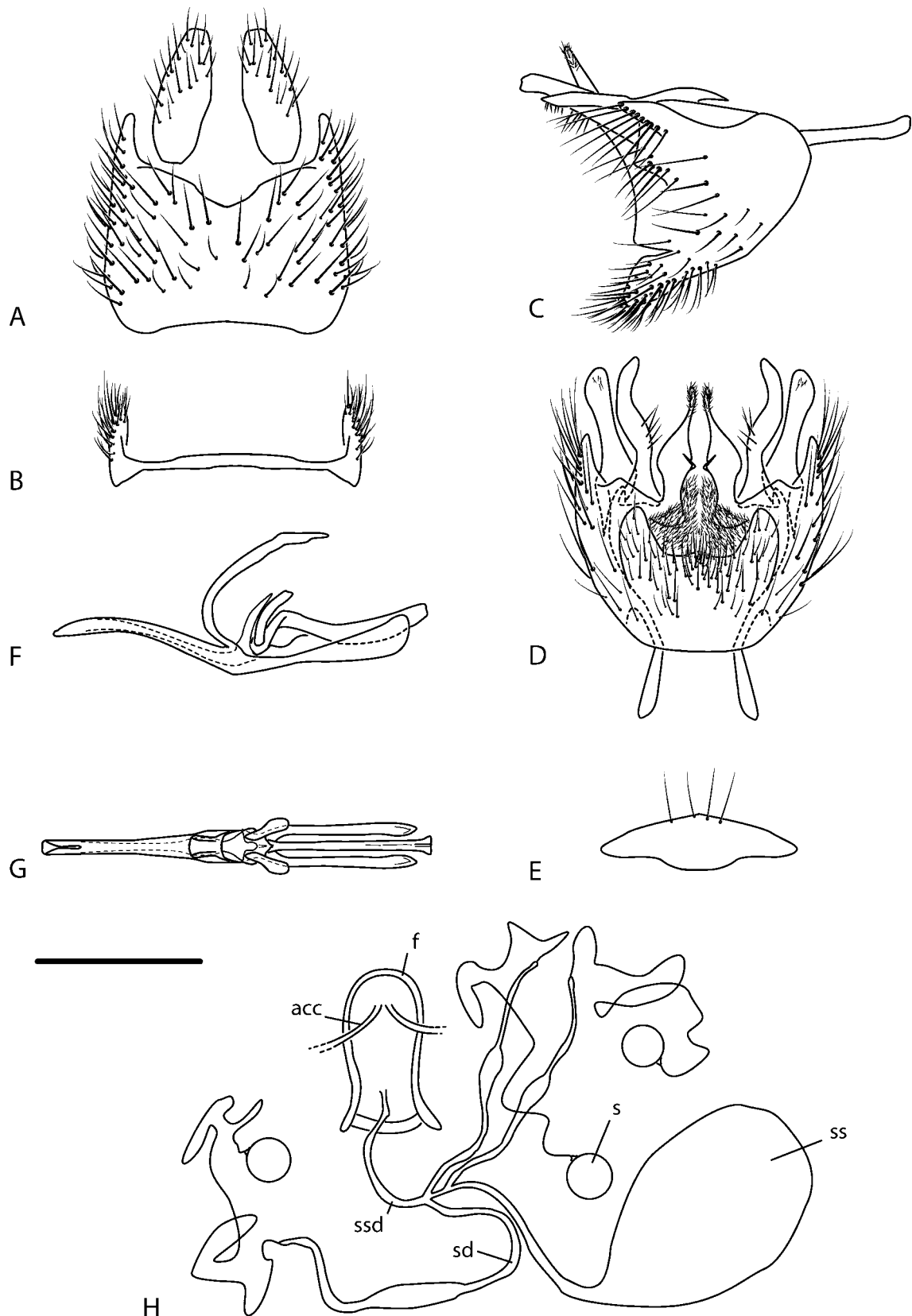


FIGURE 2. *Acatopygia paradoxa* (Kröber), male genitalia: A, epandrium, dorsal view; B, tergite 8, dorsal view; C, gonocoxites lateral view; D, same, ventral view; E, sternite 8, ventral view; F, aedeagus, lateral view; G, same, dorsal view, dorsal apodeme of parameral sheath removed. Female internal genitalia (after Winterton *et al.* 2001): H, dorsal view with external terminalia removed. Abbreviations: *acc*, accessory gland; *f*, furca; *s*, spermatheca; *sd*, spermathecal duct; *ss*, spermathecal sac; *ssd*, spermathecal sac duct. Scale line= 0.5 mm.

Thorax. Glossy black; scutum overlain with dark-grey pubescence, densely admixed with long, setae; scutal macrosetae black; scutellum overlain with matte, black pubescence anteriorly, glabrous posteriorly; pleuron with dense, silver pubescence except on anepisternum and anterior part of anepimeron; long pale setae on postpronotum, proepisternum anepisternum and katatergite; fore coxa yellow, mostly glabrous; mid and hind coxae black, overlain with dense silver pubescence; fore leg yellow, end of basitarsus and rest of tarsomeres brown; mid and hind legs brown-black with apical 1/5 of femora, tibia and basitarsi dark yellow; wing hyaline with brown or black banding, two bands across cells *bm* and *d* respectively, a third band across subcostal and radial fields less distinct, dark spot on bifurcation of veins R_4 and R_5 ; venation brown; haltere stem brown, knob white; scutal chaetotaxy (pairs): np, 3; sa, 1; pa, 1; dc, 2–3; sc, 1.

Abdomen. Glossy black with scattered pale setae, setae on anterior segments longer laterally; setae on terminalia both pale and dark; dense, silver, velutinous pubescence on all tergites; intersegmental membrane of segments 2–4 white; terminalia dark.

Male genitalia. Epandrium quadrangular, length much shorter along midline than greatest width, posterolateral corners rounded (Fig. 2A); cercus elongate; tergite 8 narrow, band-like, deeply emarginate (Fig. 2B); sternite 8 narrow (Fig. 2E); gonocoxite (Figs 2C–D) slightly rounded in profile; gonocoxal process narrow, 1/2 length of inner gonocoxal process, elongate setae on posterior surface; medial atrium present, membranous area covered with velutum; hypandrium large, fused laterally to gonocoxites, broadly emarginate medially with large, posteriorly projecting setae (concentrated medially); ventral lobe narrow, apically acuminate with velutum present at apex; gonostylus curved medially along length, erect setae on medial surface; inner gonocoxal process spatulate, equal in length to gonostylus; gonocoxal apodeme approximately equal to length of gonocoxite; distiphallus straight (Figs 2F–G), ventral apodeme of parameral sheath elongate, narrow, approximately equal length to ejaculatory apodeme; dorsal apodeme recurved dorsally, narrowly ‘Y’-shaped, poorly sclerotised; lateral ejaculatory apodeme small and tapered; ejaculatory apodeme narrow anteriorly.

Female: Body length: 7.0–9.0 mm.

Similar to male except: Frons slightly wider than ocellar tubercle, covered with brown pubescence dorsally; shorter setae on head, thorax and abdomen; abdominal tergites without dense velutum covering.

Female genitalia. Furca well sclerotised; spermathecal sac present, spherical in shape; spermathecae spherical (Fig. 2H).

Comments

The holotype of *A. paradoxa* was apparently destroyed in 1956 during the fire in the Hungarian National Museum of Natural History (Winterton *et al.* 2001) (pers. com., M. Foldvari, HNMNH) and no paratypes or other specimens are known from the type locality. Kröber (1913: fig. 23) presents a colour image of the head of *A. paradoxa*. A neotype is designated to clarify and stabilise the taxonomic status of *Spatulipalpa paradoxa* Kröber. The neotype specimen designated herein is a male from the Australian Capital Territory, a region relatively close to the original type locality. Female specimens from the series mentioned above match the original description by Kröber, but a male is designated here as most of the diagnostic characters for the species are found in the male and not the female. There is no doubt that the neotype designated here represents the male counterpart of the female described originally by Kröber (1912b). *Acatopygia paradoxa* is readily differentiated from other members of *Acatopygia* by the distinctive, bright-yellow antennae and foreleg colouration.

Acatopygia pulchella Kröber

(Figures 3–4)

Acatopygia pulchella Kröber, 1912a: 149. – Kröber 1913: 17, figs 15–16 (listing); Mann 1928: 43 (redescription); Irwin & Lyneborg, 1989: 353 (catalogue); Winterton *et al.* 2001: 195, 210, fig. 6 (listing).

Holotype male, AUSTRALIA: NEW SOUTH WALES: “Australien”, A.L. Schrader leg. ded., 25.ix.1896 (MEI 90753) (DEIC). Condition: poor; specimen damaged.

Other material examined. AUSTRALIA, NEW SOUTH WALES: female, Minnamurra Falls, [-34.632, 150.717], 18.xii.1968, mv light, C.E. Chadwick (MEI 025309) (NSWA). QUEENSLAND: 3 males, Brisbane, [-27.465, 153.017], 3.ix.1927, J. Mann (MEI 109628-30) (ANIC); female, Brisbane, [-27.465, 153.017], 20.viii.1927, J. Mann (MEI 109636) (ANIC); male, Bribie Island, [-27.05, 153.15], 4.ix.1980, M. G. Jefferies (MEI 109802) (MGJC/ANIC).

Diagnosis

Antenna and foreleg brown; eye with transverse furrow; scutum overlain with brown pubescence, distinct white-grey dorsocentral stripes; femora with dark ventral setae; abdomen overlain with silver velutum; epanthrium large, cerci elongate.

Redescription

Male: Body length: 6.0–7.5 mm.

Head. Frons flat, bulbous around antennal base (Figs 3A–B), narrower than ocellar tubercle at narrowest point; frons and face glossy black; frons overlain brown pubescence tending towards silver in lower portion, admixed with elongate, dark setae; bulbous area above antennal base glabrous; silver pubescence around base of antenna and on face, admixed with several elongate dark setae; eye with facets slightly larger in upper portion, transverse furrow present; ocellar tubercle raised, black, overlain with brown pubescence admixed with elongate, dark setae; occiput concave, overlain with light-grey pubescence, single row of relatively long, black, postocular setae dorsally; gena overlain with silver-white pubescence, admixed with white setae; mouthparts light orange-brown, covered with dark setae; antennal length approximately equal to length of head, antenna orange-brown, overlain with brown pubescence, admixed with erect, elongate, dark setae on scape and pedicel; flagellum turbinate, slightly shorter than combined length of scape and pedicel.

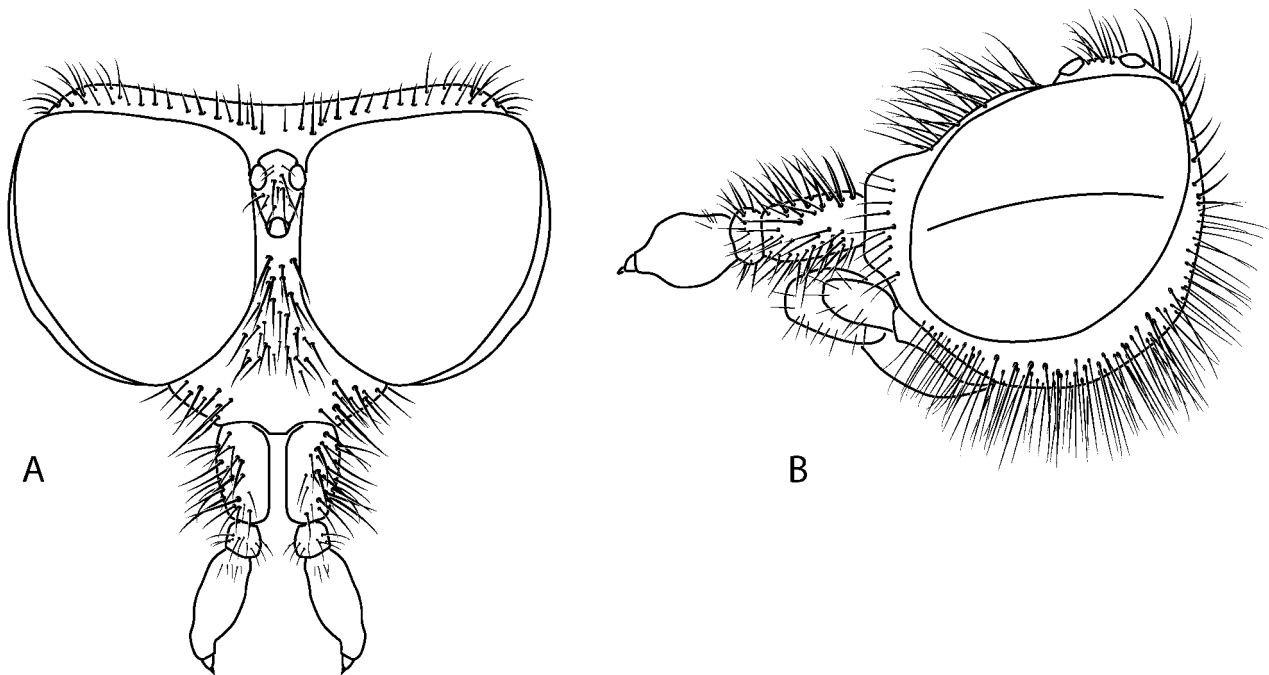


FIGURE 3. *Acatopygia pulchella* Kröber, male head: A, dorsal; B, same, lateral. Scale line= 0.5 mm.

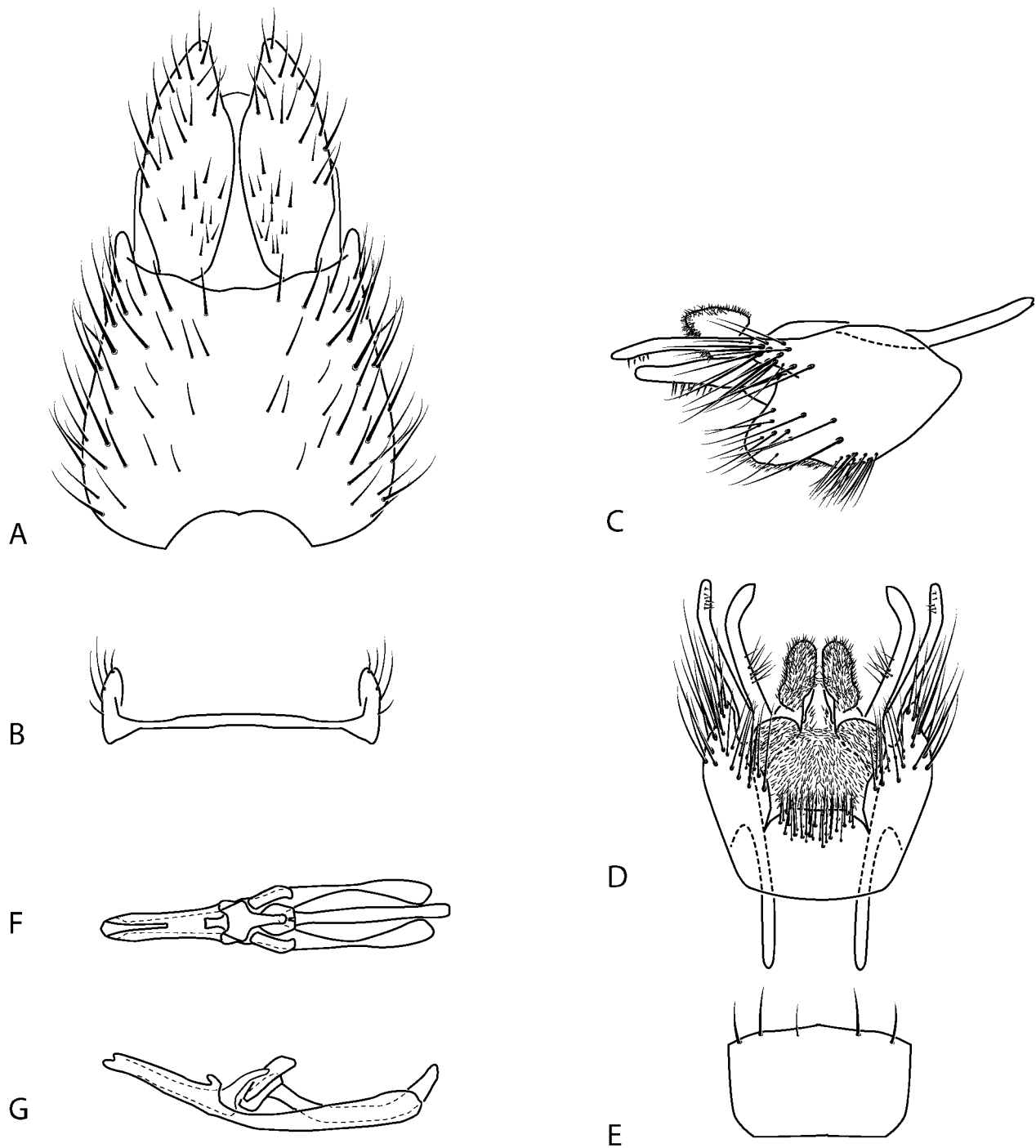


FIGURE 4. *Acatopygia pulchella* Kröber, male genitalia: A, epandrium, dorsal view; B, tergite 8, dorsal view; C, gonocoxites lateral view; D, same, ventral view; E, sternite 8, ventral view; F, aedeagus, lateral view; G, same, dorsal view. Scale line= 0.5 mm.

Thorax. Glossy black; scutum overlain with brown pubescence, anterolateral corner of scutum and dorso-central stripes of white-grey pubescence, admixed with long, erect setae; postalar callus glabrous; scutal macrosetae black; scutellum overlain with matte, black pubescence anteriorly, glabrous posteriorly; pleuron and coxae with dense, silver pubescence except on anepisternum, anepimeron and katatergite, admixed with long, pale setae on postpronotum, proepisternum, anepisternum, katatergite and coxae; legs dark brown, bases of

tarsomeres and anterior surfaces of mid and hind tibia dark yellow; single row of dark macrosetae on ventral surfaces of mid and hind femora and on anteroventral surface of fore femur; wing hyaline with brown or black banding, bands across cells *bm* and *d* respectively, third band across subcostal and radial fields; venation brown in infusate areas, dark yellow in hyaline areas; haltere crème-white colour; macrosetae difficult to discern from regular setation of scutum; scutal chaetotaxy (pairs): np, 3; sa, 1; pa, 1–2; dc, 2–4; sc, 1.

Abdomen. Glossy brown-black with scattered, erect, pale setae; setae longer laterally; setae on terminalia dark; dense, silver, velutinous pubescence tergite 1–5 and epandrium; intersegmental membrane of segments 2–4 white; terminalia dark.

Male genitalia. Epandrium large, quadrangular, length slightly shorter along midline than greatest width, posterolateral corners rounded (Fig. 4A), extending laterally and ventrally to partially conceal gonocoxites; cercus greatly elongate; tergite 8 narrow, band-like with round lateral lobes (Fig. 4B); sternite 8 broad with few setae along posterior margin (Fig. 4E); gonocoxite (Figs 4C–D) wedge-like in profile; gonocoxal process narrow, much shorter than inner gonocoxal process, elongate setae on posterior surface; medial atrium present with membranous area covered with velutum; hypandrium large, fused laterally to gonocoxites, large, posteriorly projecting setae along posterior margin; ventral lobe elongate, projecting dorsally, broadly club shape apically with velutum present at apex; gonostylus curved medially towards apex, erect setae on medial surface; inner gonocoxal process equal in length to gonostylus, curved medially towards apex, short setae on ventral surface of apex; gonocoxal apodeme approximately equal to length of gonocoxite; distiphallus straight (Figs 4F–G), ventral apodeme of parameral sheath elongate, narrow, approximately equal in length to ejaculatory apodeme; dorsal apodeme of parameral sheath reduced; lateral ejaculatory apodeme small and tapered; ejaculatory apodeme narrowed anteriorly, projecting dorsally at apex.

Female: Body length: 6.5–8.0 mm.

Similar to male except: Frons wider than ocellar tubercle at narrowest point, extensively covered with brown pubescence dorsally; shorter setae on head, thorax and abdomen; abdominal tergites without velutum covering, silver-grey pubescence extensively on tergite 1.

Female genitalia. Spermathecal sac present, spherical in shape; spermathecal sac duct thickened at common junction with spermathecal ducts; spermathecae spherical.

Comments

Acatopygia pulchella is the type species for the genus. It is readily differentiated from other species of *Acatopygia* based on furrowed eyes, row of macrosetae on the femora, brown legs and antennae, scutum colouration, and abdominal velutum covering and enlarged epandrium in the male. This species is known from central, eastern Australia and has been associated with coastal heath habitats. Mann (1929) noted that males of this species are found hovering in swarms in sandy habitats.

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