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## Genus *Anthomyia* Meigen (Diptera, Anthomyiidae) in New Guinea

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**Abstract.** The New Guinean fauna of Anthomyiidae was never considered before. It is represented by the genus *Anthomyia*. Previous data on the New Guinean *Anthomyia* are discussed. *A. acklandi* sp. nov. from highlands (above 3300 m) of New Guinea is described. The male of *A. fumipennis* Stein, 1919, previously known from a single female, is described. The widespread *A. illocata* is newly reported for Papua Province of Indonesia. The identification key for New Guinean *Anthomyia* is offered.

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**Keywords:** Diptera, Anthomyiidae, *Anthomyia*, New Guinea, Papua

## Род *Anthomyia* Meigen (Diptera, Anthomyiidae) фауны Новой Гвинеи

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**Аннотация.** Фауна Anthomyiidae Новой Гвинеи, которая представлена родом *Anthomyia*, никогда ранее не изучалась. Обсуждены литературные данные по *Anthomyia* Новой Гвинеи. С высокогорий острова (выше 3300 м над уровнем моря) описан новый вид *A. acklandi* sp. nov. Дано описание самца *A. fumipennis* Stein, 1919, ранее описанного по единственной самке. Широко распространенный вид *A. illocata* впервые приведен для индонезийской провинции Папуа. Предложен определительный ключ для новогвинейских *Anthomyia*.

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**Ключевые слова:** Diptera, Anthomyiidae, *Anthomyia*, Новая Гвинея

## Introduction

The only species of Anthomyiidae reported for New Guinea was *Anthomyia fumipennis* Stein, 1919, described from a single female from Irian Jaya (presently Papua Province of Indonesia), Hellwiggeb, 1700 m. (The exact type locality is difficult to establish. Hellwiggeb is the river with its mouth at 5.35°S 137.88°E. The sources of this river are located in the Maoke Mountains, the height of 1700 m is located approximately here: 4.2°S 138.2°E.) The holotype was not found in Museum für Naturkunde, Berlin (Pont, Ackland 2009).

This species was shortly discussed by Ackland (1987: 40): “The position of *Anthomyia fumipennis* Stein, described from New Guinea (not included in this paper) is problematical. It is a typically black and grey patterned fly and has hairs on the propleuron [= proepisternum here]. But the genitalia are more primitive in structure; the surstyli are simple and without stronger inner setae, the cercal plate is without specialised flattened apical setulae... sternite V is without a ventrally directed membranous lobe. Two further as yet undescribed species from New Guinea show even further divergence from typical *Anthomyia* species in structure of head and general appearance, but possess all the above characters of *fumipennis*...”

In my opinion, non-genitalic characters like the scutal pattern and setulose proepisternum are much better for generic diagnosis than the structure of the male genitalia which is applicable only to males. It is also worth noting that in Australian/Oceanian region (Pont 1996) only genus *Anthomyia* is widespread. Thus, I consider New Guinean species as belonging to *Anthomyia* unless molecular data prove otherwise. Ackland (1987) wrote further on following: “These [undescribed] species are probably closely related, forming a monophyletic group which perhaps has been isolated for some considerable time. These species will be dealt with in a later paper.” However, no description of any species of *Anthomyia* from New Guinea has been published by Ackland. I collected a large series of

*A. fumipennis* and an undescribed *Anthomyia* from New Guinean highlands. With this advantage, I would like to clarify the situation somewhat.

## Results

### *Anthomyia acklandi* sp. nov.

<https://zoobank.org/NomenclaturalActs/E20F2078-CDE5-475C-8F6D-472602F3E828>

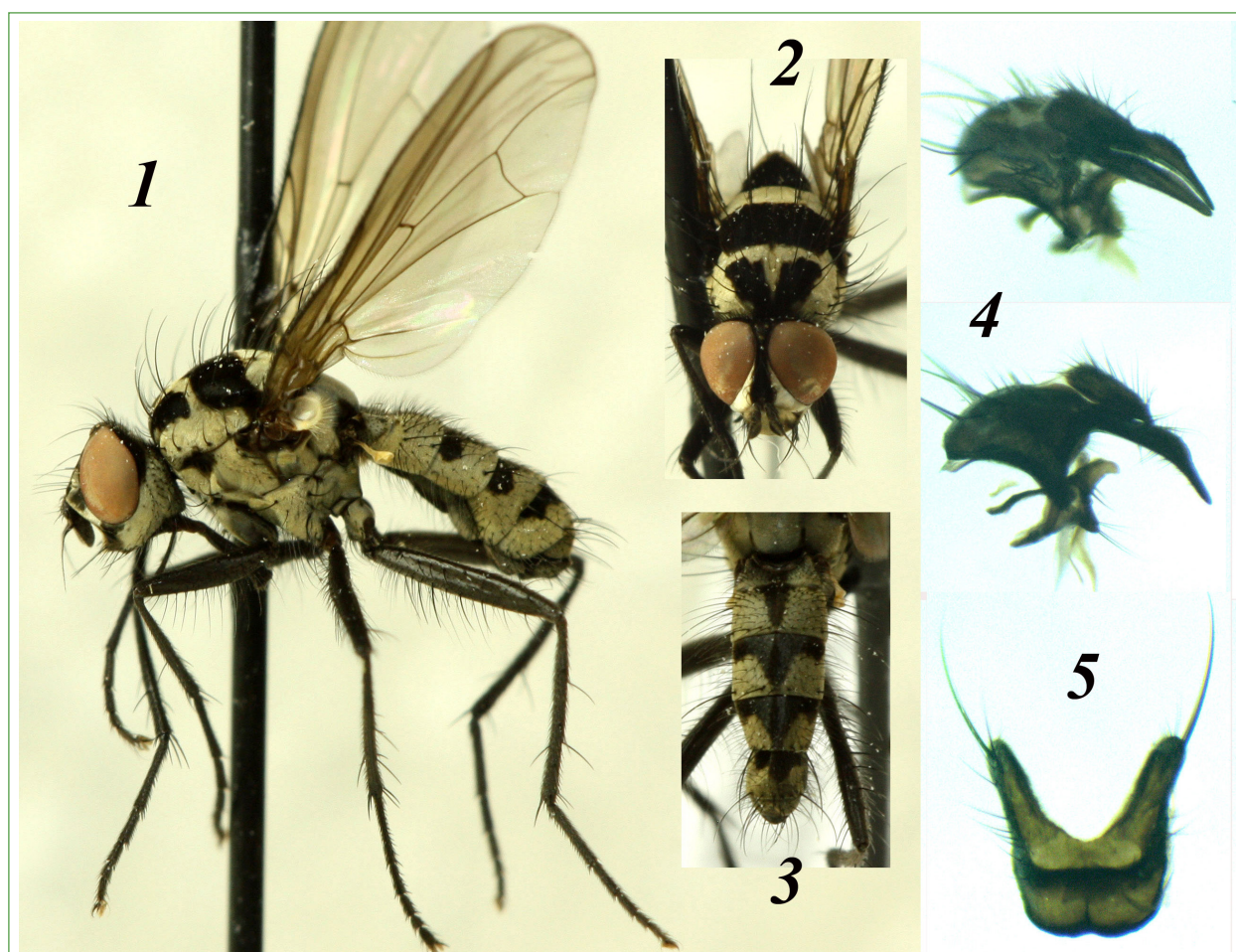
Figs. 1–5

**Holotype** ♂: INDONESIA, Papua prov., Lake Habbema, 3350 m, 4.14°S, 138.71°E, 19–26.12.2014, N. Vikhrev.

**Paratypes:** the same locality, 19–26.12.2014, N. Vikhrev. 13♂, 6♀; 10–12.12.2017, N. Vikhrev, 3♂ 3♀. The entire type series is deposited in Zoological Museum of Moscow University (= ZMUM).

**Description.** *Head.* Eyes bare, distance between eye margins at narrowest part slightly narrower than width of postpedicel (Fig. 2). Fronto-orbital plates at posterior 2/3 black and narrow, at anterior 1/3 grey and widened, with 3 pairs of inclinate setae on anterior 1/3. Frons narrow, yellowish-grey, with rather strong crossed interfrontals. Parafacials grey, with dark spots at upper and lower thirds. Mouthedge slightly protruding. Cheek about 1.5x as wide as width of postpedicel. Postpedicel 2.25x as long as wide. Longest arisal hairs slightly longer than basal diameter of arista. Proboscis elongated (Fig. 1), about 2/3 as long as fore tibia.

*Thorax* densely grey dusted over dark ground-colour; with contrasting black pattern on dorsal surface. Presutural area of scutum with a pair of rectangular black spots merged in front and diverging posteriorly (Fig. 2); postsutural area with black transverse band from suture to almost level of 3<sup>rd</sup> *post dc* (Figs. 1, 2). Scutellum black with only extreme apex pale, with setulae on ventral side. Black colour is not extended on pleura (darkening of anepisternum on Fig. 1 is a result of reflection). 2 + 3 *dc*; 3 pairs of presutural *ac* in rows separated by more than distance from each to adjacent dorsocentral row, without additional setulae in between. Prealar seta as strong as posterior notopleural; katepisternals 2 + 2,



**Figs. 1–5.** *Anthomyia acklandi* sp. nov.: 1 — general view; 2 — head and scutum fronto-dorsally; 3 — abdomen (1–3 — the holotype); 4 — surstyli and cerci; 5 — sternite 5

**Рис. 1–5.** *Anthomyia acklandi* sp. nov.: 1 — общий вид; 2 — голова и среднеспинка, вид спереди; 3 — брюшко (1–3 — голотип); 4 — сурстилы и церки; 5 — стернит 5

lower posterior weak; proepisternum with 5–6 fine setulae. Wing with costal basal marginal spinules strong; anterior margin of wing darkened.

*Legs* dark. *t1* with 1 *pv* and 1 *ad*; *t2* with 1 *ad*, 2 *pd* and 1 *pv*; *t3* with 1 *av*, 3 *ad*, 2 *pd*, 4–5 fine short *pv* at middle.

*Abdomen* grey dusted, tergites 1 + 2 to 5 with tridental black marks, less distinct on tergite 1 + 2 (Fig. 3). Surstyli elongated, widened in middle, with pointed apex; without stronger inner setae, cercal plate without specialised flattened apical setulae (Fig. 4); sternite 5 with a pair of strong apical setae (Fig. 5).

*Female* similar to male except for wide frons (40% of head width) and shape of abdomen, which is pointed at the tip.

**Diagnosis.** *A. acklandi* sp. nov. has thorax with typical “*Anthomyia*-pattern” and setu-

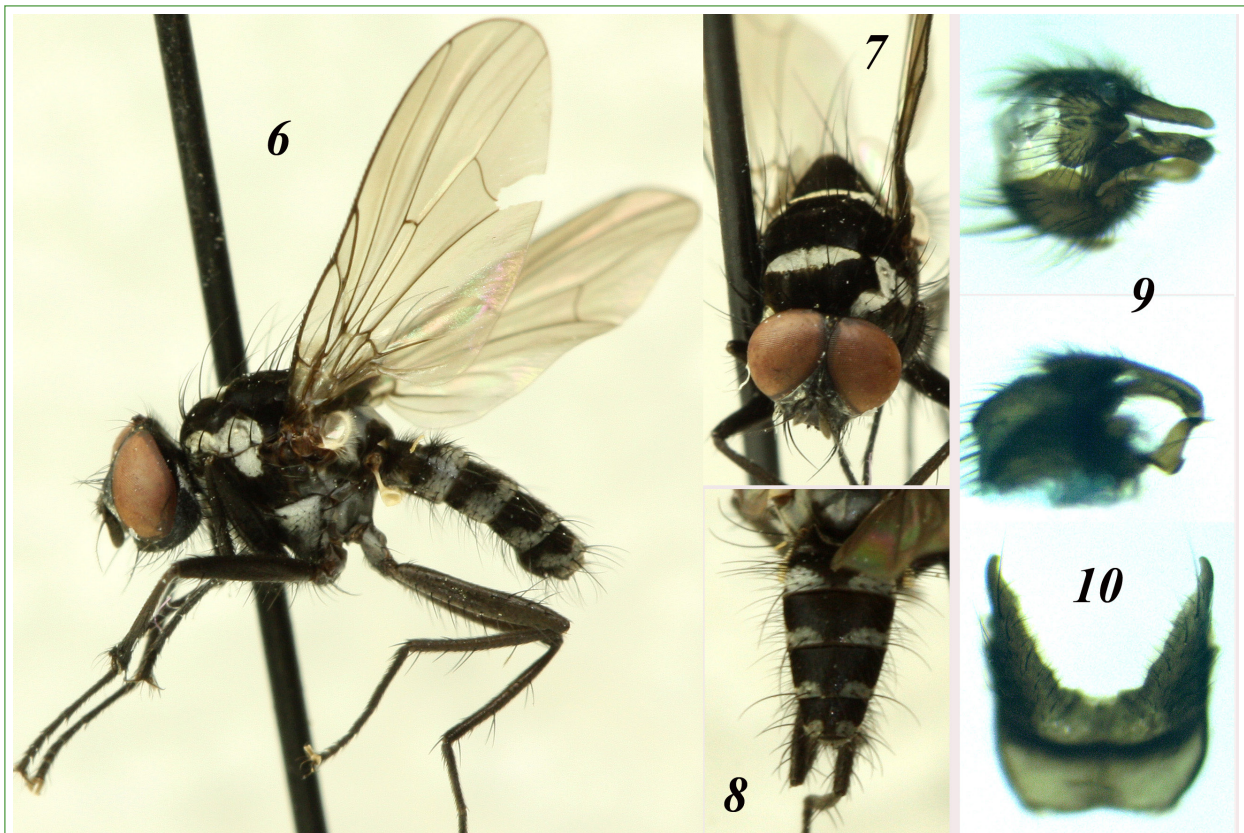
lose proepisternum. It clearly differs from all Asian *Anthomyia* by presutural area of scutum with a pair of rectangular black spots merged in front and diverging posteriorly. Male has widened frons and simplified structure of genitalia.

**Etymology.** Named in honour of Michael Ackland, foremost expert on the family Anthomyiidae, who died in 2021.

*Anthomyia fumipennis* Stein, 1919

*Anthomyia fumipennis* Stein, 1919: 210–211 Figs. 6–10

**Material examined:** INDONESIA, Papua Prov., Wamena env., Baliem Resort, 2000 m, 4.06°S, 139.03°E, 16–25.12.2014, N. Vikhrev, 5♂, 2♀; 11–16.12.2017, N. Vikhrev, 10♂, 1♀; 14 km W of Wamena, 2800 m, 4.137°S, 138.826°E, 7.12.2017, N. Vikhrev, 1♂, 3♀ (all ZMUM).



**Figs 6–10.** *Anthomyia fumipennis*, male: 6 — general view; 7 — head and scutum dorsally; 8 — abdomen; 9 — surstyli and cerci; 10 — sternite 5

**Рис. 6–10.** *Anthomyia fumipennis*, самец: 6 — общий вид; 7 — голова и среднеспинка, вид сверху; 8 — брюшко; 9 — сурстили и церки; 10 — стернит 5

**Description of male.** *Head.* Eyes bare, eye margins separated on diameter of ocellus (Fig. 7). Fronto-orbital plates linear, black and narrow at posterior half, at anterior half widened and with 5 pairs of inclinate setae and minute crossed interfrontal setulae. Para-facials grey, with dark spots at upper and lower thirds. Mouthedge not protruding. Cheek about 1.5x as wide as width of postpedicel. Postpedicel 3x as long as wide. Longest arisal hairs half as long as width of postpedicel. Proboscis not elongated.

*Thorax* densely grey dusted over dark ground-colour; with contrasting black pattern on dorsal surface. Presutural area of scutum with black transverse band from neck to level of 2<sup>nd</sup> *prst dc* (Fig. 7); postsutural area with black transverse band from suture to level of 3<sup>rd</sup> *post dc*; pre- and postsutural bands narrow merged at level of intraalar setae (Fig. 7). Black colour also extended on pleura: most anepisternum and anterior part of katepister-

num (Fig. 6). Scutellum black, with setulae on ventral side. Prealar seta as strong as posterior notopleural; katepisternals 2 + 2, proepisternum with 9–12 setulae, lower posterior weak. 2 + 3 *dc*; 1 strong pair of presutural *ac* without additional setulae in between. Wing with marginal spinules short; whole wing surface darkened.

*Legs* dark. *t1* with 1 *pv*; *t2* with 1 *ad*; 2 *pd* and 1 *pv*; *t3* with 1 *av*, 3 *ad*, 2 *pd* and 4–5 short *pv* at middle.

*Abdomen* grey dusted, tergites 1+2 to 5 with tridental black marks, more extended than in *A. acklandi* sp. nov. (Fig. 8). Surstyli simple, short, with blunt apex (Fig. 9), without stronger inner setae; cercal plate without specialised flattened apical setulae. Sternite 5 without strong setae (Fig. 10).

*Female* similar to male except for wide frons (40% of head width) and shape of abdomen, which is pointed at the tip. Dark area on pleura less extensive.

**Distribution.** Central regions of New Guinea at altitudes 1700–2800 m.

*Anthomyia illocata* Walker, 1857

**Material examined:** INDONESIA, Papua Prov., Sentani, sea level, 2.58°S, 140.54°E, 3–7.12.2014, N. Vikhrev, 1♂, 1♀ (ZMUM).

**Distribution.** Widespread in Southern Asia and Oceania. Previously reported to the west and east of New Guinea at Buru Island and New Caledonia (Ackland 1987: 41).

#### Identification key for *Anthomyia* of New Guinea, ♂♀

1. Presutural part of scutum without black pattern, at most with small and indistinct dark spots; postsutural area with black transverse band from suture to level of 2<sup>nd</sup> *post dc*; scutellum grey at apical half (see: Ackland 1987: fig. 38 or Suwa 1987: figs 188, 189, 192). Wing hyaline, without brown tint ..... *illocata* Walker  
— Presutural part of scutum with distinct and extensive black pattern. Postsutural area with black transverse band from suture to level of 3<sup>rd</sup> *post dc*. Scutellum black, at most grey at very apex. Wing with distinct brown tint ..... 2
2. Presutural area of scutum with a pair of rectangular black spots merged in its fore

- part and diverging posteriorly (Fig. 2). Pleura grey. Total arisal hairing less than half as long as width of postpedicel. Abdominal tergites dark only basally (Figs. 1, 3). Known from 3350 m a. s. l. ♂: Eye margins separated for about width of postpedicel (Fig. 2). Surstyli elongated, widened in middle, with pointed apex (Fig. 4). Sternite 5 with a pair of strong apical setae (Fig. 5) ..... *acklandi* sp. nov.
- Presutural area of scutum with black transverse band from neck to level of 2<sup>nd</sup> *prst dc* (Fig. 7). Black colour also extends on pleura: most anepisternum and anterior part of katepisternum (Fig. 6). Total arisal hairing about as long as width of postpedicel. Abdominal tergites mostly dark (Fig. 8). Recorded from 1700 to 2800 m ♂: Eye margins separated for diameter of ocellus (Fig. 7). Surstyli short, with blunt apex (Fig. 9); sternite 5 without strong setae (Fig. 10) ..... *fumipennis* Stein

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