

[Open Peer Review on Qeios](#)

“Terrible hairy fly” (Insecta: Diptera: Mormotomyiidae).

Carlos Henrique Marchiori¹

¹ Instituto Federal Goiano

Potential competing interests: No potential competing interests to declare.

Co-authors: Marco Vinícios de Oliveira Santana² and Klebert de Paula Malheiros³.

²⁻³Instituto Marco Santana, Goiânia, Goiás, Brazil.

The family Mormotomyiidae was originally thought to belong to the superfamily Sphaeroceroidea but was later placed in the superfamily Hippoboscoidea, later work suggested that it belonged to the Carnoidea, but work in 2011 suggested that its true affiliation is to the Ephydroidea. It contains only one known species, *Mormotomyia hirsuta* Austen, 1936, commonly known as the terrible hairy fly or terrible hairy fly, which is found in Kenya. The specimens were collected from a mountain site on Ukasi Hill, in a crevice where a bat roost is located; This may be the most restricted geographic distribution for any fly family and some fly experts think it will ultimately prove to be the only fly family entirely restricted to Africa. (Figures 1-3) [1-5].

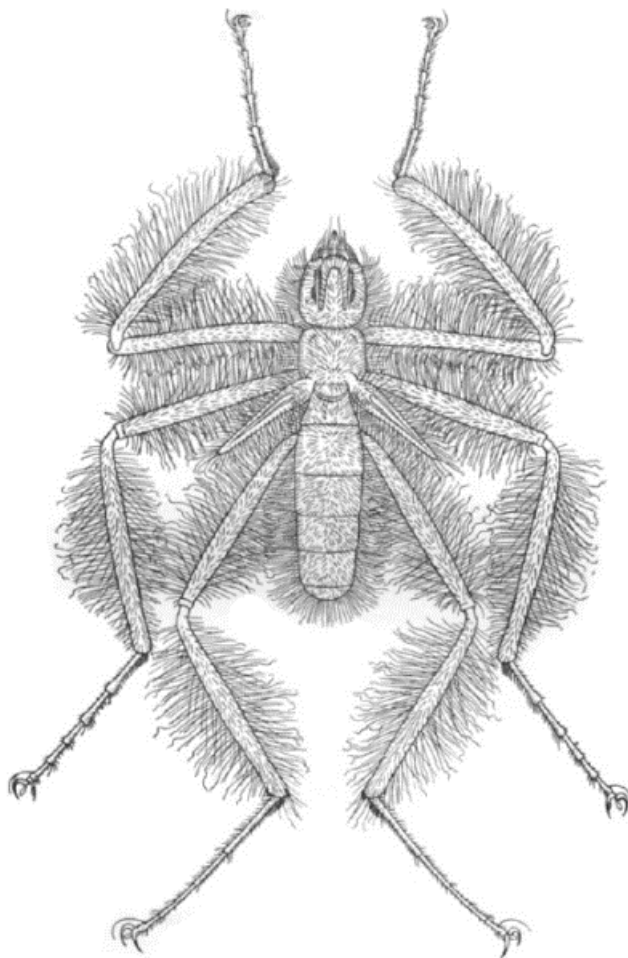


Figure 1. A drawing of a male specimen. Source: <https://en.wikipedia.org/wiki/Mormotomyiidae>.



Figure 2. Rare: The 'terrible hairy fly' is an appropriate nick-name. Source: <https://www.dailymail.co.uk/sciencetech/article-1336799/Mormotomyia-Hirsuta-Africas-terrible-hairy-fly-Kenya-62-years.html>,

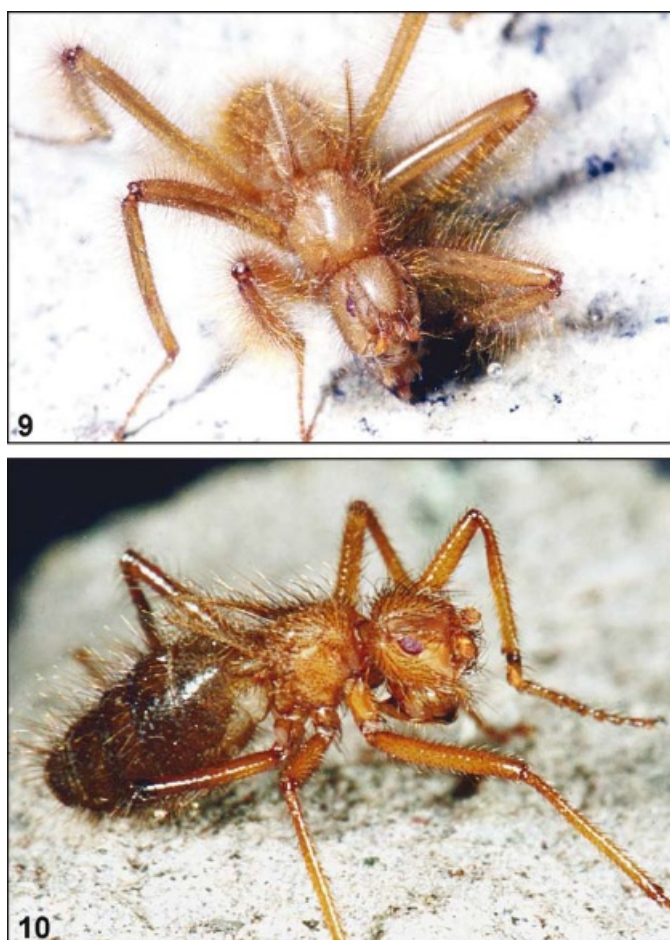


Figure 3. Fly feeds on bat feces, and can hitch a ride with a 'partner' too. Sources: Photo: Robert Copeland released via AFP 4-12-2010 and <https://g1.globo.com/mundo/noticia/2010/12/terrivel-mosca-peluda-e-encontrada-no-kenia.html>

Larvas de Mormotomyiidae foram coletadas de guano de morcego. Acredita-se que as moscas adultas se alimentem das secreções corporais dos morcegos. A mosca mede cerca de 1cm de comprimento, tem patas peludas e, devido às asas não funcionais e aos olhos minúsculos, parece mais uma aranha do que uma mosca. Os espécimes foram coletados apenas três vezes, em 1933, 1948 e 2010 (Figura 4) [6-9].

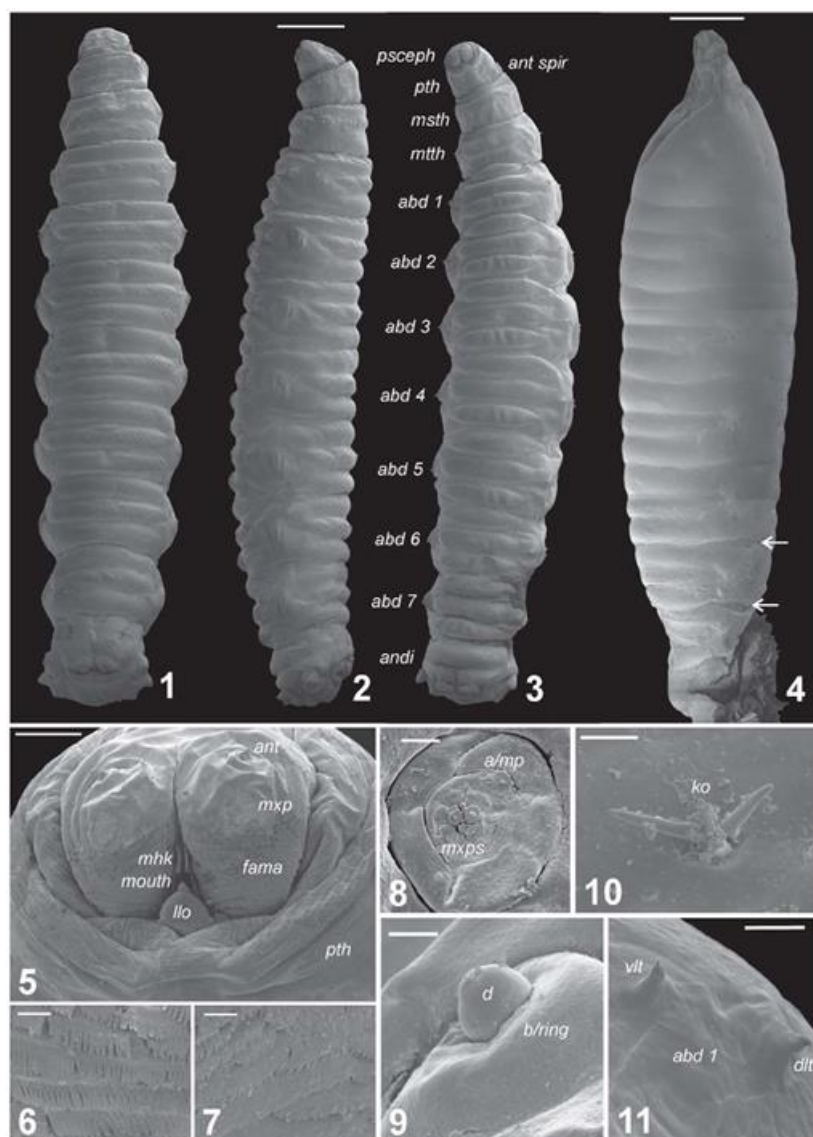


Figure 4. Scanning electron micrographs of the third-instar larva of *Mormotomyia hirsuta* Austen, 1936: (12) dorsolateral tubule on the first abdominal segment, from above; (13) detail of mesothorax indicating positions of dorsal pits; (14) dorsomedial pit on mesothorax; (15) dorsolateral pit on mesothorax; (16) dorsomedial pit on the third abdominal segment; (17) dorso-sublateral pit on the third abdominal segment; (18) creeping welt at junction on the mesothorax, ventral; (19) detail of same; (20) creeping welt on a second abdominal segment, ventral; (21) detail of same. Source: African Invertebrates, 55(2):419-445 (2014). <https://doi.org/10.5733/afin.055.0202>.

References

- [1] Junqueira AC, et al. Large-scale mitogenomics enables insights into Schizophora (Diptera) radiation and population diversity. *Scientific Reports*. 2016; 25: 6: 217-262.
- [2] Jacobs CG, Rezende GL, Lamers GE, van der Zee M . The extraembryonic serosa protects the insect egg against desiccation. *Proceedings. Biological Sciences*. 2008; 280(1764): 2013-1082.

- [3] Cumming JM, Wood DM. Adult morphology and terminology. In: Kirk-Spriggs AH, Sinclair BJ, eds. Manual of Afrotropical Diptera. 1st ed. Pretoria: Introductory chapters and keys to Diptera families. SANBI Graphics & Editing; 2017. p. 89–133.
- [4] Bay W. Insects out Mormotomyiidae [Internet]. Washington: The National Museum of Natural History; @ 2023 [cited 2024 Mar 31]. Available from <https://eol.org/pt-BR/pages/429>.
- [5] Winkler IS, Rung A, Scheffer SJ. Hennig's Orphans revisited: testing morphological hypotheses in the "Opomyzoidea" (Diptera: Schizophora). Molecular Phylogenetics and Evolution. 2010; 54: 746–762.
- [6] *Mormotomyia hirsuta*. NCBI taxonomy [Internet]. Bethesda: National Center for Biotechnology Information; @ 2023 [cited 2023 Oct 03]. Available from <https://en.wikipedia.org/wiki/Mormotomyiidae>.
- [7] Meyer Marc De. The obscure cave-fly from Kenya. EANHHS Bulletin. 1994; 24(2): 21–22.
- [8] Kirk-Spriggs AH, Kotrba, M, Copeland RS. Further details of the morphology of the enigmatic African fly *Mormotomyia hirsuta* Austen (Diptera: Mormotomyiidae). African Invertebrates. 2011; 52(1): 145-165.
- [9] Copeland RS, Kirk-Spriggs AH, Muteti S, Booth W, Wiegmann BM. Rediscovery of the "terrible hairy fly", *Mormotomyia hirsuta* Austen (Diptera: Mormotomyiidae), in eastern Kenya, with notes on biology, natural history, and genetic variation of the Ukasi Hill population. African Invertebrates. 2011; 52(2): 363-390.