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## ***Phthiria sharafi* sp. nov., a new record of the subfamily Phthiriinae (Bombyliidae, Diptera) from Saudi Arabia**

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### **Abstract**

This new species (*Phthiria sharafi* sp. nov.) represents the first record of the subfamily Phthiriinae (Bombyliidae, Diptera) from Saudi Arabia. The species was collected from Garf Raydah Protected Area, Abha, Asir Province, south-western part of Saudi Arabia, using a Malaise trap erected in a site rich in olive, cactus and Juniper trees. The type locality has an Afrotropical influence, with the Afrotropical elements predominant, and a closer affiliation to the Afrotropical region than to the Palearctic region or the Eremic zone.

**Key words:** Phthirini, new species, Arabian Peninsula, Asir, Abha, Garf Raydah Protected Area, Afrotropical

### **Introduction**

Members of the subfamily Phthiriinae (Family: Bombyliidae) are readily separated from those of closely related bombyliid subfamilies by the first flagellomere, which in Phthiriinae has a subapical sulcus bearing a style and dorsal and/or ventral processes; also having four posterior cells (vein M<sub>2</sub> present) (Greathead & Evenhuis, 2001b). The nominotypical genus, *Phthiria* Meigen, is recorded in Africa and Eurasia, but in the Americas there are six endemic genera, and another three genera are endemic to Australia (Evenhuis, 1990). So far, the number of described *Phthiria* spp. is about 70 spp. worldwide (Greathead & Evenhuis, 2001a; Greathead, 2004; Evenhuis & Greathead, 2014) and the majority of known Afrotropical and Palearctic species have been recorded in North Africa or southern Africa (Greathead & Evenhuis, 2001b). Greathead (1988) recorded a male specimen of genus *Phthiria* from Oman, identifying it with uncertainty as *P. unicolor* Bezzi, 1925.

The specimens of the present study were collected from Garf Raydah Protected Area, Abha, Asir Province, south-western part of Saudi Arabia, using a Malaise trap erected in a site rich in olive, cactus and juniper trees. This locality has an Afrotropical influence, with the Afrotropical elements predominant, and a closer affiliation to the Afrotropical Region than to the Palearctic region or the Eremic zone (El-Hawagry *et al.*, 2013). The collected specimens didn't match any Palearctic or Afrotropical species keyed or described in Meigen (1804, 1820), Loew (1846, 1873), Czerny & Strobl (1909), Becker & Stein (1913), Becker (1908, 1915), Bezzi (1921, 1924, 1925), Austen (1937), Engel (1937), Hesse (1938, 1975), Séguy (1941), Efflatoun (1945), Zaitzev (1972), Báez (1985), Greathead Evenhuis (2001b), or Greathead (2004).

The collected specimens are described herein as a new species *Phthiria sharafi* sp. nov., and this finding represents the first record of the subfamily Phthiriinae (Bombyliidae, Diptera) from Saudi Arabia.

### **Material and methods**

Material for the present study was collected from Garf Raydah Protected Area, Abha, Asir Province, south-western part of Saudi Arabia, using a Malaise trap erected in a site rich in olive, cactus and juniper trees (Fig. 1).

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## References

- Austen, E.A. (1937) *The Bombyliidae of Palestine*. British Museum (Natural History), London, ix + 188 pp.
- Báez, M. (1985) El genero *Phthiria* en las Islas Canarias, con la descripción de dos nuevas especies (Diptera, Bombyliidae). *Annales Facultad Ciencias*, 10, 61–70.
- Becker, T. (1908) Dipteren der Kanarischen Inseln und der Insel Madeira. *Mitteilungen aus dem Zoologischen Museum in Berlin*, 4, 1–180.  
<http://dx.doi.org/10.5962/bhl.title.9273>
- Becker, T. (1915) Dipteren aus Tunis in der Sammlung des Ungarischen National-Museums. *Annales Historico- Naturales Musei Nationalis Hungarici*, 14, 17–67.
- Becker, T. & Stein, P. (1913) Persische Dipteren von den Expeditionen des Herrn N. Zarudny 1898 und 1901. *Ezhagodnik Zoologicheskogo Muzeia*, 17, 503–654.
- Bezzi, M. (1921) On the bombyliid fauna of South Africa (Diptera) as represented in the South African Museum. *Annals of the South African Museum*, 18, 1–180.
- Bezzi, M. (1924) Missione del Dr. E. Festa in Cirenaica. XI. Ditteri di Cirenaica. *Bollettino dei Musei di Zoologia e di Anatomia Comparata Torino*, 39 (18), 1–26.
- Bezzi, M. (1925) Quelques notes sur les bombyliides (Dipt.) d'Egypte, avec description d'espèces nouvelles. *Bulletin de la Sociét Royale Entomologique d'gypte*, 8, 159–242.
- Czerny, L. & Strobl, G. (1909) Spanische Dipteren. III. Beitrag. *Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien*, 59, 121–301.
- Efflatoun, H.C. (1945) A monograph of Egyptian Diptera. Part VI. Family Bombyliidae. Section 1: Subfamily Bombyliidae Homeophthalmae. *Bulletin de la Sociét Fouad I<sup>er</sup> d'Entomologie*, 29, 1–483.
- El-Hawagry, M.S., Khalil, M.W., Sharaf, M.R., Fadl, H.H. & Aldawood, A.S. (2013) A preliminary study on the insect fauna of Al-Baha Province, Saudi Arabia, with descriptions of two new species. *ZooKeys*, 274, 1–88.  
<http://dx.doi.org/10.3897/zookeys.274.4529>
- Engel, E.O. (1937) 25. Bombyliidae. In: Lindner, E. (Ed.), *Die Fliegen der Palaearktischen Region*. E. Schweizerbart, Stuttgart, 4 (3), pp. 561–619.
- Evenhuis, N.L. (1990) Systematics and evolution of the genera of the subfamilies Usiinae and Phthiriinae of the world (Diptera: Bombyliidae). *Entomonograph*, 11, 1–72.
- Evenhuis, N.L. & Greathead, D.J. (2014) World catalog of bee flies (Diptera: Bombyliidae) web site. Available from: <http://hbs.bishopmuseum.org/bombcat/> (accessed 1 October 2014)
- Greathead, D.J. (1988) Diptera, Fam. Bombyliidae of Saudi Arabia (part 2). *Fauna of Saudi Arabia*, 9, 90–113.
- Greathead, D.J. (2004) Bombylioidea (Diptera) from the Socotra Archipelago: a new species of *Phthiria* Meigen, 1803 and a checklist of species. *Fauna of Arabia*, 20, 497–504.
- Greathead, D.J. & Evenhuis, N.L. (2001a) Bombylioidea (Diptera: Bombyliidae; Mythicomyiidae) from the island of Sokotra. *Zootaxa*, 14, 1–11.
- Greathead, D.J. & Evenhuis, N.L. (2001b) Annotated keys to the genera of African Bombylioidea (Diptera: Bombyliidae; Mythicomyiidae). *African Invertebrates*, 42, 105–224.
- Hesse, A.J. (1938) A revision of the Bombyliidae (Diptera) of southern Africa. [I.] *Annals of the South African Museum*, 34, 1–1053.
- Hesse, A.J. (1975) Additions to the South African species of Phthiriinae and Usiinae (Diptera: Bombyliidae) with keys to all the known species. *Annals of the South African Museum*, 66, 257–308.
- Loew, H. (1846) Fragmente der Kenntniss der europäischen Arten einiger Dipteren-Gattungen. *Linnaea Entomologica*, 1, 319–530.
- Loew, H. (1873) *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insecten*. Von Johann Wilhelm Meigen. Zehnter Theil oder vierter Supplementband. Beschreibungen europäischer Dipteren. Dritter Band. H.W. Schmidt, Halle, viii + 320 pp.  
<http://dx.doi.org/10.5962/bhl.title.13731>
- Meigen, J.W. (1804) *Klassifikation und Beschreibung der europäischen zweiflügeligen Insekten (Diptera Linn.)*. Erster Band. Abt. I. Karl Reichard, Braunschweig, xxvii + 152 pp.
- Meigen, J.W. (1820) *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten*. Zweiter Theil. F.W. Forstmann, Aachen, x + 363 pp.  
<http://dx.doi.org/10.5962/bhl.title.13731>
- Séguy, E. (1941) Diptères recueillis par M.L. Berland dans le Sud-Marocain. *Annales de la Sociét Entomologique de France*, 110, 1–23.
- Zaitzev, V.F. (1972) On the fauna of bee flies (Diptera, Bombyliidae) of Mongolia, I. *Insects of Mongolia*, 1, 845–80.