

New records of Sciaroidea (Diptera: Mycetophilidae, Keroplatidae) in the Hawaiian Islands¹

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Three new records of sciaroid flies in the families Mycetophilidae and Keroplatidae are recorded from the Hawaiian Islands. Most immatures of Mycetophilidae are fungus breeders while most of the immatures of Keroplatidae are predaceous, with some being fungus breeders. The biology of two of the three (*Neoempheria carinata* Sueyoshi, *Sciophila* sp.) are known to be fungus breeders, the former is potentially damaging to mushroom cultivation in Japan (and thus also possibly in Hawai'i), the latter is unknown as to its pestiferous status. The biology of the keroplatid (*Apyrtula sastrei* Matile) is unknown as only adults have been collected.

Abbreviations used for collections: BPBM (Bernice Pauahi Bishop Museum, Honolulu, Hawai'i, USA); CNCI (Canadian National Collection of Insects, Ottawa, Ontario, Canada); HDOA (Hawaii State Department of Agriculture, Honolulu, Hawai'i, USA); USNM (National Museum of Natural History, Washington, DC, USA).

Mycetophilidae

Neoempheria carinata Sueyoshi

New National and State Record

(Fig. 1)

This species was only recently described from mushroom hothouses in Japan (natural provenance unknown) by Sueyoshi (2014). It is easily distinguished from other mycetophilids by the contrasting back and yellow striped pattern of the scutum (Fig. 1B). It was originally found as immatures in webs made by the larvae in polypore fungi in a eucalyptus woodchip pile in rural Honoka'a on the island of Hawai'i, and some specimens were collected and reared to adult. Knowing of it being a potential pest of cultivated mushrooms in Japan (Sueyoshi *et al.* 2015), an illustrated information sheet was made by Hawaii State Department of Agriculture staff for residents and farmers in the Hamakua area of the Big Island to be on the lookout for the species. No other specimens have yet been collected beyond the original collecting site near Honoka'a.

This marks the first state record of this species in Hawai'i and the first record of it in the United States.

Material examined. HAWAIIAN ISLANDS: **Hawai'i**: 2♂, 7 larvae, 2 pupal exuviae, Ahualoa, nr. Honoka'a, 1 Jul 2019, Mallion, N. Evenhuis; 4♀, same data, 1 Oct 2019, Mallion, S. Chun (BPBM, HDOA, USNM).

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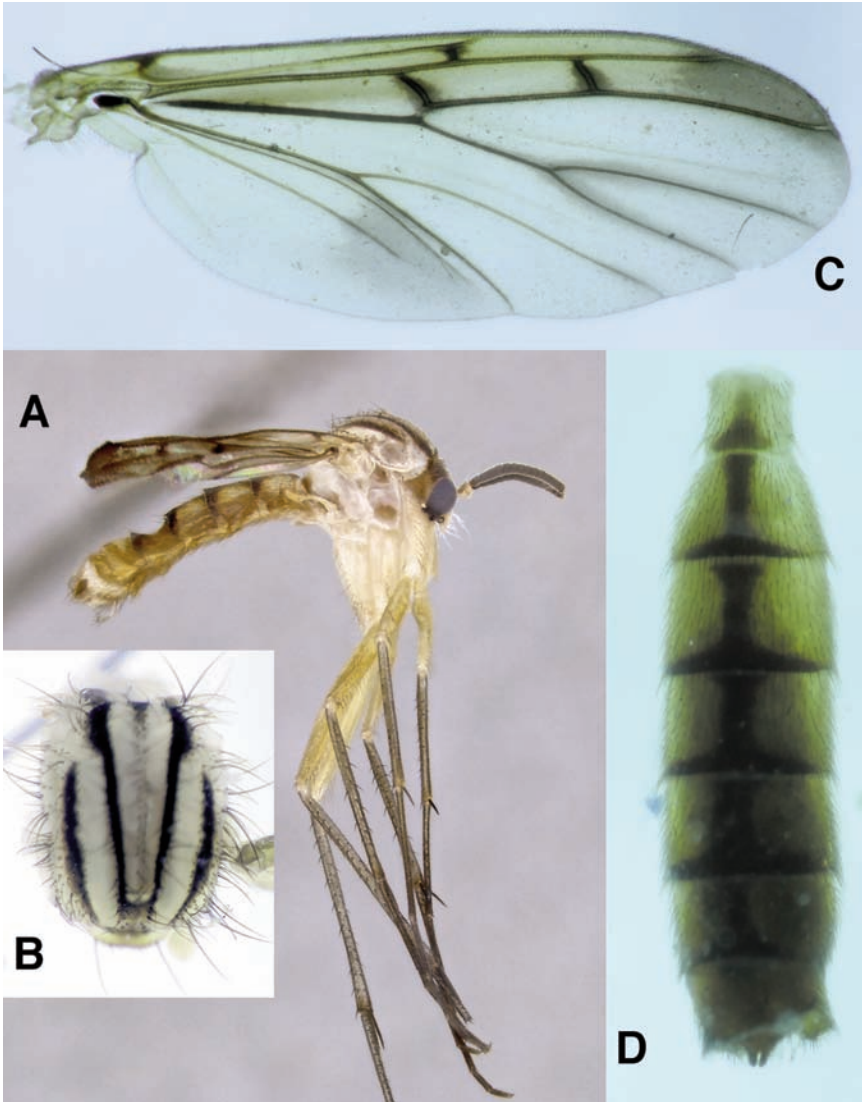


Fig. 1. *Neoempheria carinata* Sueyoshi. **A.** Female habitus. **B.** Mesonotum, dorsal view (teneral specimen). **C.** Wing. **D.** Abdomen.

***Sciophila* sp.**

New Island Records

This species was first recorded by Howarth & Preston (2006) from a specimen collected in 2000 in the Kahului Airport environs and Krushelnycky *et al.* (2014) listed the first

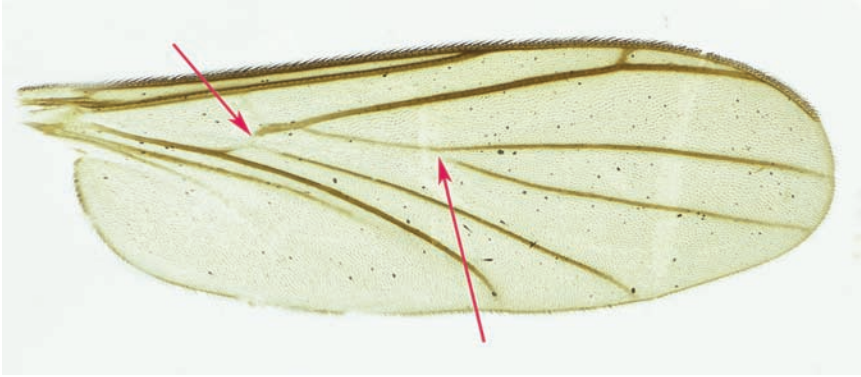


Fig. 2. *Apyrtula sastrei* Matile wing. Arrows point to effaced areas at base of indicated veins.

record of it on the Big Island (Pu'u Ahumoa on the southwestern flank of Mauna Kea). The new island records here extend that distribution to Kaua'i and Kaho'olawe; and another collection of it more northerly on the island of Hawai'i. That it has been in the Hawaiian Islands for the last 20 years or more, but relatively undetected, is probably attributable to the cryptic existence of immatures in webs in shelf and polypore fungus in localized conditions. The species identity remains unknown but it appears to be a member of species allied to *Sciophila lutea* Macquart, which is a Palearctic species, but other members of the group extend into the Oriental Region.

Material examined. HAWAIIAN ISLANDS: **Hawai'i:** 1♂, Ahualoa, nr. Honoka'a: 1 Oct 2019, Mallion, S. Chun (BPBM). **Kaho'olawe:** 1♀, Lua Makika, 29 Mar 2004, F. & K. Starr, swept from foliage (BPBM). **Kaua'i:** 1♂, 2♀, Na Pali-Kona Forest Reserve, Kahua Ridge Trailhead, 1,070 m, 22.11495°N, 159.61523°W, larva collected 29 Oct 2019, adult emerged 8 Nov 2019, W. Haines, reared from larvae collected from shelf fungus on koa (BPBM).

Keroplastidae

Apyrtula sastrei Matile

New National and State Record

(Fig. 2)

Previously known only from 5 specimens (1♂, 4♀) from the Caribbean island country of Dominica. This marks the first record for the State of Hawai'i and for the United States. Before Matile's (1982) description of *A. sastrei*, the genus *Apyrtula* Edwards was known only from two species from Brazil (an undescribed species from Peru is has also been seen by me in CNCI): *A. abbrevinervis* Edwards, and *A. spatulata* Edwards. *Apyrtula sastrei* can be distinguished from the other two by the combination of the more yellowish mesonotum, the base of M_4 effaced, and the costal vein ending at the midway point between the end of veins R_{4+5} and M_1 (see Fig. 2).

Material examined. HAWAIIAN ISLANDS: **O'ahu:** and 3♂, 1♀, 1 indet. sex, West O'ahu [exact locality kept private by land owner request], 13 Apr 2018, R. Peck, yellow pan traps (BPBM); 1♀, 1 indet. sex, same data except, 16 Apr 2018, R. Peck, yellow pan traps (BPBM). Vouchers in BPBM, HDOA.

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