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## New Indo-Pacific species of *Dasyrhicnoessa* Hendel, 1934 and *Pseudorhicnoessa* Malloch, 1914 (Diptera: Canacidae: Tethininae)

LORENZO MUNARI

c/o Museum of Natural History, S. Croce 1730, I-30135 Venezia, Italy. E-mail: [munari.lorenzo@gmail.com](mailto:munari.lorenzo@gmail.com)

### Abstract

Three new species of *Dasyrhicnoessa* Hendel, 1934 and one of *Pseudorhicnoessa* Malloch, 1914 from the Indo-Pacific area are described and the male terminalia illustrated. Among these new species, *Dasyrhicnoessa paradoxa* sp. nov. and *Pseudorhicnoessa longicerca* sp. nov. are especially noteworthy for the morphological peculiarities of the male terminalia.

**Key words:** Canacidae, Tethininae, *Dasyrhicnoessa*, *Pseudorhicnoessa*, new species, Indo-Pacific.

### Introduction

Numerous specimens of tropico-equatorial canacid flies from the collection of the Natural History Museum, London (UK) were examined and identified. Additional specimens of *Pseudorhicnoessa* Malloch, 1914 from the author's collection (Natural History Museum, Venice, Italy) and from the Australian Museum, Sydney, were re-examined to corroborate their specific status. Among these specimens, four new species were discovered and are described and illustrated here. The genus *Dasyrhicnoessa* Hendel, 1934 is represented by three new species from the Indo-Pacific area, whereas the genus *Pseudorhicnoessa*, hitherto known from two species only (Munari and Mathis, 2010), is recorded herein with an externally cryptic though genitally distinct new species from Papua New Guinea.

The Indo-Pacific area for the new species described herein stretches from the Malayan Peninsula, through Papua New Guinea, to the Solomon Islands.

### Material and methods

All specimens examined are double mounted, micro-pinned in plastic or elder blocks, or are glued to a celluloid triangle. Their study and illustrations required the use of dissecting and compound microscopes, the latter used in particular for perusal of the genitalic structures. Fine-tipped tweezers and micro-pins were used to remove and dissect abdomens, which were macerated in a boiling, potassium hydroxide solution. Abdomens were dipped in a 20% acetic acid solution for about one minute to fully neutralize the action of caustic potash, and then rinsed in distilled water. Genitalia or the entire abdomen were then transferred to glycerine for observation. When necessary for proper orientation, the structure was transferred from glycerine to glycerine jelly. The glycerine jelly was heated, and the piece appropriately oriented. After cooling, the piece embedded in glycerine jelly became immobilized. Abdomens and genitalia were in this way studied, photographed, and drawn, and finally placed in a small plastic tube filled with glycerine, and pinned below the specimen from which the structure was removed. Descriptive terminology chiefly follows the *Manual of Central American Diptera* (Cumming and Wood, 2009). Holotype label data are quoted verbatim, i.e. without interpretation; a slash (/) indicates the end of a line of print or handwriting, two slashes (//) indicate the end of a label and the beginning of another. Significant supplementary or qualifying information is given in brackets. Descriptions of the new species are based primarily on the holotypes,

*sexseriata* (Hendel, 1913). *Australasian/Oceanian*: Australia (Queensland), Bismarck Islands (Dyaul, Hermit, Lavongai, Manus), Caroline Islands (Yap, Palau, Pohnpei, Ponape), Fiji Islands (Ovalau, Viti Levu), Mariana Islands (Guam, Saipan), Marshall Islands (Namorik), Papua New Guinea, Tonga Islands (Tongatapu), Wake Island. *Oriental*: China (Hong Kong), Philippines, Taiwan.

*tripunctata* Sasakawa, 1974. *Australasian/Oceanian*: Australia (Queensland), Bismarck Islands (Dyaul, Mussau), Caroline Islands (Kosrae, Palau, Pohnpei), Mariana Islands (Guam), Papua New Guinea. *Oriental*: Japan (Ryukyus), Malaysia (Sabah, Sarawak), Philippines (Balabac, Culion, Palawan, Tawi-Tawi). *Palaeartic*: United Arab Emirates (cf.).

*vockerothi* Hardy and Delfinado, 1980. *Afrotropical*: Seychelles (Aldabra, Astove, Mahé). *Australasian/Oceanian*: Australia (New South Wales, Northern Territory, Queensland), Bismarck Islands (Dyaul), Caroline Islands (Truk, Palau), Gilbert Islands, Hawaii (Hawaii, Hilo, Kauai, Maui, Molokai, Oahu), Mariana Islands (Guam, Saipan), Marshall Islands, ?New Caledonia, Papua New Guinea, Wake Island. *Oriental*: Japan (Ryukyus), Malaysia (Sarawak), Philippines, Sri Lanka.

*yoshiyasui* Sasakawa, 1986. *Oriental*: China (Hong Kong), Japan (Ryukyus).

**Genus *Pseudorhinoessa*** Malloch, 1914 (3 species)

*longicerca* sp. nov. *Australasian/Oceanian*: Papua New Guinea.

*rattii* Munari, 1981. *Afrotropical*: Mauritius, Seychelles (Cousine, Mahé). *Oriental*: India (Goa), Sri Lanka.

*spinipes* Malloch, 1914. *Australasian/Oceanian*: Australia (Northern Territory, Queensland), Bismarck Islands (Duke of York, Dyaul, Hermit, Lavongai, Manus), Caroline Islands (Palau, Tobi, Yap), Mariana Islands (Guam, Saipan), Marshall Islands (Alu, Likiep, Majuro), Papua New Guinea. *Oriental*: Japan (Ryukyus), Malaysia (Sabah, Sarawak, Singapore), Philippines, Taiwan, Thailand, Vietnam.

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