

The Status of *Liris magnificus* Kohl, 1884, and *Trachogorytes costaricae* R. Bohart, 2000 (Hymenoptera: Crabronidae: Crabroninae, Bembicinae)

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Abstract.—The Australian *Liris magnificus* Kohl, 1884, currently treated as a subspecies of *Liris haemorrhoidalis* (Fabricius, 1803) from the Palearctic and Afrotropical Regions, is an independent, full species. The taxonomic history of the species is reviewed and the differences with *haemorrhoidalis* are discussed. *Trachogorytes* Bohart, 2000, a monotypic genus described for *Trachogorytes costaricae* Bohart, 2000, is actually a junior synonym of *Mellinus* Fabricius, 1790. *Mellinus costaricae* Bohart, 2000, comb. nov., is redescribed.

Liris magnificus Kohl

Liris magnificus Kohl, 1884:356, E (as *magnifica*, incorrect original termination). Holotype or syntypes: E, northern Australia: no specific locality (Naturhistorisches Museum Wien). – Kohl, 1892:228 (in key to world *Liris* s.s.); Turner, 1908:473 (as new synonym of *Liris haemorrhoidalis*); Dollfuss, 1989:10 (type material in NHMW). – **As *Larra magnifica*:** Kohl, 1885:245 (new combination, in checklist of world *Larra*); Dalla Torre, 1897:669 (in catalog of world Hymenoptera). – **As *Liris haemorrhoidalis magnifica*:** Williams, 1928:49 (new status, nesting habits); Bohart and Menke, 1976:245 (as tentative subspecies of *Liris haemorrhoidalis*); Cardale, 1985:235 (in catalog of Australian Sphecidae); Naumann, 1993:185 (Australia: Queensland: Heathlands area in Cape York).

Liris magnificus was described as a full species, but was synonymized with *haemorrhoidalis* (Fabricius) by Turner (1908). Surprisingly, the author stated “I cannot detect any appreciable difference in the male”, but in fact the males are strikingly different (see below). Both species, however, are similar in having a non-emarginate posterior mandibular margin, red legs, and conspicuously golden body setae, a combination unique within the genus. Williams (1928) treated *magnificus* as a subspecies of *haemorrhoidalis*, an interpretation followed

by Cardale (1985) and Naumann (1993). Bohart and Menke (1976), on the other hand, regarded the subspecific status of *magnificus* as tentative.

Having recently examined five females and six males of *magnificus*, I conclude that it is actually a full species, and not a geographic form of *haemorrhoidalis*. The differences between them are as follows. In *magnificus*, the median swelling of the pronotal collar is wider (Fig. 2b); in the female, the carina emerging from the clypeal lobe corner is about twice as long as the midocellar width (Fig. 2a) and the dark apical coloration of fore wing does not extend into the cell area (Fig. 2c); the male hind tarsomere II is simple, as in most of the congeners; in most males the hind coxa is concave ventrally and carinate along inner margin (Fig. 2d), but slightly convex ventrally and obtuse along inner margin in one specimen from Wonga Beach. In *haemorrhoidalis*, the median swelling of the pronotal collar is narrower (Fig. 1b); in the female, the carina emerging from the clypeal lobe corner is about as long as midocellar width (Fig. 1a) and the dark apical area of fore wing covers marginal as well as second and third submarginal cells (Fig. 1c); in the male the

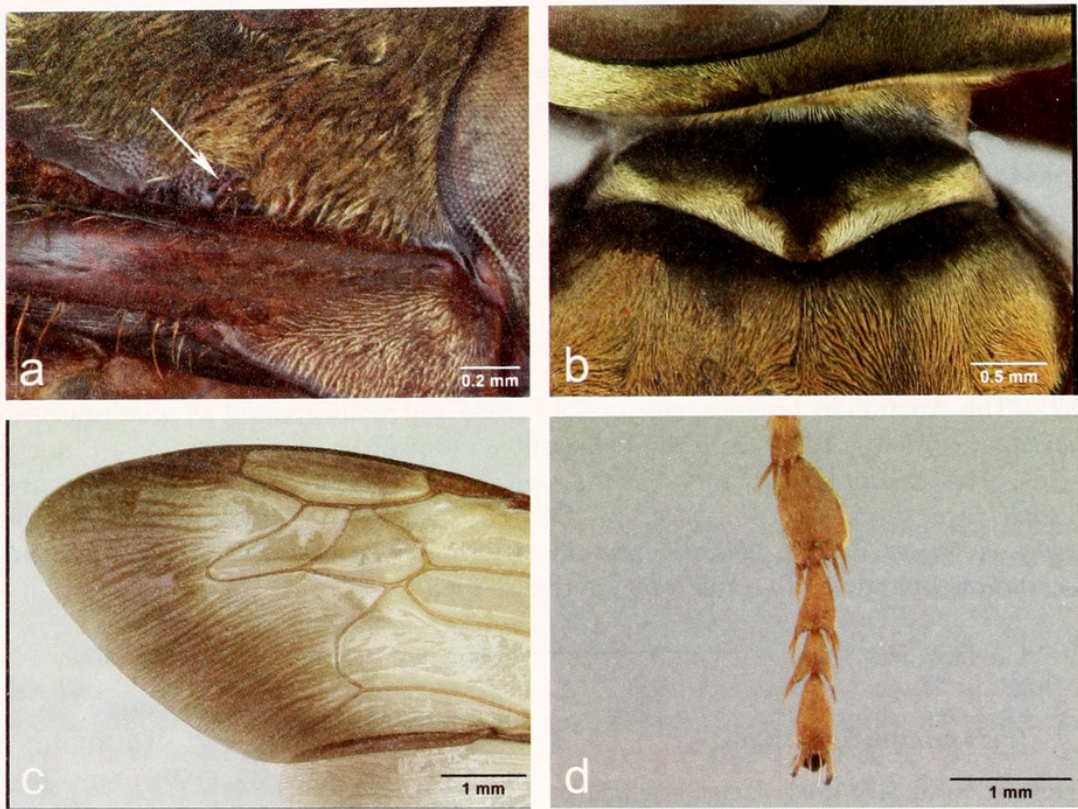


Fig. 1. *Liris haemorrhoidalis* (Fabricius): a – lateral carina of female clypeal lobe in oblique view; b – female pronotum; c – apical half of female fore wing; d – male hind tarsomere II.

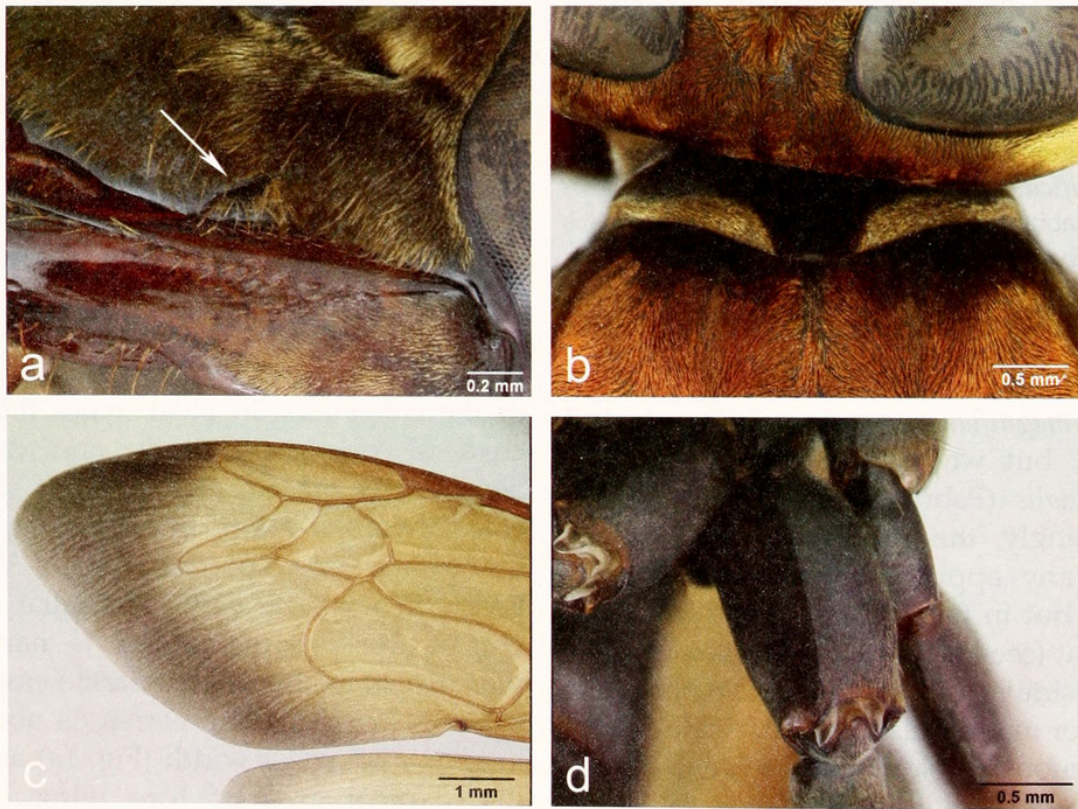


Fig. 2. *Liris magnificus* Turner: a – lateral carina of female clypeal lobe in oblique view; b – female pronotum; c – apical half of female fore wing; d – male hind coxa.

hind coxa is neither concave nor carinate, and hind tarsomere II is conspicuously expanded (Fig. 1d), a unique such feature in the genus. The genitalia appear identical in both species. The two species do not occur sympatrically: *Liris magnificus* is known only from Australia, whereas *haemorrhoidalis* occurs throughout Africa, Spain, the Canary Islands, and southwestern Asia to western India and Sri Lanka.

Records (all specimens are at the California Academy of Sciences).—AUSTRALIA: **Queensland:** Armstrong Beach ca 15 km E Sarina at 21°27.3'S 149°17.5'E, 29 Oct. 2006, W.J. Pulawski (1 ♂); Balgal Beach 51 km NW Townsville at 19°02.5'S 146°25.2'E, 18 May 2007, V.E. Ahrens and W.J. Pulawski (1 ♀); Blacks Beach ca 8 km N Mackay at 21°03.6'S 149°11'E, 1 Dec 2006, W.J. Pulawski (1 ♂); Burdekin River 20 km NE Charters Towers at 20°00.1'S 146°26.3'E, 26 Nov 2006, W.J. Pulawski, and 21–22 May 2007, V.E. Ahrens and W.J. Pulawski (1 ♀, 1 ♂); Crystal Cascades 10 km W Cairns, 9–10 July 1983, T.W. Davies (1 ♀); 69 road km WNW Mount Carbine at 16°13.2'S 144°43.8'E, 13 May 2007, V.E. Ahrens and W.J. Pulawski (1 ♀); Wonga Beach 11 km NNE Mossman at 16°19.9'S 145°25.3', W.J. Pulawski, 19 Nov 2006 (1 ♀, 1 ♂) and 21 Nov 2006 (1 ♂).

Mellinus costaricae (R. Bohart, 2000),
new combination

Trachogorytes costaricae R. Bohart, 2000:168, ♀. Holotype: ♀, Costa Rica: Puntarenas: San Vito (University of California, Davis). – Amarante, 2002:19 (in catalog of Neotropical Crabronidae).

R. Bohart (2000) published an important revision of the Neotropical Gorytini in which he described eight new genera and a number of new species. One of them was *Trachogorytes costaricae*, based on a single female from Costa Rica. I have examined that specimen and found that it is a member of *Mellinus* based on the wing venation (second submarginal cell not receiving any of the recurrent veins), non-emarginate posterior mandibular margin, short tongue, absence of an omalus and oblique scutal carina, raised and well separated pronotal collar, scutellum, and metanotum, evident



Fig. 3. *Mellinus costaricae* (Bohart), holotype: a – whole body in lateral view; b – mesopleuron; c – propodeal enclosure.

notaulus, propodeal dorsum with well-defined enclosure, submarginal cell III long and distally acute, mid-coxa simple, presence of two mid-tibial spurs, and a pedunculate gaster (Bohart and Menke 1976). In Menke's key (1996) to Neotropical *Mellinus*, this species runs to *henseni* Menke. It differs from *henseni* and all other currently

recognized *Mellinus* (Siri and Bohart 1974, Menke 1996) by its unique sculpture: the mesopleuron is longitudinally ridged in the posterior half (Fig. 3b) rather than punctate or uniformly microsculptured, the propodeal enclosure is all coarsely rugose (except at the very apex), the propodeal side is longitudinally ridged, and the propodeal posterior surface is rugose (Fig. 3c), not punctate, as stated in the original description. Additionally, the tentorial pit is closer to the antennal socket than to the eye margin and the propodeal side is separated from the posterior surface by a conspicuous carina, as in the Palearctic *arvensis* (Linnaeus) and *crabroneus* (Thunberg). Most of the body is black (Fig. 3a), but the following are whitish: narrow paraorbital strip in the ventral half of the frons, clypeus (except along frontoclypeal margin), scape ventrally, mandible (except apically), mesally interrupted fascia on pronotal collar, pronotal lobe apically, anterior half of tegula, tiny median spot on metanotum, tergum I laterally (except in basal half) and apically, and a pair of preapical, widely separated spots on tergum II. The femora are blackish basally, then reddish brown and yellow; the tibiae are reddish brown and yellow; and the tarsi are yellow.

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