



## On the misidentification of *Anagrus ustulatus* Haliday (Hymenoptera: Mymaridae)

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The cosmopolitan genus *Anagrus* Haliday is one of the largest in Mymaridae (Hymenoptera: Chalcidoidea), and includes very common egg parasitoids, mostly of leafhoppers. The smallest species (body length: 0.4–0.6 mm) are found in the *atomus* species group. This group at present includes about 20 species worldwide. *Anagrus atomus* (Linnaeus) is among the most common species in the Palaearctic region. Other populations very similar in morphology and biology to this species are also widespread and associated with several leafhoppers infesting wild and cultivated plants (Matteucig & Viggiani 2008). Some specimens of these populations were identified as *A. ustulatus* Haliday by Chiappini (1989), who presumably followed Graham (1982).

Haliday (1833) described *Anagrus ustulatus* as follows: “Sp. 3. *A. ustulatus*. *Fuscus* *antennis thoracis disco pedibusque ferrugineis, alis hyalinis*. ♂ (Long. .03; alar. .08.). *Precedentibus brevior, colore obscuriore; alae ut in A. atomo*.” Graham (1982: 201) stated that “Seven specimens stand under this name in Haliday’s collection, but all except the first two (Nos. 70 and 71) are females. Of the two males, No 70 agrees best with the original description and is now designed LECTOTYPE”. He considered the five females (Nos. 72, 73, 74, 75, 76) to be “clearly” conspecific with the male lectotype. In his key to the subgenera, species-groups and some British species of *Anagrus* (females), Graham (1982: 198) stated that *A. ustulatus* shows “forewing very broad for the genus 5.7–6.1 times as long as broad and with 8–9 longitudinal rows of hairs in its distal part” (in Haliday’s description “*alae ut in A. atomo*”). He did not designate the females as paralectotypes but included female features for *A. ustulatus* in his key (couplet 6) and species discussion. Yet, strangely, Graham (1982: 235) listed, the five Haliday females (72–76) as “*Anagrus* sp. near *subfuscus* Förster” and two others (nos. 60 and 61) as *Anagrus* sp. ? *subfuscus* Förster”. Moreover, he placed *A. ustulatus* not in the *atomus* group, but as “*species sola*”, near those of the *incarnatus* group though he did mention (p. 201) that “male *ustulatus* have genitalia unlike those of *atomus* but similar to the type found in the species-group of *incarnatus*.” After examining the lectotype of *A. ustulatus*, Chiappini (1989) assigned it to the *A. atomus* group, contradicting Graham’s placement and, without seeing any female under the name *ustulatus* in the Haliday collection, determined that her *Anagrus* sp. obtained from leafhoppers on bramble and rose was conspecific with *A. ustulatus*. Chiappini & Triapitsyn (2007) examined two females (Nos. 72 and 73) under *ustulatus* in the Haliday collection, Dublin, and confirmed that they belong to the *incarnatus* species-group.

Interestingly, Graham (1982) did not mention the two *Anagrus* females of the Haliday collection deposited in the Hope Entomological Collections, Oxford, but he listed (p. 238) two other specimens as follows “W18, W19. *A. ? incarnatus* Haliday, 2 ♀ on the same card; Westwood label ‘*Anagrus ustulatus* Haliday coll.’ (? Walker)” (Fig. 1b). The present author examined these specimens. Their morphological characters confirm that all females of the original Haliday collection, both in Dublin and in Oxford, under the name *ustulatus* belong to the *Anagrus incarnatus* group. In particular, the two specimens W18 and W19 are labelled type of *A. ustulatus* by an unknown reviser (perhaps W. D. Hincks?) of the Haliday collection. These specimens, preserved on a card (Fig. 1, a and b), were remounted on slides. They appear very similar to *A. incarnatus* Haliday, except for having one seta on the distal part of each third valvulae. A brief description follows.

**Female.** Body length about 0.7 mm. General body colour yellowish (Fig. 1, c); antenna with F5, F6 and club, head, basal and distal parts of metasoma with some dark areas; fore wing with a light basal infuscation. Antenna (Fig. 1, d) with F2 narrow and slightly longer than F3, subsequent funicular segments subequal and slightly shorter than F3, club 1.6× length of F6. Multiporous plate sensilla (mps) on funicular segments as follows: F3 and F4 (1), F5 and F6 (2); club with 5 mps (Fig. 1, e). Mesosoma shorter than metasoma (30:35), without setae on mesoscutum. Fore wing 7.7–8.5× as long as wide; disc with one row of setae along about one-third of its length and with 4 or 5 rows distally, rather scanty,

## Conclusion

The name *Anagrus ustulatus* Haliday is best treated as a *nomen dubium* until females can definitely be associated correctly with the lectotype male and described so as to distinguish this species from others in the *atomus* group of *Anagrus*.

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