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Cryptus genalis Tschek, 1872 (Hymenoptera: Ichneumonidae, Cryptinae), a gregarious ectoparasitoid in scarabaeid pupal chambers

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Synopsis

Cryptus genalis Tschek is recorded as a gregarious parasitoid in pupal chambers of *Protaetia hieroglyphica* (Ménétriés) in Georgia. A review of the status of the nominal species *Cryptus mokrzeckii* Kurdjumov resulted in its being removed from synonymy with *Cryptus apparitorius* (Villers) and being placed as a junior synonym of *C. genalis* (**syn. nov.**).

Key words: *Cryptus apparitorius*, *Cryptus genalis*, *Cryptus mokrzeckii*, synonymy, *Protaetia hieroglyphica*, Scarabaeidae, gregarious parasitism, Georgia.

During an entomological trip to Georgia by JH, six pupal chambers of *Protaetia hieroglyphica* (Ménétriés, 1832) (Coleoptera: Scarabaeidae, Cetoniinae) (det. A. Byk) were found a few centimetres deep in litter in a cavity on a Persian walnut *Juglans regia* L. tree in the downtown of Rustavi city, south of Tbilisi, on 24.v.2012. Two of the chambers contained cocoons of parasitoids. One brood (of about five) had already emerged and the assemblage was partly destroyed, but the other chamber was still intact, with seven un-emerged parasitoid cocoons inside, next to the pupal host remains. Six males of *Cryptus genalis* Tschek emerged from these brownish, relatively hard cocoons (Figs 1, 2) over several consecutive days during the period 25.v–6.vi.2012. One cocoon remained un-emerged. The material is deposited in the collections of JH (3 males and the cocoons), MS (2 males) and the National Museums of Scotland (1 male).

With around 30 European species, *Cryptus* is the largest genus of the tribe Cryptini in the Eurasian fauna but, despite several species being very abundant, it is not well known biologically. Cryptini are parasitoids of various cocoons and cocoon-like structures, including aculeate Hymenoptera cells, spider egg sacs, and Lepidoptera and Coleoptera pupae and prepupae in a range of situations and substrates. Both solitary and gregarious parasitism are known, the majority of species being consistent in this respect. There is usually strong taxon (or sometimes niche) specialisation by each Cryptini genus and individual species may often be extreme specialists. Townes (1970) remarks that *Cryptus* (as *Itamoplex*) females spend much time on the ground and, from the few existing

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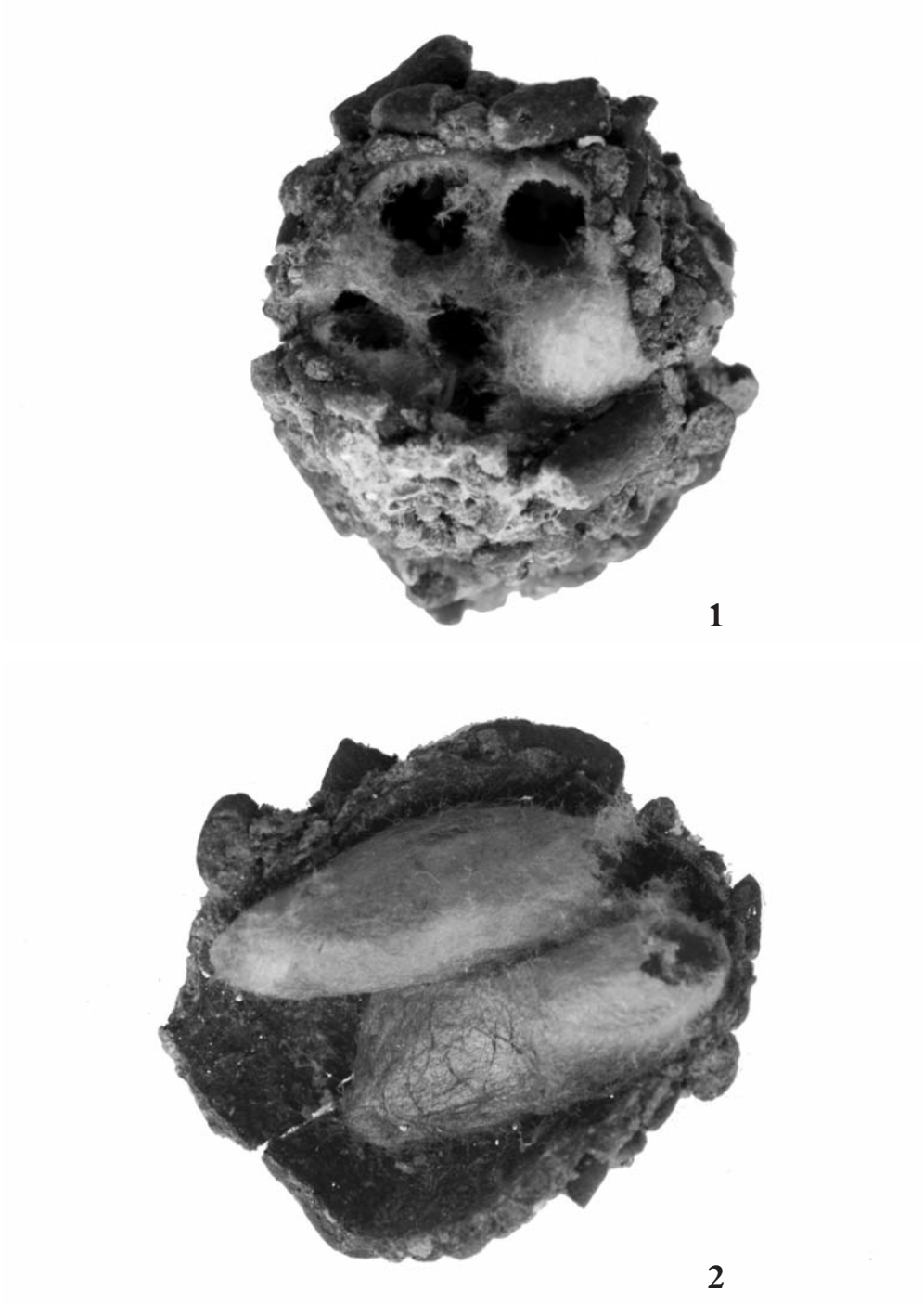

Figs 1, 2. Cocoons, some emerged, of *Cryptus genalis* (Tschek) in partially opened pupal chamber of *Protaetia hieroglyphica* (Ménétriés). 1, arrangement of the cocoons. 2, side view of two of the seven cocoons.

rearing records, they are believed to parasitize cocoons of Lepidoptera, Hymenoptera and Coleoptera weakly concealed in soil or similar substrates, with most records implying solitary parasitism.

The rearing recorded here is not the first from a cetoniine scarabaeid, as Kurdjumov (1912) described his *Cryptus mokrzeckii* (subsequently, but incorrectly, regarded as a junior synonym of *Cryptus apparitorius* (Villers)) from many specimens of both sexes reared from a *Cetonia* species that was not specified (and of course the true host might now be classified in a related genus).

The synonymy of *Cryptus mokrzeckii* Kurdjumov, 1912, with *C. apparitorius* (Villers, 1789) originates in Meyer (1933) and on that basis *Cetonia* is listed as host for *C. apparitorius* in Taxapad (Yu *et al*., 2005). However, it is not clear whether Meyer had studied type material of *C. mokrzeckii* or if he based the synonymy only on the description. Unfortunately, nothing is known about the type material of *C. mokrzeckii* and we presume it to be lost, because the type of at least one other species described by Kurdjumov is regarded as lost (Wilkinson, 1939). As *C. mokrzeckii* has been reared from the same and rather unusual host group as the present rearing of *C. genalis*, it is of interest to know whether both rearings refer to the same parasitoid species; therefore an effort was made to reinterpret *C. mokrzeckii* on the basis of the description. The coloration (which proved to be the most suitable part of the description) agrees best with *C. apparitorius* and *C. genalis* because of the white spot on the hind coxa in the male sex. The following colour characters in the male sex indicate a better agreement with *C. genalis* than with *C. apparitorius*: malar space white, small white patch in front of tegula, two white spots on speculum, propodeum with apical transverse carina with corners having white spots, metanotum without white coloration. Therefore *C. mokrzeckii* is removed from synonymy with *C. apparitorius*, but synonymised with *C. genalis* (**syn. nov.**). A strange character mentioned by Kurdjumov (1912) for *C. mokrzeckii* is the white ring of the antenna, which is absent in all *Cryptus* species known to the authors, although it is apparently present in one Japanese species ascribed to this genus (Uchida, 1930). However, one of the specimens reared from *Protaetia hieroglyphica* has one antenna with a narrow white ring and the apical half of this antenna is brown, not black as in the other antenna, suggesting the white ring is a deformity. The male of *C. genalis* was unknown (or, to take account of *C. mokrzeckii*, unrecognised) prior to this study, and it is not clear if such deformities occur regularly, or if antennae with white rings occur in some populations.

MS has examined the type of *C. apparitorius* and the identity of the reared males of *C. genalis* is based mainly on head characters that agree with the female and which are unique in Palaearctic *Cryptus* species. Schwarz (in prep.) will give a description of the male of *C. genalis*. It runs to couplet 7 (*C. triguttatus* Gravenhorst and *C. arenicola* Thomson) in van Rossem's key (Rossem, 1969) but can be separated from both rather easily by its fore and mid tibiae being white dorsally, its hind coxa with a white patch and its frons with a distinctly V-shaped excavation as seen dorsally (*et alia*).

Acknowledgements

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