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Tychius (*Apeltarius*) *amplicollis* Aubé, 1850 in Central Italy with notes on its host plant and immature stages (Coleoptera, Curculionidae)

Abstract

Here we report the first finding of *Tychius amplicollis* Aubé, 1850 in central Italy, and its association with the Fabaceae *Vicia sativa* subsp. *macrocarpa* (Moris) Arcang. This is to date the first observed host plant for a species of the subgenus *Apeltarius* Desbrochers des Loges, 1873.

Introduction

In the general collection of the Museo Civico di Zoologia of Rome, Italy, we discovered a single specimen of *Tychius* (*Apeltarius*) *amplicollis* Aubé, 1850 bearing the label "Monti della Tolfa / Prati 27.5.1995 / leg. G. Zanolla" (i.e. slashes separate different lines of the label). According to Alonzo-Zarazaga et al. (2017), the species is distributed in Corsica, Algeria, Libya, Tunisia, and Italy. From the latter country it was reported only for the southernmost tip of Calabria, Sicily and Sardinia (Caldara 1978, Abbazzi & Maggini 2009). Since it was not possible to track down the precise locality of the finding from Tolfa hills, which according to the collector was along the road connecting the cities of Civitavecchia and Allumiere (Zanolla, pers. comm.), we made multiple excursions to this area in 2018. Our aim was to find out whether this uncommon species was still present in the area, and to possibly discover its host plant species, since so far no data about hosts were available for any species of the subgenus *Apeltarius* Desbrochers des Loges, 1873.

Material and methods

Specimens were collected by a beating tray method which allows to easily individuate the plant from where an insect is being sampled. Adults were killed by ethyl acetate and mounted dry on paper labels. Larvae emerged from collected pods of the host plant which were brought to the laboratory; they were then preserved in ethanol mixed with 10% of acetic acid. Pictures of insects were taken by F. Sacco with a Nikon D810 camera provided with a Mitutoyo microscope objective lense 10x 0.28 ∞ and 100 mm (5x), 150 mm (7,5x) tube lens, illumination supplied by a flash. Each picture required around 150 shoots, then the single shoots were stacked with the Helicon Focus software. Photos of the habitat were taken by R. Casalini with a Canon PowerShot A495 camera.

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submitted: 24.08.2018
accepted: 15.09.2018

Results and Discussion

Three field surveys were made in the spring of 2018 (May 16, June 2, and June 9), during which it was possible to gather 27 adults of *Tychius amplicollis* (Fig. 1). The records were made along the NE slope of Via delle Terme di Traiano (42°06'48"N 11°51'45"E) at 300 m a.s.l. (Fig. 4) on *Vicia sativa* subsp. *macrocarpa* (Moris) Arcang. This plant is a Mediterranean-Turanian member of the Fabaceae, once cultivated as forage and thus considered adventive in Italy (Pignatti 1982, Nimis et al. 2018), where it is uncommonly distributed in all peninsular regions as well as in Piedmont and Liguria. During the second and third excursion in the same locality, the first author found on a pod of *Vicia sativa* subsp. *macrocarpa* a living weevil larva. He observed the feeding behaviour and the ponding of females (Fig. 3). Therefore, he collected a number of pods of the plant from which after a few days some more third instar weevil larvae emerged. Thus, we are able to confirm the presence of *T. amplicollis* in central Italy. Furthermore, our finding represents the first published record for the region of Latium.

In addition, although we were unable to obtain pupae or adults from the small number of larvae that emerged from the *Vicia* pods, their large size makes us sure that they truly belong to *Tychius amplicollis*. Despite the fact that in the spot where we sampled *T. amplicollis* also some other plants of the pea family (e.g. *Vicia cracca* L.) were present, we were not able to find any *Tychius* on them. In general, the Fabaceae-associated weevil fauna was very poor and limited to few mostly widespread species like *Eutrichapion punctiger* (Paykull, 1792), *Hypera nigrirostris* (Fabricius, 1775) and *Hypera postica* (Gyllenhal, 1813).

According to Caldara (1978) and Alonzo-Zarazaga et al. (2017), only four species belong to the subgenus *Apeltarius*, namely: (i) *Tychius amplicollis* Aubé, 1850; (ii) *T. multilineatus* Desbrochers des Loges, 1873 recorded from Sicily and Algeria; (iii) *T. quinquelineatus* Tournier, 1874 recorded from Israel, Lebanon, Syria, and Egypt; and (iv) *T. strigulatus* Desbrochers des Loges, 1875, recorded from Israel, Syria, and Turkey. For none of the above mentioned species data were available about their biology, except for *T. strigulatus* which was collected on an unidentified Fabaceae in eastern Turkey (Caldara 1978). In accordance with Caldara 1978, larval morphology is of paramount importance for reliably assessing relationships between weevil taxa inside the genus *Tychius* Germar, 1817. This is particularly true for the four species mentioned above that are part of the somewhat aberrant Euro-Turanian subgenus *Apeltarius* and the numerous species of subgenus *Tychius* s.str., the latter being distributed in several regions of the world. In Fig. 2 the larva of *T. amplicollis* is depicted just to show its overall morphology, waiting for a future more in-depth comparative study of larvae of different species of *Tychius*, in addition to what has been already published by Skuhrovec et al. (2014).

Acknowledgements

We thank Fernando Lucchese (Università Roma Tre, Rome, Italy) for confirming the identification of the plant species, and Giampiero Zanolla (Rome, Italy) for sharing with us information about the locality where he first found the species treated in this paper.

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Fig. 1: *Tychius amplicollis* from Latium, from above. Size 4.3 mm excluding rostrum.
Photo by Francesco Sacco.

Fig. 2: Larva of *Tychius amplicollis* from Latium in lateral view, with front view of the head. Size of larva 4.7 mm. Width of head 0.9 mm. Photos by Francesco Sacco.

Fig. 3: Female of *Tychius amplicollis* on a pod of *Vicia sativa* subsp. *macrocarpa*, with feeding holes on leaves and ponding ones on fruit. Photo by Roberto Casalini.

Fig. 4: Habitat of *Tychius amplicollis* at Via delle Terme di Traiano, Italy. Photo by Roberto Casalini.

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: Gredleriana

Jahr/Year: 2018

Band/Volume: 018

Autor(en)/Author(s): Casalini Roberto, Colonnelli Enzo, Sacco Francesco

Artikel/Article: Tychius (Apeltarius) amplicollis Aubé, 1850 in Central Italy with notes on its host plant and immature stages (Coleoptera, Curculionidae) 131-133