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A considerable enlargement of the distribution of *Stomodes letzneri* Reitter, 1889 with first records from Crete, Greece (Coleoptera, Curculionidae)

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On an excursion to western Crete Island, the first specimens of the weevil genus *Stomodes* Schoenherr, 1826 were discovered by sifting leaf litter in an olive grove in the Chania province. The three specimens collected proved con-specific with *Stomodes letzneri* Reitter, 1889 described from the Peloponnese. The new finds enlarge considerably the distribution of the flightless and not very mobile species. An accidental introduction is supposed. The female genital organs are illustrated for the first time.

Keywords: Curculionoidea, Entiminae, Otiorhynchini, *Stomodes letzneri*, new record, Crete, Greece

INTRODUCTION

The weevil fauna (Curculionoidea) of Crete Island is still being explored. First literature references date back to Von Heyden (1884) and Von Oertzen (1886) who together compiled about 100 taxa. Further research by Faust (1889a, 1889b), descriptions by Pic (1904), Voss (1948), Osella (1980), Bahr & Bayer (2005), the listed species in Fauna Europaea (2007), the records by Germann (2009), Winkelmann *et al.* (2012) and the catalogue of Greek weevils (Bahr *et al.* 2014), resulted in more than 230 species of Curculionoidea presently recorded from Crete.

The composition of the weevil fauna of Crete is influenced by elements of the eastern Mediterranean basin and also consists of endemic species. Even species with flight ability as *Polydrusus cressius* Pic, 1904 or *Dichorrhinus creticus* (Faust, 1889) have undergone separate evolution on Crete Island (Borovec & Germann 2013, Germann 2013). The discovery of *Stomodes letzneri* Reitter, 1889 on the Peloponnese and Crete is astonishing, as Crete is isolated already since about 10 Million years from the Greek mainland (Rögl & Steininger 1983), and its fauna shows more affinities to the Anatolian fauna, where a land bridge enabled longer lasting exchanges of the fauna (Creutzburg 1966).

In the following the records of *Stomodes letzneri* are presented, and a possible explanation for its occurrence on Crete is provided.

MATERIAL & METHODS

Abbreviations used:

NMBE – Naturhistorisches Museum der Burgergemeinde Bern
SDEI – Senckenberg Deutsches Entomologisches Institut, Müncheberg
cCG – collection Christoph Germann, Thun

For sifting leaf litter a beetle sifter with grid width of 7 mm was used. The extraction method applied follows Germann (2014).

The drawings by Olena Domschke were made using a camera lucida attached to a stereomicroscope (Olympus BH-2).

The following female specimens from the SDEI were used for comparison: 1 ex. Syntype *Stomodes angustatus* (Stierlin, 1872) Griechenld., coll. Stierlin. 2 ex. Griechenland, Taygetos, coll. Letzner. 1 ex. GR: Peloponnes (Lakonia): Parnon Mts.: 4.5 km W Karies, 930 m, unter *Quercus*, gesiebt, 19.IV.1999, 37°17'12" N, 22°28'02" E, leg. & coll. Behne. 2 ex. Nauplia, coll. Kraatz. Additionally the records in Bahr *et al*. 2014 (6 females Messinia, Mt. Taygetos W, Saidona E, 36°52'59" N 22°17'25" E, 800 m, 19.05.2011, leg. & coll. Winkelmann) were used for the map.

RESULTS

On a joint entomological excursion together with Lepidopterologists, Crete Island was visited from 5th to 14th April 2012. The focus was set on the western province Chania, and there mainly on an area along a north-south axis at the foothills of the Lefka Ori massif. With different collection techniques (hand catches on plants, beating tray, sweeping and sifting), more than 88 taxa of Curculionoidea were collected, among them three female specimens of a member of the genus *Stomodes* Schoenherr, 1826 with the indications given in the following:

Fig. 1. Habitat of *Stomodes letzneri* Reitter, 1889 within an olive grove on Crete, Krapis, 7th April 2012.

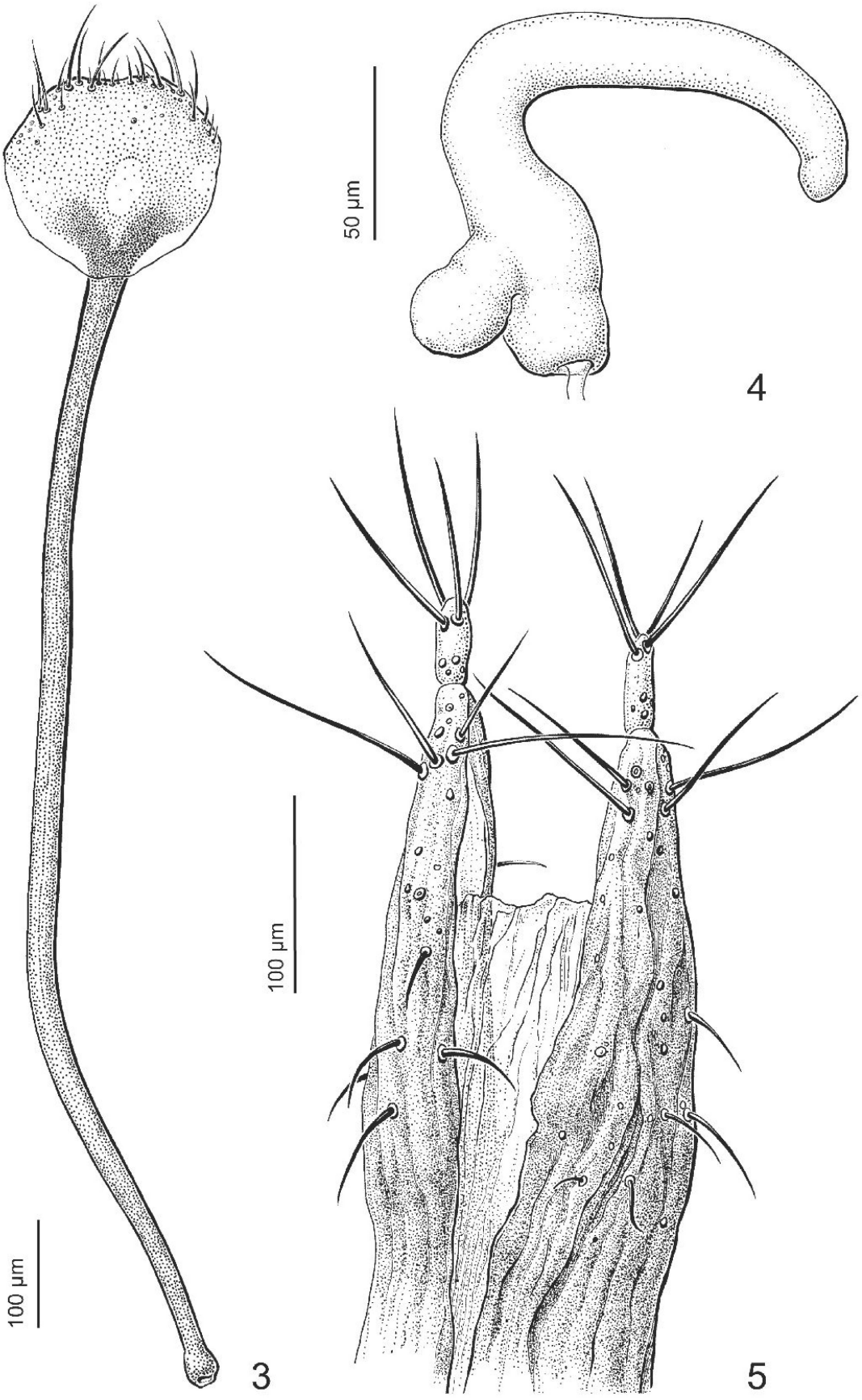
2 ex. 166_12.2 GREECE, Crete Island, Chania, S-Alikambos, Krapis, N 35°19'47"/ E 24°12'01", 440 m [a.s.l.], Olivenhain auf Kalkfels [olive grove on limestone], 7.4.2012, leg. C. Germann (cCG, NMBE).

1 ex., 166_12.4 GREECE, Crete Island, Chania, S-Vrises, N35°21'41"/ E24°11'44", 130 m [a.s.l.], Olivenhain auf Kalkfels [olive grove on limestone], 8.4.2012, leg. C. Germann (cCG).

All specimens were sifted from leaf litter under *Phrygana*-vegetation (*Asphodelus*, *Euphorbia*, various Fabaceae) in old olive groves on limestone rocks (Fig. 1) in western Crete, about 200 km SSE away from the localities on the Peloponnese.

It was Wagner (1912) who made the last revision of *Stomodes*. Presently the genus includes 13 taxa (11 species and two subspecies) in the Palaearctic realm

Fig. 2. Habitus of *Stomodes letzneri* Reitter, 1889, Crete, Chania, S-Alikambos, Krapis.



Figs 3–5. Female genital structures of *Stomodes letzneri* Reitter, 1889. — 3. Spiculum ventrale. — 4. Spermatheca. — 5. Ovipositor (Illustrations by Olena Domschke).

(Magnano & Alonso-Zarazaga 2013), whereas five of which – *Stomodes gyrosicollis* Boheman, 1842, *S. leonhardi* Wagner, 1912, *S. letzneri*, *S. puncticollis* s. str. Tournier, 1864 and *S. tolutarius* Schoenherr, 1826 – are recorded from Greece (Bahr *et al.* 2014), and at present none from Crete island. The former synonymous name *letzneri* was proposed recently by Magnano & Alonso-Zarazaga (2013), because *S. angustatus* (Stierlin, 1872) – described as *Otiorhynchus* – is a homonym of *Otiorhynchus angustatus* Stierlin, 1861 (in its own turn a synonym of *O.* (*Otiorhynchus*) *coecus* Germar, 1824).

Members of the genus *Stomodes* belong to the tribe Otiorhynchini and are indeed similar to *Otiorhynchus*. They differ by the very short and parallel sided rostrum and the pterygia which are not or hardly protruding. Species of *Stomodes*, as far as known, show nocturnal activity, and in the case of *S. gyrosicollis* Boheman, 1843, larvae were found living in roots of Fabaceae (*Medicago*), and adults feeding on leafs of *Medicago* and *Trifolium* (Hoffmann 1950, Dieckmann 1980).

The examination of type specimens of *S. angustatus*, and further specimens from the Peloponnese (see above) allowed determining the specimens from Crete as *Stomodes letzneri* Reitter, 1889 (Fig. 2). Only female specimens are presently known from *S. letzneri*. The genital organs are illustrated in the following for the first time (Figs 3–5). The spiculum has a slender apodeme and a broad oval plate (Fig. 3). The spermatheca has a well-developed long and slender, somewhat angular cornu, and a short ramus and nodulus (Fig. 4). The gonocoxites are elongate, with styli (Fig. 5).

DISCUSSION

Although *Stomodes letzneri* is a flightless and thus not very mobile species, it seems to inhabit both, Peloponnese and Crete. The finds from Crete are about 200 km SSE from the localities Nauplia, Taygetos and Mount Parnon where *S. letzneri* is presently known from (Fig. 6). This is surprising, and at least some differences e.g. in the genital organs could have been expected, if the populations were separated since long ago. But such differences could not be detected. However, as *S. letzneri* might reproduce parthenogenetically – only female specimens are at present known – and the records from Crete are from a cultivated area (an olive grove), an accidental introduction can be strongly supposed. This could happen rather easily via transport of plant material, earth or even construction material. The surroundings of the finding places on Crete are extensively used for agriculture, and farmhouses are spread over the whole area.

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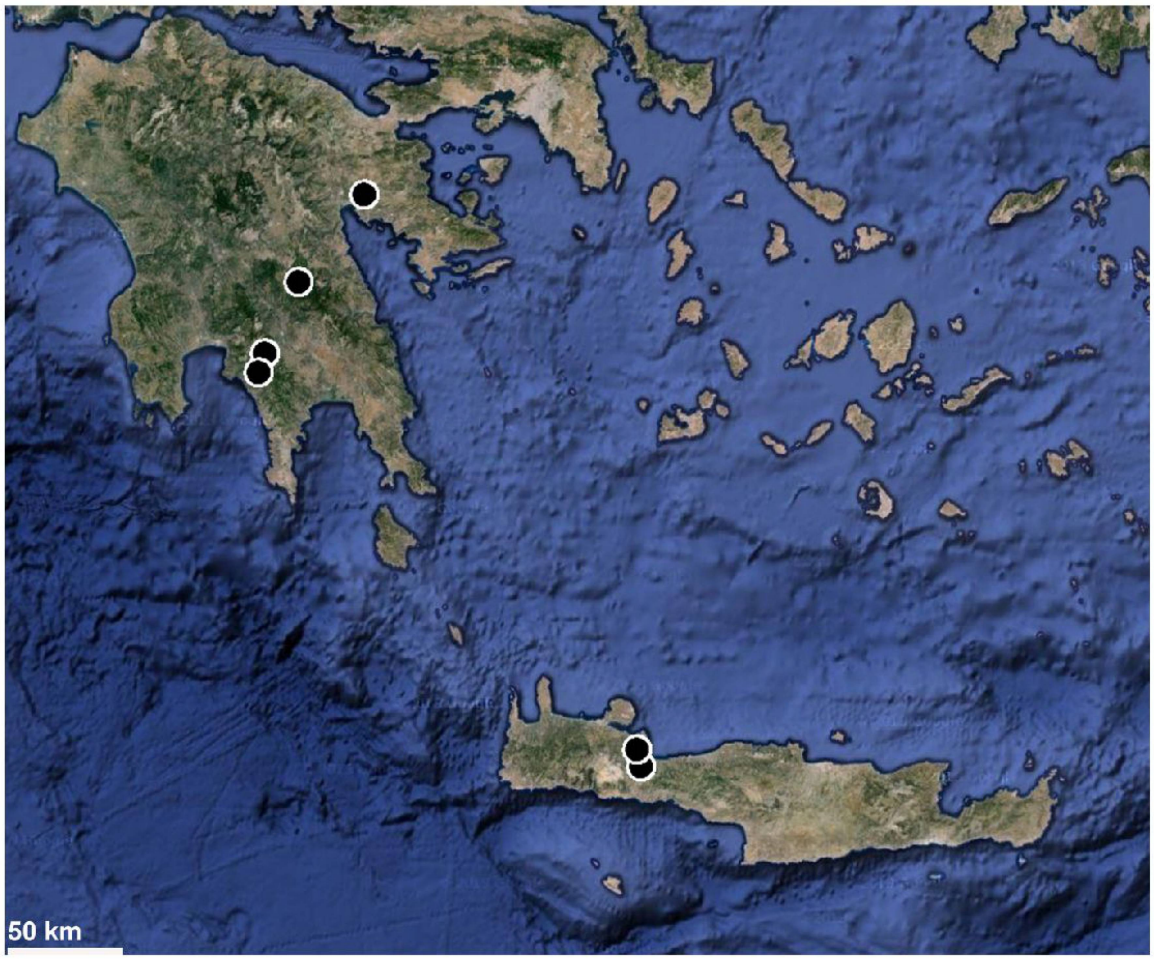

Fig. 6. Map showing records of *Stomodes letzneri* Reitter, 1889 on the Peloponnese and the present ones from Crete (Copyright 2013 Google).

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