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A new species of the genus *Phytoecia* Dejean, 1835 (Coleoptera: Cerambycidae) from Greece

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Abstract

Phytoecia (*Pilemia*) *kruszelnickii* **sp. nov.** from Greece is described. Distinguishing characters from closely related species are given and discussed. Moreover, *Phytoecia* (*Pilemia*) *moreana* Breuning 1943 **stat. nov.** is distinguished as a separate species based on morphological and structural differences. According to the results of our research, *P. kruszelnickii* is distributed exclusively within the continental part of Greece (Thessaly region) and *P. moreana* only occurs in the Peloponnese peninsula. However, the taxonomic division and distribution range of *Phytoecia* (*Pilemia*) *hirsutula* (Frölich, 1793) require further research.

Key words: *Pilemia*, *Phytoecia hirsutula*, *P. kruszelnickii* **sp. nov.**, *P. moreana* **stat. nov.**, Thessaly, Peloponnese peninsula, taxonomy

Introduction

The taxonomic and systematic history of the subgenus *Pilemia* Fairmaire, 1864 was thoroughly presented by Özdikmen & Turgut (2010). According to Danilevsky (2016), this subgenus has 17 taxa including three subspecies. However, the taxonomical status of *Phytoecia* (*Pilemia*) *hirsutula*, which consists of three subspecies: *P.* (*P.*) *hirsutula hirsutula* (Frölich, 1793), *P.* (*P.*) *hirsutula homoiesthes* Ganglbauer, 1888 and *P.* (*P.*) *hirsutula moreana* Breuning, 1943, is complex and includes many synonyms. Recently, for example, based on original descriptions and topotypical material, Sama (2010) stated that *Phytoecia hladilorum* Holzschuh, 2006 and *P. hirsutula* var. *holtzi* Pic, 1952 are synonyms of *P. hirsutula moreana*.

Only three taxa of subgenus *Pilemia* are known from Greece: *P. hirsutula hirsutula*, *P. hirsutula moreana* and *Phytoecia angusterufonotata* Pic, 1952.

As a result of the fieldwork, a new species of the genus *Phytoecia* Dejean, 1835, which belongs to the subgenus *Pilemia*, was collected in Central Greece in 2016. Additionally, one specimen of this species was later found in the collection of Lech Kruszelnicki. In this paper, a series of specimens belonging to the new species are compared to the relative and most similar species.

Materials and methods

The beetles were studied using an Optek SZM7045-J4L microscope at 7–90× magnifications. Photographs of the habitus were taken with a Canon EOS 50D digital camera equipped with a MP-E 65 mm macro lens. The images that were produced were stacked, aligned and combined using ZERENE STACKER software (www.zerenesystems.com).

The holotype is preserved in the entomological collection of the Department of Natural History of the Upper Silesian Museum in Bytom (USMB, Poland) and the rest of the type specimens in the collections of the authors, Lech Kruszelnicki and Marcin Walczak.

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Taxonomy

***Phytoecia* (*Pilemia*) *kruszelnickii* sp. nov.**
(Fig. 1A–1B)

Type material. Holotype: male (Fig. 1A): GREECE, Thessaly: Vlachava (39°46'17.2"N, 21°39'27.5"E) on leaves of *Phlomis samia*, 06.06.2016, 1200 m, Wojciech T. Szczepański leg. **Paratypes**: 7 males, 2 females: same collecting data as the holotype; 24 males, 6 females: GREECE, Thessaly: 2 km SE Vlachava (39°46'08"N, 21°39'27"E), 06.06.2016, Lech Kruszelnicki leg.; 9 males, 5 females: GREECE Thessaly: 2 km SE Vlachava (39°46'08"N, 21°39'27"E), 06.06.2016, Marcin Walczak leg.; 2 males, 1 female: GREECE, Thessaly: 2 km SE Vlachava (39°46'14.2"N 21°39'22.5"E), 06.06.2016, Lech Karpiński leg.; 3 males, 1 female: GREECE, Thessaly: 2 km N Kalambaka (39°43'59"N, 21°38'52"E), 01.06.2016, Lech Kruszelnicki leg.; 1 male: GREECE, Thessaly: Ossae Mts., 10.06.2012, Lech Kruszelnicki leg.; 2 males, 1 female: GREECE, Thessaly: Ossae Mts. (39°50'06.7"N, 22°41'07.6"E), 31.05.2016, Lech Kruszelnicki leg.; 1 male, 1 female: GREECE, Thessaly: Ossae Mts. (39°50'06.7"N, 22°41'07.6"E), 31.05.2016, Wojciech T. Szczepański leg.

Additional material examined: ***Phytoecia* (*P.*) *hirsutula hirsutula*** (Fig. 1C–D)**:** 1 male: SLOVAKIA, Nitriansky kraj: Štúrovo, 26.05.1995; 1 male: SLOVAKIA, Nitriansky kraj: Štúrovo, 6–7.05.1993, Martinů leg.; 1 male: SLOVAKIA, Nitriansky kraj: Štúrovo, 25.05.1996, Martinů leg.; 1 female: SLOVAKIA, Nitriansky kraj: Štúrovo, 08.05.1993, Habarta leg.; 3 males, 1 female: SLOVAKIA, Nitriansky kraj: Štúrovo, 6–29.05.1995, Habarta leg.

***Phytoecia* (*P.*) *moreana* stat. nov.** (Fig. 1E–F)**:** 3 males, 4 females: GREECE, Peloponnese: 34 km S from Tripoli close to the road from Tripoli to Sparti, 4.06.2011, Marcin Walczak leg.

Description. *Morphology.* External morphology of new species is most similar to *P. hirsutula*. Habitus of male holotype is presented in Fig. 1A. Body length from 10 to 14 mm (holotype 12 mm), width from 3.1 to 4.0 mm; females wider and more massive (Fig. 1B). Integument of whole body black, covered by dense recumbent mainly silver-grey and locally (mostly head and stripes on pronotum) by a cream-yellowish pubescence. Population from Ossae Mountain appears to be slightly more yellowish. Additionally, dorsal side of body has individual, long erect dark brown hairs, while ventral side and legs have silver-white hairs. Head, pronotum and elytra are heavily dotted. Shape of male pronotum is subquadrate, slightly wider than higher, while female is more rectangular and transverse. Pronotum has three condensed yellowish longitudinal stripes: one at centre and two on margins of disc. Male antennae are almost as long as elytra, reach ca. to 9/10 of length of elytra; female antennae are shorter, reach ca. to 7/10 of length of elytra. In some places, antennae have single, long erect brown hairs. Scutellum in most cases has a condensed white-yellowish pubescence. Elytra have a rather dense recumbent pubescence, although sometimes locally with hairless areas. Elytra are elongated – in males they taper rearwards from humeri, while in females elytra are more parallel-sided; they expressly start to taper at 2/3 of length of elytra.

Male genitalia. **Aedeagus** (Figs. 2, 3B): approx. 2 mm long, nearly L-shaped in lateral view; median lobe is relatively slender and parallel-sided, suddenly narrows towards apex; **Lateral lobes** (Fig. 4B): approx. 1.6 mm long; the apex of paramere is separated medially along inner margin and rounded; long yellow-brown hairs are concentrated at top of parameres and shorter ones on sides; tegmen slightly narrows towards base, whereas manubrium appears to be relatively wide.

Differential diagnosis. Although the new species is most similar to two related species: *Ph. hirsutula* and *P. moreana*, *P. kruszelnickii* has a considerably larger body size (ca. 1.5 times longer). The body length of the examined species of *P. moreana* and *P. hirsutula* did not exceed 9 mm while the length of *P. kruszelnickii* ranged from 10 to 14 mm. Furthermore, *P. kruszelnickii* has a brighter pubescence compared to the other species. There is also a difference in the length of the antennae of *P. moreana*, which are noticeably longer in both sexes. Therefore, this species can be easily distinguished from the related taxa. The antennae of the males of *P. hirsutula* and *P. kruszelnickii* do not reach the end of the elytra, whereas in the males of *P. moreana*, the antennae usually reach its ends.

Moreover, there are clear differences in the morphology of the lateral lobes. Primarily, *P. kruszelnickii* definitely has the widest base of the manubrium (Fig. 4). The apex of the paramere is also different; compared to the two other species, its external lateral margins are gently rounded toward the tip, while in *P. hirsutula* and *P. moreana* the ends are flatter. The hairs on the parameres are similar to *P. hirsutula*, but are much longer than in the case of *P. moreana* (Fig. 4). The apex of the median lobe is the narrowest (Fig. 3).

Based on the morphology of the genitalia, *P. kruszelnickii* as well as *P. moreana* **stat. nov.** should be treated as separate species. Moreover, the taxonomic division and distribution range of *P. hirsutula*, especially the specimens that are known from the Asia region, require further research.

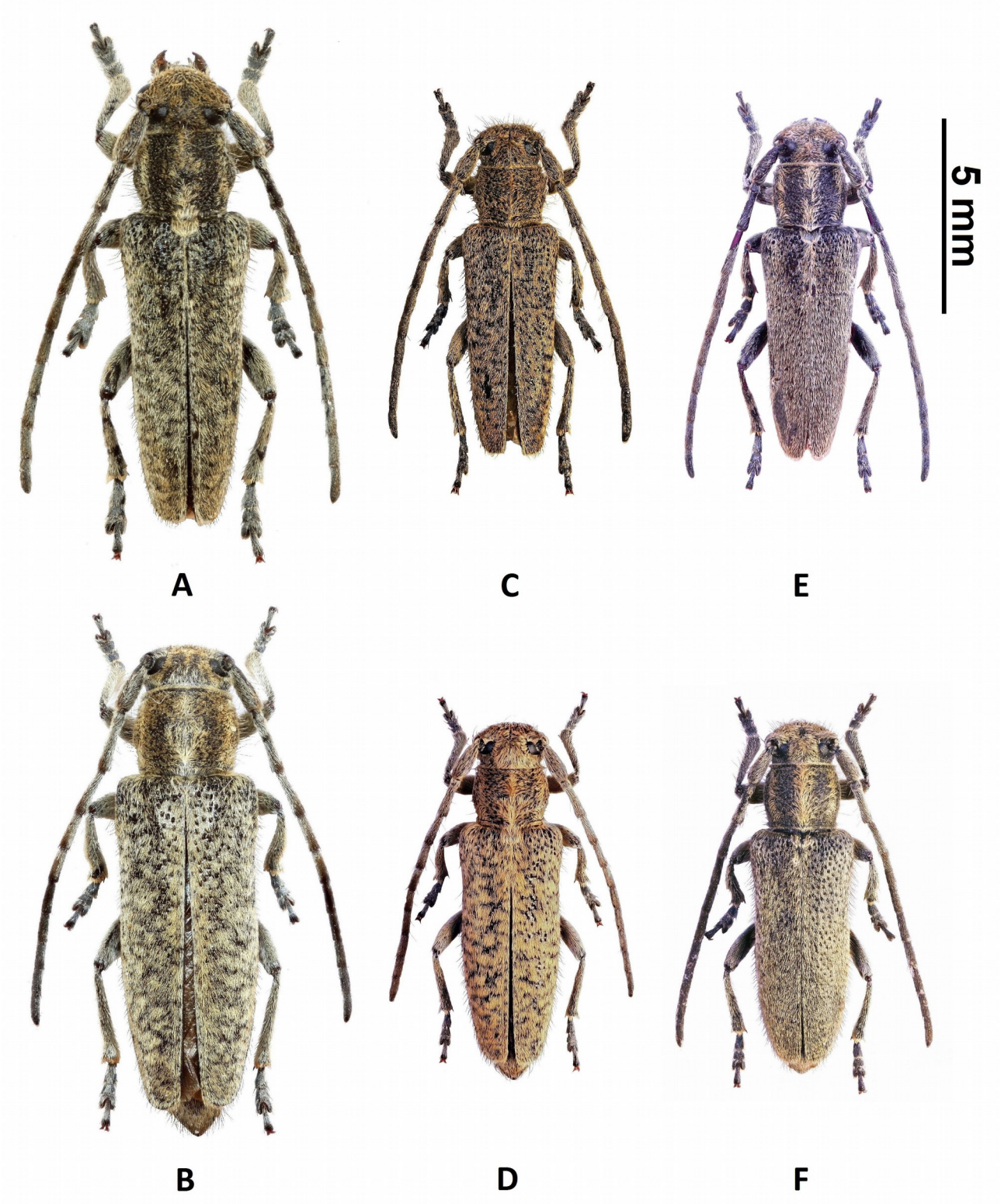

FIGURE 1. Habitus of species *Phytoecia*, of the subgenus *Pilemia*: **A** *P. kruszelnickii* **sp. nov.** (male, holotype); **B** *P. kruszelnickii* **sp. nov.** (female, paratype); **C** *P. hirsutula hirsutula* (male); **D** *P. hirsutula hirsutula* (female); **E** *P. moreana* **stat. nov.** (male); **F** *P. moreana* **stat. nov.** (female).

FIGURE 2. Aedeagus, lateral view: *Phytoecia kruszelnickii* **sp. nov.**

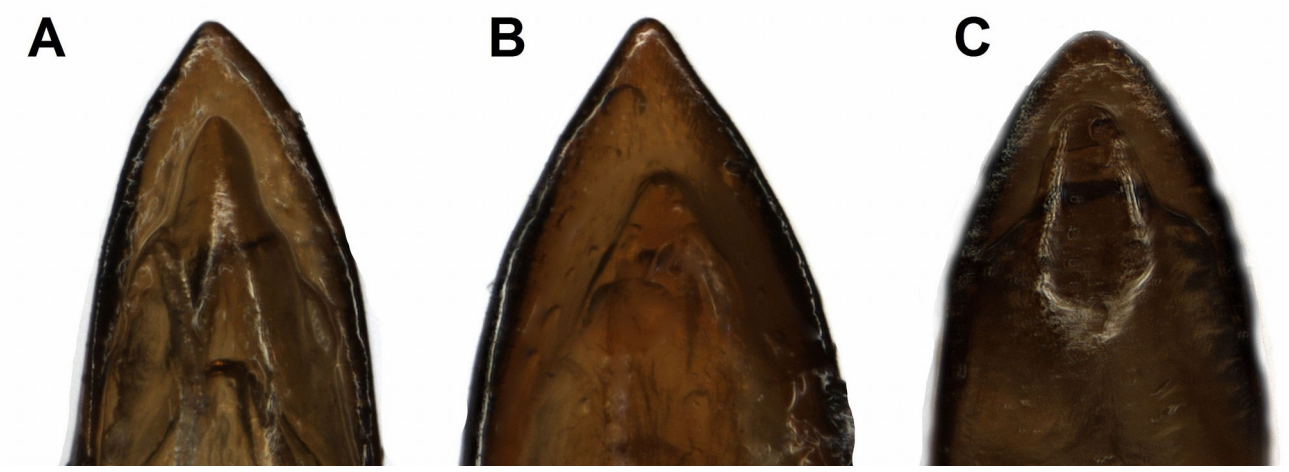

FIGURE 3. Apex of the median lobe, dorsal view: **A** *Phytoecia hirsutula* **B** *P. kruszelnickii* **sp. nov. C** *P. moreana* **stat. nov.**.

Distribution. This species is so far only known from the type material localities in Greece, Thessaly.

Biology. All of the collected specimens where observed on *Phlomis samia* L. (Fig. 5).

Etymology. We are pleased to dedicate this species to our close friend Lech Kruszelnicki who collected most of the type material of the new species and provided some specimens of related species for comparison.

FIGURE 4. Lateral lobes, ventral view: **A** *Phytoecia hirsutula* **B** *P. kruszelnickii* **sp. nov. C** *P. moreana* **stat. nov.**

Discussion

An identification key for the subgenus *Pilemia* is not included in this paper because the subgenus requires further taxonomical revision, including genitallic features of the other species. However, the description of this new species provides sufficient information to allow identification and differentiation from similar species. Morphological details and high-quality figures presented here support identification of the species.

Phytoecia hirsutula is the most widespread taxa among the *Pilemia* subgenus. It was described by Frölich (1793) based on specimens collected in the Austrian Empire, which was one of the largest countries in Central Europe at that time. Therefore, the type locality of this species cannot be precisely defined. The range of this species primarily includes southeast Europe, Asia Minor, the Near East and Transcaucasia (Danilevsky 2016), but its occurrence, especially in Greece, should be verified in light of information presented herein. Other taxa – *P. hirsutula homoiesthes* occurs only in Iran and Turkmenistan (Danilevsky 2016) and *P. moreana* is endemic to Greece (Peloponnese) (Breuning 1943, Holzschuh 2006). Based on current knowledge, *P. kruszelnickii* is also endemic to Greece (Thessaly).

Several host-plant species of *P. hirsutula* are known. Depending on the region where it occurs, the species

develops in different plants, e.g. in Central Europe larvae mainly feed on *Stachys recta*. The species was also recorded on other plants of the Lamiaceae family, e.g. *Eremostachys* spp., *Phlomis* spp., *Salvia* spp. and *Stachys* spp. (Rejzek *et al.* 2001). *Phytoecia kruszelnickii* develops in *Phlomis samia* but also probably in other species. The host plants of *P. moreana* remain unknown.

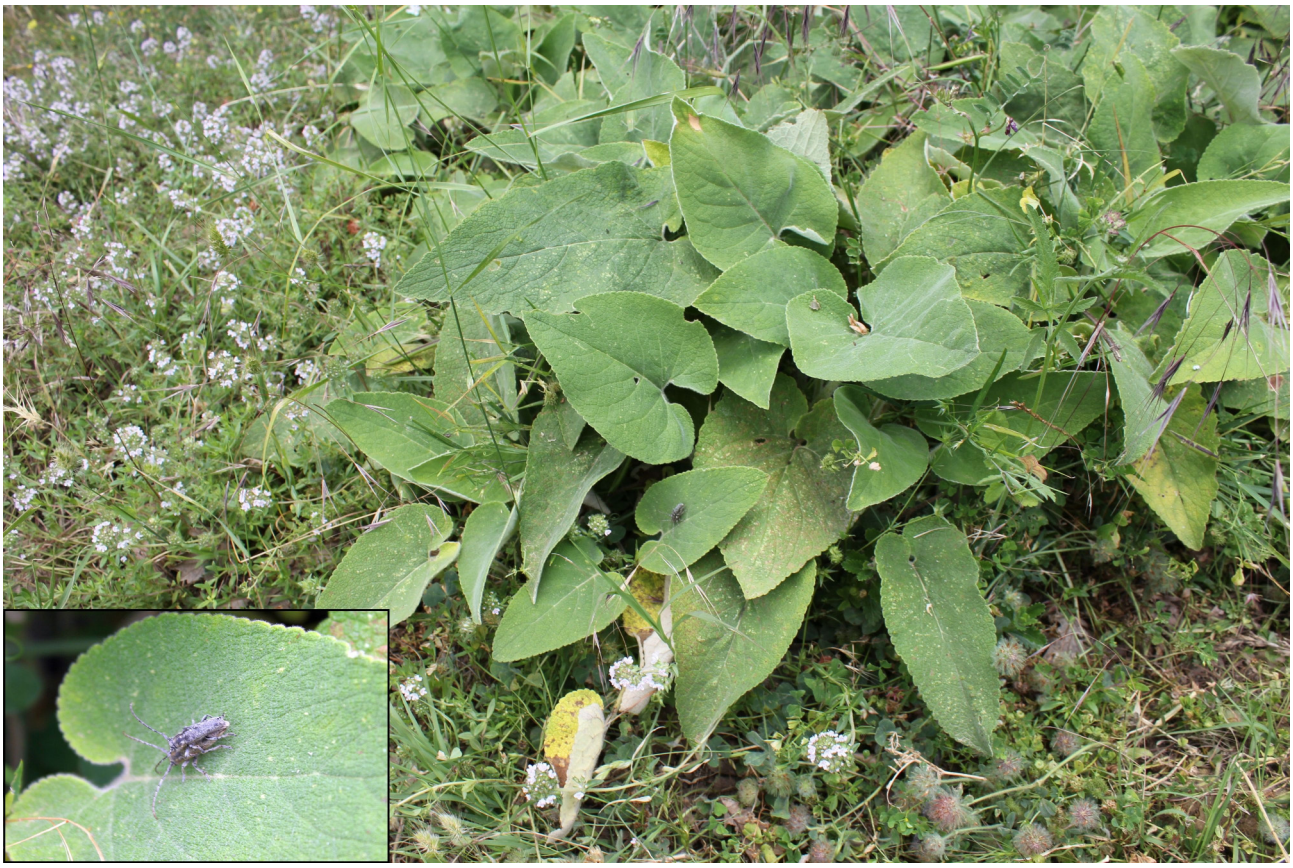

FIGURE 5. Specimens of *Phytoecia kruszelnickii* **sp. nov.** in copula on their host plant *Phlomis samia* L.

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