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SHORT COMMUNICATION

Takahashia japonica (Homoptera: Coccinea), a new adventive species for eastern Europe

Takahashia japonica (Homoptera: Coccinea) – новый адвентивный вид для Восточной Европы

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Abstract. The adventive species of scale insects *Takahashia japonica* (Cockerell, 1896) is recorded for the first time from eastern Europe, based on material collected on the Crimean Peninsula from the branches of *Carpinus orientalis*. The new drawing made in the modern technique and a brief morphological redescription of the adult female of the species is provided.

Резюме. Адвентивный вид кокцид *Takahashia japonica* (Cockerell, 1896) впервые отмечается для Восточной Европы на основании материала, собранного в Крыму с ветвей *Carpinus orientalis*. Заметка сопровождается новым, выполненным в современной технике исполнения, рисунком и кратким морфологическим переописанием взрослой самки обсуждаемого вида.

Key words: scale insects, soft scales, morphology, taxonomy, Crimea, adventive species, first record

Ключевые слова: кокциды, ложнощитовки, морфология, таксономия, Крым, адвентивный вид, новая находка

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The natural range of *Takahashia japonica* (Cockerell, 1896) is limited to the subtropical forests of Southeast Asia (northern India, southern China, southern Korea, and Japan). In recent years, the species was also noted as adventive in some countries of the western and central Europe (United Kingdom, Italy, and Croatia). The reader can easily found all appropriate references and the comprehensive overview of this invasion in the article of Limonta et al. (2022). Until now, there have been no any reports on the appearance of *T. japonica* in eastern Europe, any Asian regions of Russia, Transcaucasia, Central Asia or any oth-

er countries other than those mentioned above. Here we report the first record of *T. japonica* in eastern Europe and provide a brief redescription of the species with a new drawing that will be useful for clear identification of the species.

A large population of *T.japonica* was observed by the agronomist P. Gutovsky on the Crimean Peninsula in the Balaklava District of Sevastopol near the village of Ternovka, on the branches of *Carpinus orientalis* in July 2022 (Fig. 2). All prepared material (three adult females on three separate slides) is deposited in the collection of the Zoological Institute of the Russian Academy of Sciences,



Fig. 1. Takahashia japonica, microscopic characters of adult female.



Fig. 2. *Takahashia japonica*, natural appearance of mature adult females with wax ovisacs (photo by Ya.A. Volkov).

St Petersburg, Russia (ZIN RAS). Dry and ethanol material is deposited in the National Research Institute of Viticulture and Winemaking "Magarach", Yalta, Republic of Crimea. In addition, we examined the material from Japan (Matsuyama) collected by T. Tachikawa on *Zelkova serrata* on 25 June 1962 (ZIN RAS). The method of preparation and study of scale insects was described by the first author earlier, e.g. Gavrilov-Zimin et al. (2021). The systematics of higher taxa used here follows Gavrilov-Zimin et al. (2021).

Order Homoptera

Suborder Coccinea

Family Coccidae

Genus Takahashia Cockerell, 1896

Takahashia japonica (Cockerell, 1896) (Figs 1 & 2)

Description of adult female. Body broadly oval, up to 5 mm long in mature females, bearing unusually long curved wax ovisac, that being 3– 4 times (sometimes more) as long as body. Antennae short, 8-segmented, about 250 μ m long. Legs comparatively small, slightly longer than antennae, but with all segments present, without tibio-tarsal articulation; claw without a denticle. Anal apparatus usual for soft scales. Multilocular pores, each about 12 μ m in diameter, numerous on venter, forming transverse bands on abdominal and tho-

racic sternites and scattered in submedial zone of abdomen. Few quinquelocular pores, each about 8 µm in diameter, forming bands in stigmatic clefts. Preopercular pores absent. Minute discoidal pores, each about 5 µm in diameter, scattered on dorsum. Tubular ducts of two sizes: smaller ducts, each about 10-12 µm long, numerous, scattered on all dorsal surface of body; larger ones, each about 25 µm long, numerous in submarginal and submedial zones of venter (see exact distribution on Fig. 1). Microducts, each about 8 µm long, forming wide submarginal band along margin of ventral surface of body. Conical setae forming row along all body margin; stigmatic conical setae (three setae in each stigmatic cleft) shorter and slightly thicker than marginal setae. Small and thin conical setae scattered on all dorsal surface of body. Sparse flagellate setae present on ventral surface of body.

Note. Takahashia japonica can be easily distinguished from all other species of soft scale insects known in eastern Europe by its enormously long ovisac which is 3–4 times (sometimes more) as long as the female body. Similar, but shorter ovisacs are known in different species of the tribe Pulvinariini (subfamily Coccinae), for example, in the widely distributed Pulvinaria floccifera (Westwood, 1870). However, microscopic characters of T. japonica are more similar to those of the representatives of the subfamily Filippiinae: the presence of numerous dorsal tubular ducts, only one size of ventral tubular ducts, and the absence of tibio-tarsal articulation. For more detail information and an identification key for eastern European species of soft scales see, for example, Borchsenius (1957) and Danzig (1964).

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