

On an Introduced Weevil *Polydrusus formosus* (Mayer) (Coleoptera, Curculionidae: Entiminae) in the Summer Garden, St. Petersburg

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Abstract—In the summer of 2015, *Polydrusus formosus* was found in the Summer Garden, St. Petersburg on *Tilia cordata* in the trellises and berceau restored in 2011. This weevil was known in the European part of the former USSR only in Moldova and Crimea. The finding of 6 individuals of *Polydrusus formosus* only on the linden trellises may be due to an unintended introduction of the weevils (probably only a single fertilized female) with the plants from Germany and maintenance of the population in the Summer Garden for already five years.

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During a planned inspection of the condition of the stand in the Summer Garden on the 20th July 2015, E.A. Zhukova found a single specimen of the weevil *Polydrusus formosus* (Mayer, 1779) on a linden in the trellises (2 m high) situated along the Lebyazhiya Kanavka near the parterre. Two individuals of another weevil, *Phyllobius arborator* (Herbst, 1797), one of the commonest species in St. Petersburg frequently occurring on small-leaved trees in urban plantings and forests, was found on the lindens in the trellises in June. *Polydrusus formosus* had been previously known in Russia only from the Crimea; there is no material from the territory of Ukraine in the collection of the Zoological Institute, Russian Academy of Sciences, St. Petersburg. The weevil is widely distributed in Central and Southern Europe, being rather common in Moldova but not known from Belarus (Yunakov, 2013).

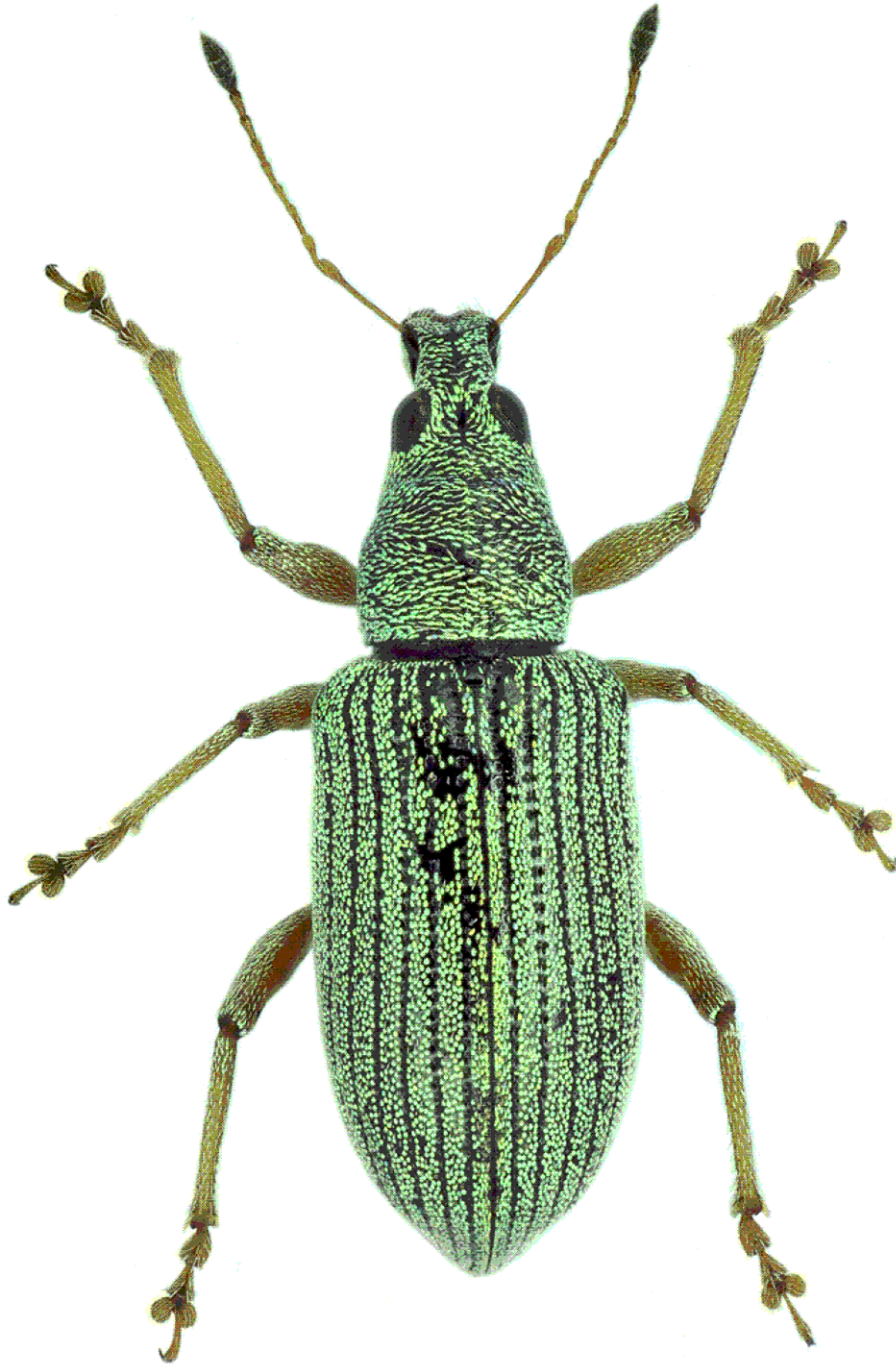
Polydrusus formosus (Mayer, 1779) (figure)

= *P. sericeus* Schaller, 1783; = *P. thalassinus* Gyllenhal, 1834.

The beetles are very similar to *Phyllobius arborator* in size but clearly differ in the uniformly yellow legs with slender femora each bearing an inconspicuous tiny tooth (in *Ph. arborator*, the femora are always darker than the tibiae, thick, all armed with a very large sharp tooth), in the absence of erect hairs on the

body, except for the inner margin of the hind tibia in the male (in *Ph. arborator*, these hairs are dense and long on the dorsal side of the body and on the legs), in large and moderately convex eyes (the longitudinal diameter of the eye distinctly exceeds the distance between the inner margins of the eyes; in *Ph. arborator*, the eyes are strongly convex and the distance between their inner margins considerably exceeds the longitudinal diameter of the eye), in a short antennal scape with the apex not reaching the posterior margins of the eyes, and in the narrow antennal scrobes appearing in dorsal view as narrow slits and continuing on the sides of the rostrum to its lower (ventral) surface. *Polydrusus formosus* differs from *P. mollis* Stroem (the largest *Polydrusus* species in Leningrad Province) in a distinctly narrower body, very dense and fine punctuation of the pronotum, and in green oval scales densely covering the body dorsally; in *P. mollis*, the body is wide, the elytra are convex dorsally and distinctly rounded laterally, the punctures on the pronotum are large and deep, nearly pit-shaped, and the body is rather sparsely covered dorsally with narrow lanceolate and frequently golden (in *P. formosus* green) scales.

In connection with the unexpected findings, we investigated the arboreal plantings in the Summer Garden on 27.VII.2015 and collected additionally five specimens of *P. formosus* and none of the other wee-



Polydrusus formosus Mayer.

vils of the subfamily Entiminae. All the beetles were collected by beating branches of the small-leaved linden (*Tilia cordata* Mill.) from the trellises reaching 2 and 3 m in height and growing around the perimeter of the garden along the Neva and Fontanka rivers and in a berceau (a parkway with a wooden frame and with arched lindens set at both sides). These records show that the adults of *P. formosus* emerged in the territory

of the Summer Garden at least in 2015, as it is difficult to believe that a considerable number of adults of these rather large-sized weevils were introduced and then occur exclusively on lindens. This tree is not listed among the host plants of *P. formosus* in Europe (Dieckmann, 1980), but the most probable cause of the occurrence of these weevils in the Summer Garden is planting of 12928 young lindens bought in

Germany, which was performed in 2011 for reconstruction of the trellises (Lukmazova and Cherdantseva, 2012).

Although a considerable damage of *Salix viminalis* L. by *Polydrusus formosus* has been reported (Dieckmann, 1980, for *P. sericeus*), this weevil is not among the dangerous pests of wood plantings. The occurrence of this beetle in the Summer Garden and its living on lindens can become the subject of interesting observations over development of this unintended introduction not only because of a considerable remoteness from its main distribution range and a very small size of the new population but also because of feeding of the beetles in the Summer Garden on a unusual host. First of all, it is necessary to monitor the population and to estimate the possibility of the growth of its abundance to such values at which the weevil is capable of injuring the plantings.

When attempting to find *P. formosus* we checked on 27.VII.2015 several *Tilia cordata* trees of various ages in the nearby Mikhailovskii Garden and Engineers' Square but found no weevils. Only a few branches of mature linden trees were situated low enough to enable their beating onto a sheet; therefore, effective monitoring of the old trees will be possible in subsequent years only with use of special lifting devices.

It is noteworthy that during our inspection of the trees in the gardens of the Russian Museum, two other coleopteran species rare to St. Petersburg and Leningrad Province were also found: on 27.VII.2015 we collected three specimens of the ladybird *Calvia decemguttata* L. (Coleoptera, Coccinellidae) in the Summer and Mikhailovskii gardens and one specimen of the leaf beetle *Zeugophora flavicollis* Marsh. (Coleoptera, Chrysomelidae) on a balsam poplar (*Populus balsamifera* L.) in the Engineers' Square. The ladybird had not been known in the fauna of St. Petersburg and Leningrad Province till 1965 (Semianov, 1965), and in the collections of the Zoological Institute of the Russian Academy of Sciences it was represented from St. Petersburg by a single specimen collected in the Summer Garden on 31.VII.2004 by M.B. Korotyaev. A single beetle of *Calvia decemguttata* was found on 30.VII.2005 by V.N. Prasolov in Osinovtsy Village of Vsevolozhsk District, Leningrad Province. The material from the European part of Russia in the collection of the Zoological Institute is very scarce; in addition to

the abovementioned specimens from St. Petersburg and Leningrad Province, there is only one specimen collected by the first author during the student's summer field practice in the environs of Zvenigorod (Moscow Province) on 6.VI.1970 and two specimens from Chuvashia donated in 2015 by L.V. Egorov (Cheboksary). *Calvia decemguttata* was reported as a species common in the south of Central European Russia (Lipetsk Prov.: Tsurikov, 2009) and in the Middle Volga Area (Isaev and Egorov, 2006). The leaf beetle *Zeugophora flavicollis* was known from St. Petersburg based on a single collection made by P.V. Romantsov on 12.VIII.1997, also from poplar (Romantsov, 2007). These records show that monitoring of insect populations in the urban plantings of St. Petersburg and the suburbs can be of interest not only for controlling the condition and organizing the protection of the green plantings but also for more complete investigations of the nature of this region.

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