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Megabruchidius tonkineus (Pic, 1904) (Coleoptera: Bruchidae) first found in Hungary

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Abstract: Adults of *Megabruchidius tonkineus* (Pic, 1904) emerged in the laboratory from pods of *Gleditsia triacanthos* collected in January and in October 2001 at the very centre of Budapest. It is likely that this tropical species is able to over-winter outdoors at least in urban surroundings of Hungary. The possible economic importance is discussed.

Key words: Acanthoscelidini, *Gleditsia triacanthos*, acclimation

This bruchid species has been described by M. Pic (1904) as *Laria tonkinea* after adults collected in "Tonkin" that was at that time a French colony (today the Northern part of Viet-nam) with the capital city of Ha-noi. The species was later named by Wendt (1980) as *Bruchidius tonkineus,* finally Borowiec (1984) redescribed and transferred it to the genus *Megabruchidius* Borowiec (1984) belonging to the tribe *Acanthoscelidini.*

Data on distribution and host plants of *M. tonkineus* are almost non-existent. Pic (1904) briefly remarked that it was "common" in Tonkin, however, he provided no data on its biology. Wendt (1980) reported that adults were found in "Karl-Marx Stadt" (= Chemnitz), Germany, in a hotel room where they were thought to had been introduced by "the white seeds of an unknown *Phaseolus* species" originating from Vietnam. Wendt supposed that this tropical species would not be able to acclimate in Germany. Borowiec (1984: 126) examined "two males and two females, Vietnam, Co-loa, 20 km NE of Ha-noi, 7 May 1966, leg. R. Bieławski and B. Pisarski, coll. Institute of Zoology, Polish Academy of Sciences, Warsaw, and author's collection." No other published data on this species are known to us. The main abstracting journal of agricultural entomology issued monthly since 1915, the Review of Applied Entomology, have not mentioned any publication on this species so far.

The third author received in January 2002 specimens of *M. tonkineus* from Dr Philippe Ponel (Institut Méditerranéen d'Écologie et de Paléoécologie, Univ. Mar-

seille) that were reared from seeds of *G. triacanthos* grown at the university campus. The third author has seen also one specimen of *M. tonkineus* from Yunnan (China) and inspected in the collection of the Muséum Nationale d'Histoire Naturelle (Paris) one specimen of the closely related species *M. tsinensis* (Pic, 1923), comb. nov., from China that was reared from "*Gleditschia*." Morimoto (1990) mentions a third species, *M. dorsalis* (Fahraeus, 1839), from *G. japonica* Miq.

Considering the tropical origin of this species, it was surprising to find that it infested the pods of *Gleditsia triacanthos* L. (Leguminosae) in Hungary outdoors. This tree species was introduced at least 100 years ago from the USA where it is autochthonous. The majority of *Gleditsia* species occurs in Asia, from India to Japan and the Philippine Islands and all *Gleditsia* species are very much alike botanically (Polhill & Raven 1981). It is, therefore, not surprising that the East Asian bruchid species accepted the North American congeneric tree species as host in Europe. It remains an enigma, however, how the bruchid has been introduced to Hungary?

The pods, that are 20 to 40 cm long with numerous bean-size brown seeds, were first collected on 20th January 2001 under a single *G. triacanthos* tree at the campus of the Eötvös Loránd University situated in the very heart of the Inner City of Budapest (8th district, Múzeum körút 4.). The pods were transferred to the laboratory of the Plant Protection Institute. The first adults emerging from the pods after a few weeks were sent to the third author for identification. Pods collected at the same site on 10th to 20th October 2001 were also found infested. Thus, this bruchid population survived through the winter of 2000–2001 in the pods (seeds) on or under the *Gleditsia* tree at the university campus, although between 15th October 2000 and 31st March 2001 the air temperature reached an absolute minimum of –8.8°C and the minimum of the daily mean temperature was –6.6°C! Furthermore, the daily minimum was during 38 days and the daily mean temperature during 21 days under 0°C! (The temperature data were provided by a station of the National Meteorological Service situated in urban surrounding that is similar to the university campus.) This means that some ontogenetic stage or stages of *M. tonkineus* over-wintered under such meteorological conditions. The data of collection and the laboratory observations on the bruchid's behaviour indicate that it can multiply continuously during the warm season in the fruits of *G. triacanthos.* Namely, some fruits always remain on the trees until the next year, so the females can find them there. Furthermore, as the adults are strong flyers they can easily find also the fallen fruits under the trees or on neighbouring trees.

In conclusion, it seems very likely that this population of *M. tonkineus* has become more or less adapted at least to the microclimate of Hungary's urban areas. If

it turned out to develop also in the seeds of some Central European legume crops, it might become a new pest species especially of stored products.

As the females lay eggs readily on the seeds of *G. triacanthos* in the laboratory and the larvae develop normally, we were able to establish a continuous laboratory culture. Glass cylinders covered with gauze serve as rearing containers and filter paper strips soaked with honey water provide food for the adults. In order to study the practically unknown biology of the species and to estimate its presumable economic importance, we started laboratory experiments to find out (1) the seeds of which legume species are accepted by the females for oviposition, (2) which legumes are suitable for larval development, (3) the duration of ontogenesis as a function of temperature, and (4) whether diapause occurs?

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