The problem of alien species penetration into the territory of Europe attracts more and more attention, and the number of publications to advertise species increases significantly every year (Orlova-Benkovska, 2017) are devoted.

The active penetration into Europe the seed beetles *Megabruchidius dorsalis* (Fåhreus, 1839) and *M. tonkineus* (Pic, 1904) (Chrysomelidae: Bruchinae) from Southeast Asia as native range from the end of the 20th—beginning of the 21st century is dated. For the first time for Europe, for Ukraine, an East Asian seed beetles indicated by V. V. Martynov and T. V. Nikulina in 2016). Already in 2016, the Asian grain was found in all districts of the Donetsk Region (Avdeyevka) (Martynov, Nikulina, 2014). Later, in 2015, it was registered in Kyiv (Pic, 1904) (Chrysomelidae: Bruchinae) — a new adventive species, honey locust, Kharkiv Region, Ukraine.

In connection with this, we will not duplicate this information.

For the first time for Ukraine, an East Asian seed beetles indicated by V. V. Martynov and T. V. Nikulina in 2014 from the Donetsk Region (Avdeyevka) (Martynov, Nikulina, 2014). Later, in 2015, it was registered in Kyiv (Fursov, Nazarenko, 2015). Already in 2016, the Asian grain was found in all districts of the Donetsk Region (Martynov, Nikulina, 2016).

Information about this species for the Kharkiv Region is missing. Also, almost nothing is known about the biology of *M. dorsalis* in a new region. It is known that in Europe its larvae feed by the seeds of *Gleditsia triacanthos* in the arboretum of the Dokuchaiev Kharkiv National Agrarian University. The seed beetles colonized in 52% of the beans harvested in the current year and in 81% of the beans harvested in the previous years. 5 figs., 1 tab., 9 refs.

**Key words:** seed beetles, *Megabruchidius dorsalis*, adventive species, honey locust, Kharkiv Region, Ukraine.
We examined collected beans, registered the number of exit holes and developed seeds, then cut the beans, collected living insects into Petri dishes, counted females, males, larvae and pupae.

**Results and discussion.** The initial examination of survey of honey locust beans showed that they had round exit holes, as is characteristic for seed beetles.

Since the beans of honey locust are poisonous to most insects due to the presence of 5-hydroxypipecolinic acid and triterpenoid saponins (György, 2007), it was obvious that they were damaged by seed beetles of the genus *Megabruchidius*, which host is honey locust. Cutting of the beans revealed adults, larvae, and pupae of *M. dorsalis* have been found (Fig. 1–5).

**Fig. 1.** *Megabruchidius dorsalis*, larva of the last instar (photo by M. O. Filatov).

**Fig. 2.** *Megabruchidius dorsalis*, larva of the last instar in *Gleditsia* seed (photo by M. O. Filatov).

**Fig. 3.** *Megabruchidius dorsalis*, pupa (photo by M. O. Filatov).
Megabruchidius dorsalis (Fåhreus, 1839) (Coleoptera: Chrysomelidae: Bruchinae) is a new adventive species in the Kharkiv Region (Ukraine).

Megabruchidius dorsalis developed in 52% of the beans harvested in the current year (collected from the trees in 2018). One or two specimens developed in one bean, no more than one larva in one seed (table).

As one can see from the Table, the beans, collected on the ground, were more infested — 81%. In such beans, one to fifteen exit holes were found, and 19.1% of seeds were infested on average. It is obvious, that over three exit holes per bean is explained by the fact that the bruchid oviposits on the beans harvested in the previous years. In the article devoted to biology of the relative species M. tonkineus (Pic, 1904) (György, 2007), it is also mentioned, that bruchids often oviposit into the beans harvested in the previous years, lying on the ground. Counting the number of beans with over three exit holes we found out, that about 68% beans were infested repeatedly.

Table 1. Infestation of honey locust beans by Megabruchidius dorsalis in the arboretum of the Dokuchaiev Kharkiv National Agrarian University, 31.10.2018

| Amount of inspected beans, specimens | Average number of seeds in the bean, specimens | Amount of infested beans, specimens/% | Average number of infested seeds in the bean, specimens/% | M. dorsalis, specimens |
|-------------------------------------|-----------------------------------------------|--------------------------------------|----------------------------------------------------------|------------------------|
| Beans collected from the tree       |                                               |                                      |                                                          |                        |
| 100                                 | 21.1                                          | 52/52                                | 1.5/7.1                                                  | 3 0 0                   |
| Beans collected from the ground     |                                               |                                      |                                                          |                        |
| 100                                 | 19.9                                          | 81/81                                | 3.8/19.1                                                 | 5 2 11                 |
In the period from October 31 to November 20, five beetles emerged from beans that were kept indoors at a temperature of + 13 °C. The activity of beetles, the presence of larvae and pupae in late autumn indicates that acclimatization, adaptation to the weather conditions of the new region, the life cycle, including diapause, are still in the formative stage.

Of course, *M. dorsalis* as an adventive species needs further examination. Particular attention should be paid to its biology, which remains unexamined in Europe.

**Acknowledgements.** Authors would like to thank Dr. M. O. Filatov (Dokuchaiev Kharkiv National Agrarian University) and B. A. Kolomoets (Agrogen Novo Ltd.) for assistance in photographing insects.

**REFERENCES**

Martynov, V. V., Nikulina, T. V. 2016. Новые инвазивные насекомые-фитофаги в лесах и искусственных лесонасаждениях Донбасса. Кавказский энтомологический бюллетень, 12(1), 41–51. DOI: 10.23885/1814-3326-2016-12-1-41-51.

Orlova-Belyanskaya, M. Ya. 2017. Основные закономерности инвазионного процесса у жесткокрылых (Coleoptera) европейской части России. Российский журнал биологических инвазий, 1, 35–56. URL: https://elibrary.ru/item.asp?id=29035786.

Temrashew, I. N., Zaliva, B. G. 2016. Megabruchidius dorsalis Führer, 1839 — инвазивный вид в видах зерновок (Coleoptera, Chrysomelidae, Bruchinae) Казахстана. Евразийский энтомологический журнал, 15(2), 139–142. URL: https://elibrary.ru/item.asp?id=27397987.

György, Z. 2007. To the biology of the honey locust seed beetle, *Megabruchidius tonkineus* (Pic, 1904) (Coleoptera: Chrysomelidae: Bruchinae). *Folia Entomologica Hungarica*, 68, 89–96. URL: http://publication.nhmus.hu/pdf/folentom/FoliaEntHung_2007_Vol_68_89.pdf.

Fursov, V., Nazarenko, V. 2015. Invasive species *Megabruchidius dorsalis* (Coleoptera, Chrysomelidae, Bruchinae) — a new record in the fauna of Ukraine. *Vestnik Zoologii*, 49(3), 286. DOI: 10.1515/vzoo-2015-0029.

Korotyaev, B. A. 2011. On invasion of an East Asian seed beetle, *Megabruchidius tonkineus* (Pic) (Coleoptera, Bruchidae), developing in *Gleditsia* seeds, in the northwest Caucasus. *Entomological Review*, 91(9), 1167–1169. DOI: 10.1134/S0013873811090089.

Kurtek, I., Zahirović, Ž., Turić, N., Vrućina, I., Vignjević, G., Mrdić, E., Sudarić Bogojević, M. 2017. First record of the invasive seed beetle *Megabruchidius tonkineus* (Coleoptera, Chrysomelidae, Bruchinae) in Croatia. *Natura Croatica*, 26(1), 109–115. DOI: 10.20302/NC.2017.26.9.

Martynov, V. V., Nikulina, T. V. 2014. The first finding of invasive species *Megabruchidius dorsalis* (Coleoptera, Chrysomelidae, Bruchinae) in the fauna of Ukraine. *Vestnik Zoologii*, 48(3), 286. DOI: 10.2478/vzoo-2014-0034.

Migliaccio, E., Zampetti, M. F. 1989. *Megabruchidius dorsalis* e *Acanthoscelides pallidipennis*, specie noue per la fauna italiana (Coleoptera, Bruchidae). *Bollettino dell’Associazione Romana di Entomologia*, 43, 63–69.

Ruta, R., Jalszyński, P., Wanat, M. 2017. *Megabruchidius dorsalis* (Fàhreaus, 1839) — inwazyjny strąkowiec nowy dla Polski (Coleoptera: Chrysomelidae: Bruchinae). *Wiadomości Entomologiczne*, 36(3), 162–166. URL: http://pte.au.poznan.pl/we/2017/36-21-Ruta-i-in.pdf.