

Short communication

OPHRAELLA COMMUNA (COLEOPTERA: CHRYSOMELIDAE) HAS ARRIVED IN SERBIA

OLIVERA PETROVIĆ-ÖBRADOVIĆ, DRAGICA SMILJANIĆ and MILICA ĆKRKIĆ MATIJEVIĆ

University of Belgrade – Faculty of Agriculture, Nemanjina 6, 11080 Belgrade – Zemun, Serbia
E-mail: petrovic@agrif.bg.ac.rs

Ophraella communa LeSage, 1986 is a North American Galerucinae beetle (Coleoptera: Chrysomelidae) that has successfully spread through Europe in recent years. It is a natural enemy and a potential biocontrol agent of common ragweed *Ambrosia artemisiifolia* L., an important invasive weed in Europe, both for agricultural crops and public health (Vrbničanin, *et al.*, 2008). In Europe, *O. communa* was first detected in Italy (Boriani *et al.*, 2013), after which it has spread to Switzerland (Müller-Schärer *et al.*, 2014), Slovenia (Seljak, 2017) and Croatia (Zadravec *et al.*, 2019). Here we report the first record of *O. communa* from Serbia.

Ambrosia artemisiifolia L. (Asteraceae) plants were surveyed during 2020 in 8 localities in Serbia (Fruška Gora – Ležimir, Šid, Sremska Mitrovica, Bela Crkva, Belgrade, Donji Milanovac, Valjevo – Gornja Bukovica, Stara Planina – Pakleštica). Plants were surveyed in the fields, samples were gathered and then examined in the laboratory.

Ophraella communa was detected in only one locality, Belgrade – Zemun, 44°50'55"N, 20°22'16"E, 92 m a.s.l., 05.10.2020. On a group of about ten plants, a total of 30 adults, 10 larvae of different stages, several egg clusters (up to 25 eggs) and some cocoons were found (Fig.1A, 1B, 1C). The leaves of infested plants had been damaged and partially dried (Fig.1D). Insects were gathered using an entomological net, as well as by hand. Some of the specimens were pinned for dry collection, some preserved in 70% ethanol. A number of specimens are being reared in the laboratory, in glass cylinders covered with nets and on potted *A. artemisiifolia* plants. The species was identified using the identification key to species of the genus *Ophraella* Wilcox, 1965 (LeSage, 1986). All preserved specimens are deposited in the collection of the Department of Entomology and Agricultural Zoology, University of Belgrade – Faculty of Agriculture.

Ophraella communa can easily be distinguished from other congeneric taxa by the moderately dense pubescence of the elytra and a specific elytral pattern of stripes (vittae), as recorded by LeSage (1986). Subsutural and submarginal vittae are usually joined at the elytral apex, the discal vitta is incomplete, mostly visible in the apical half of each elytron, and a supplementary vitta is about half the length of elytra, starting from its base (LeSage, 1986).

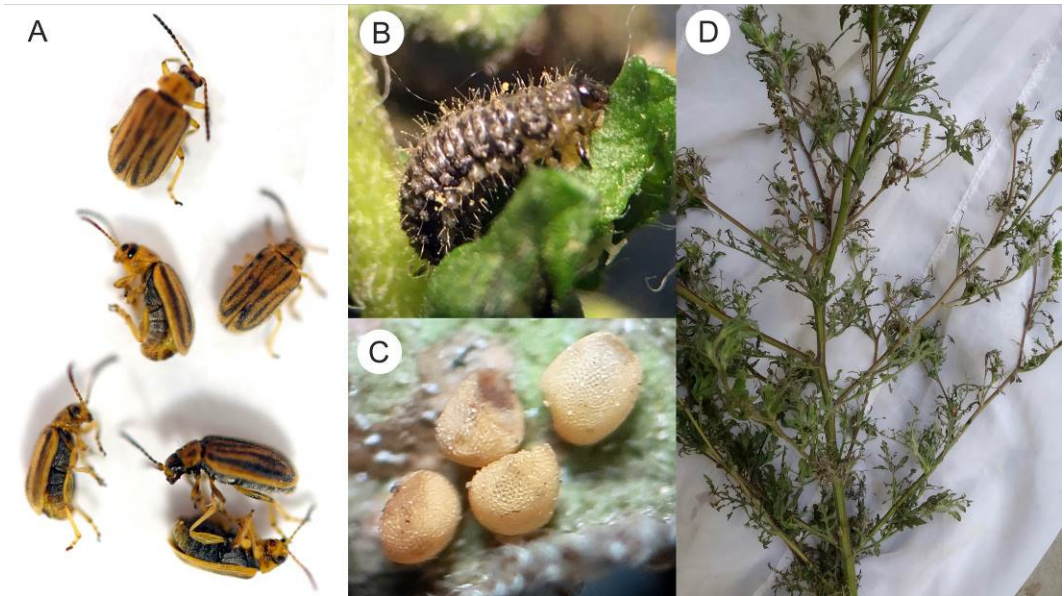


Figure 1. *Ophraella communa*: A – adults; B – larva; C – empty chorions; D – feeding damages on *Ambrosia artemisiifolia*.

Body length in adults is ~ 4 mm, width ~ 2 mm, with males being slightly smaller than females. Ground color is yellowish-ocher, punctuation is coarse (Fig.1A). On the head, there is a dark spot forming a black band to the back of the head (shaped like an inverted letter “T”). Eyes are dark, first five antennal segments are yellowish-brown, the remaining six are dark brown. There are three dark spots on the pronotum. Legs are yellowish, last tarsal segment and claws are dark brown.

Larvae are ~ 6 mm long, brownish-dark in color, with tubercles and capitate dorsal setae (Fig.1B). Head capsule can be brown to black, depending on the instar. Legs are also dark. Eggs are lemon-shaped, bright yellowish, turning yellow-orange within a few hours, with hexagonal microsculpture on the chorion (Fig.1C). They are in clusters of usually up to 25 eggs. The pupa is formed in a silky, loosely woven cocoon.

Ophraella communa is an oligophagous beetle, feeding on several members of the Ambrosiinae subtribe (LeSage, 1986). Its preferred host is *A. artemisiifolia*, but there is an ongoing discussion about whether it poses a threat to cultivated *Helianthus annuus* L. (Palmer & Goeden, 1991, Dernovici *et al.*, 2006). It is successfully used as a biological control agent against *A. artemisiifolia* in China, but the risks of damage to sunflower are not yet known (Müller-Schärer *et al.*, 2014).

All larval stages and adults feed on *A. artemisiifolia* leaves and flowers. Newly hatched larvae begin to feed on the upper or lower epidermis and mesophyll cells. Young larvae skeletonize the leaves, while older larvae and adults eat the leaves, leaving only the major veins. In our laboratory, we have observed that *O. communa* seems to prefer male flowers. Partial defoliation of *A. artemisiifolia* was detected at the Belgrade – Zemun locality.

The biology of *O. communa* was described by Welch (1978) and LeSage (1986). Females lay clusters of eggs on leaves, lightly glued to the surface. Larvae usually emerge 5-6 days after oviposition, and there are three larval stages. Fully grown larvae form a loose cocoon and pupate. Adults feed and usually mate within 1-2 days after emerging. *O. communa* is a multivoltine beetle, and the last generation of females overwinters, as mated adults, usually on the ground close to withered plants. In our study, it was observed that adults were still copulating in October, so it is expected that fertilized females will overwinter.

O. communa is clearly a promising candidate for the biological control of *A. artemisiifolia*, and its spread through Europe is being monitored closely (Augustinus *et al.*, 2020). It is advisable to follow its populations in Serbia and to collect relevant data about its biology, distribution, host range and potential pest status.

Acknowledgments: The research was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia, through contract with Faculty of Agriculture - University of Belgrade, number 451-03-68/2020-14/200116.

References: Augustinus, B. A., Gentili, R., Horvath, D., Naderi, R., Sun, Y., Tournet, A. T. E., Schaffner, U., & Müller-Schärer, H. (2020). *Biological control*, 150: 104356. Boriani, M., Calvi, M., Taddei, A., Tantardini, A., Cavagna, B., Spadoni Andreani, F., Montagna, M., Bonini, M., Lommen, S., & Müller-Schärer, H. (2013). *L'Informatore agrario*, 69 (34): 61. [In Italian]. Dernovici, S., Teshler, M., & Watson, A. (2006). *Biocontrol Science and Technology*, 16: 669–686. <https://doi.org/10.1080/09583150600699820>. LeSage, L. (1986). *Memoirs of the Entomological Society of Canada*, 118(S133): 3–75. <https://doi.org/10.4039/entm118133fv>. Müller-Schärer, H., Lommen, S., Rossinelli, M., Bonini, M., Boriani, M., Bosio, G., & Schaffner, U. (2014). *Weed Research*, 54(2): 109–119. <https://doi.org/10.1111/wre.12072>. Palmer, W. A., & Goeden, R. D. (1991). *The Coleopterists Bulletin*, 45(2): 115–120. Seljak, G. (2017). *Biotska raznovrsnost Slovenije*. <http://www1.pms-lj.si/animalia/galerija.php?load=5263> [In Slovenian]. Vrbničanin, S., Malidža, G., Stefanović, L., Elezović, I., Stanković-Kalezić, R., Marisavljević, D., Radovanov-Jovanović, K., Pavlović, D., & Gavrić, M. (2008). *Biljni lekar*, XXXVI (5): 303–313. [In Serbian]. Welch, K. A. (1978). *Annals of the Entomological Society of America*, 71: 134–136. Zdravec, M., Horvatić, B., & Prpić, P. (2019). *BiolInvasions Records* 8(3): 521–529. <https://doi.org/10.3391/bir.2019.8.3.07>.

OPHRAELLA COMMUNA (COLEOPTERA: CHRYSOMELIDAE) ЈЕ СТИГЛА У СРБИЈУ

ОЛИВЕРА ПЕТРОВИЋ-ОБРАДОВИЋ, ДРАГИЦА СМИЉАНИЋ И МИЛИЦА ЧКРКИЋ МАТИЈЕВИЋ

Извод

Ophraella communa LeSage, 1986 је северноамерички тврдокрилац из фамилије Chrysomelidae који се по Европи шири од 2013, када је први пут нађен у Италији. То је фитофагни инсект који се храни амброзијом и потенцијални је биолошки агент у борби против овог значајног корова. У раду је приказан први налаз врсте у Србији. Биљке *Ambrosia artemisiifolia* L. (Asteraceae) прегледане су на присуство овог инсекта на 8 локалитета у Србији у 2020. години. *O. communa* је нађена на само једном локалитету, у Београду-Земуну, почетком октобра 2020. На десетак биљака сакупљено је 30 одраслих инсеката, 10 ларви и неколико јајних легала. С обзиром на то да је *O. communa* олигофагни инсект и да су у Италији забележене штете на сунцокрету, треба наставити са праћењем његовог присуства и биљака домаћина у Србији.

Received: October 12th, 2020

Accepted: October 26th, 2020