

## A NEW RECORD OF *NEODRYINUS TYPHLOCYBAE* IN ROMANIA - short communication

Constantina Chireceanu<sup>1\*</sup>, Daniela Dobromir<sup>2</sup>

<sup>1</sup>Research-Development Institute for Plant Protection Bucharest, Romania

<sup>2</sup>Research-Development Station for Viticulture and Oenology Miniş, Ghioroc, Arad, Romania

\*correspondence address

Research and Development Institute for Plant Protection Bucharest

Bd. Ion Ionescu de la Brad no. 8, CP 013813, Bucharest, Romania

E-mail: [cchireceanu@yahoo.com](mailto:cchireceanu@yahoo.com)

<http://www.doi.org/10.54574/RJPP.13.08>

**Key words:** *Neodryinus typhlocybae*, *Metcalfa pruinosa*, Arad, Romania

**Abstract:** The first record of the useful parasitoid wasp *Neodryinus typhlocybae* in the North-Western part of Romania (Ghioroc, Arad County, Crisana Province) is reported in this paper. The cocoons of this species were collected in September 2020 from five plant species *Rubus fruticosus*, *Cornus sanguine*, *Malus pumila*, *Syringa vulgaris* and *Laburnum anagyroides* attacked by *Metcalfa pruinosa*. This result represents the second report for Romania, the first being in Bucharest in the south part of the country in 2019.

### INTRODUCTION

*Neodryinus typhlocybae* (Ashmead 1893) (Hymenoptera, Dryinidae) is a species of useful parasitoid wasp native to North America which was imported into Europe to be used in controlling the planthopper *Metcalfa pruinosa* (Hemiptera, Flatidae), firstly in Italy in 1987 and then in other countries such as Switzerland, Slovenia, Croatia, France, Spain, Greece, the Netherlands (Strauss, 2012; Vetek et al., 2019). *M. pruinosa* is an invasive species accidentally introduced into Europe in the late 1970s (Zangheri & Donadini, 1980) and since then, it has spread across the continent becoming one of the most important polyphagous pests for both crops and ornamentals. After multiple introductions under people supervision and inoculative releases of *N. typhlocybae* in the field, populations of *M. pruinosa* recorded a significant decline (Dradi 2002). Over time, the wasp has spread naturally from one agroecosystem to another and from one country to another following its specific host, so that its presence on the continent has expanded. This explains why the wasp was found in countries where it was not introduced intentionally, such as Hungary, Bulgaria, Slovakia and Romania (Szöllösi-Tóth et al., 2017; Lapeva Gjonova et al., 2018; Vetek et al., 2019; Chireceanu et al., 2019).

This paper reports the first record of *Neodryinus typhlocybae* in the North-Western part of Romania (Ghioroc, Arad County) in 2020, one year after its first presence was reported in the south part of the country (Bucharest) in 2019.

### MATERIALS AND METHODS

In September 2020, cocoons of the *Neodryinus typhlocybae* wasp were collected from plant species that showed the specific attack produced by *Metcalf pruinosa* in the garden of the Research-Development Station for Viticulture and Oenology Miniş (N46°16'00; E21°59'68), Ghioroc Village (Arad County) during a current entomological investigation. The

Viticultural Station is situated in Crisana Province in the North-Western Romania. Samples of plant leaves with cocoons of *N. typhlocybae* attached to the exuviae of *M. pruinosa* nymphs were collected and put together in a glass jar in laboratory conditions for wasp adult's emergence. The entomological material was analysed under a Stereomicroscop Stemi 508, identified and recorded.

## RESULTS AND DISCUSSION

A number of 19 cocoons belonging to the parasitoid wasp *Neodryinus typhlocybae* were sampled on five plant species in the garden of the Viticultural Station Miniş located in Ghioroc Villige (Arad County) on 4<sup>th</sup> September 2020 (Figure 1).

Seven wasp cocoons were collected from blackberry (*Rubus fruticosus* L.) and four from apple (*Malus pumila* Mill) both plant species in the Rosaceae family, three cocoons from the common dogwood (*Cornus sanguine* L.) in the Cornaceae family, two cocoons from lilac (*Syringa vulgaris* L.) in the Oleaceae family and three cocoons from common laburnum (*Laburnum anagyroides*) in the Fabeaceae family. Blackberry shrubs were grown wild in the yard of viticultural station and the others were cultivated as ornamental trees.



**Figure 1.** The sites in Romania where *Neodryinus typhlocybae* is confirmed

After four weeks in laboratory, the female adults of *N. typhlocybae* emerged from seven cocoons present on the leaves (Figure 2 left). Of the other cocoons, from five cocoons emerged male adults of *N. typhlocybae* (Figure 2 right) and two cocoons showed dried larvae inside. Five cocoons showed a damaged dark contain.

This result represents the first record of *N. typhlocybae* in the North-Western part and second for Romania, first being in Bucharest in the south part of the country in 2019 (Chireceanu et al., 2019).



**Figure 2.** *Neodryinus typhlocybae*, females (left) and males (right) emerged from cocoons

Our finding in this report suggests that the useful parasitoid *N. typhlocybae* could be present in many other regions of the country and is established in Romania. Detection of this species in the western part of the country was not surprising, it was expected to be found. It should be noted that the Viticultural Station where this species was found, is located less than one hundred km from the Hungarian border. Considering this, we believe that *N. typhlocybae* has entered the Romanian ecosystems coming from Hungary, where its presence is already known (Szöllősi-Tóth et al., 2017). We suppose that *N. typhlocybae* will be further discovered in Romania in the coming years, especially if the attack of its specific host the leafhopper *M. pruinosa* on plants is followed.

## REFERENCES

- CHIRECEANU, C., GEICU, A.G., TEODORU, A. (2019). First record of *Neodryinus typhlocybae* (Ashmead) (Hymenoptera, Dryinidae) in Romania, a parasitoid wasp of the citrus flatid planthopper *Metcalfa pruinosa* (Say). *Romanian Journal of Plant Protection*, 8, 109-114.
- DRADI, D. (2002). Lotta biologica alla *Metcalfa pruinosa* (Say, 1830) con *Neodryinus typhlocybae* (Ashmead, 1893): il caso di Ravenna. *Quaderno di Studi e Note e di Storia Naturale della Romagna*, 17, 77-90.
- LAPEVA-GJONOVA, A., GJONOV, I., OLMİ, M., GUGLIELMINO, A. (2018). New records of the family Dryinidae (Hymenoptera, Chrysidoidea) from Bulgaria with an updated checklist. *North-Western Journal of Zoology*. 14, 2, 243-246.
- STRAUSS, G. (2012). Environmental risk assessment for *Neodryinus typhlocybae*, biological control agent against *Metcalfa pruinosa*, for Austria. *European Journal of Environmental Sciences*, 2, 2, 102-109.
- SZÖLLŐSI-TÓTH, P., KORÁNYI, D., VÉTEK, G. (2017). First record of *Neodryinus typhlocybae* in Hungary (Hymenoptera: Dryinidae). *Folia Entomologica Hungarica*, 78, 97-100.
- VÉTEK, G., KORÁNYI, D., MEZŐFI L BODOR, J., PÉNZES, B., OLMİ, M. (2019). *Neodryinus typhlocybae*, a biological control agent of *Metcalfa pruinosa*, spreading in Hungary and reaching Slovakia. *Bulletin of Insectology*, 72, 1, 1-11.
- ZANGHERI, S., DONADINI, P. (1980). Comparsa nel Veneto di un omottero neartico: *Metcalfa pruinosa* Say (Homoptera, Flatidae). *Redia*, 63, 301-305.