

## CONFIRMATION OF THE PRESENCE OF THE SOUTHERN GREEN STINK BUG, *NEZARA VIRIDULA* (LINNAEUS, 1758) (HEMIPTERA: PENTATOMIDAE) IN ROMANIA (SCIENTIFIC NOTE)

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**Abstract:** *Nezara viridula* (Linnaeus, 1758) (Hemiptera: Pentatomidae) is a plant-feeding stink bug, possibly originated in the Ethiopian region and subsequently spread by anthropochory. Due to the wide range of optimal ecological values and also to its polyphagy, the southern green stink bug adapted to all climates. Currently, it is spread in all the terrestrial zoogeographical regions, except arctic ones (New Zealand region considered as distinct). *N. viridula* has already been reported in our country, in Banat region, and this paper confirm their presence also in Muntenia.

**Key words:** *Nezara viridula*, Romania, distribution

### INTRODUCTION

The first mention regarding to the southern green bug was made by Kis in 1984. He considered that its presence in Romania was probable but it has not been confirmed at that moment. Although it is known as a pest in Romania, *N. viridula* has been reported only in Banat region in the western part of the country (Grozea et. al., 2012). The bug has been reported by Mencinicopschi (2013) in her PhD thesis, as pest on the goji shrubs from the research field of University of Agronomic Science and Veterinary Medicine of Bucharest, the species identification being performed by Chireceanu Constantina in 2011. Although it was not explicitly mentioned the status of "a new species for the Romanian fauna" in any of the quoted works, according to the "Ethics" appendix of the International Code for Zoological Nomenclature (ICZN, 1999) these previous information are to be considered as being new mentions for the fauna of our country.

With this report, the authors confirm the presence of the southern green stink bug, *N. viridula*, in the Bucharest city area.

### MATERIALS AND METHODS

The specimens of *N. viridula* were collected from a lot of tomato plants and from weeds in the vicinity of the experimental fields of Research-Development Institute for Plant Protection, Bucharest (44°30'15.1"N/26°04'27.7"E) during the summer and autumn seasons of 2015. Also, many other specimens were collected from house gardens and even from dwellings and from the medicinal and aromatic crops as well.

Specimens were killed by asphyxiation with ethyl acetate vapours and conserved in 70% ethanol and kept in the RDIPP collection. The taxonomic identification was

accomplished, based on diagnostic characters, according to descriptions of Kis (1984) in the fauna volume for Heteroptera (Pentatomoidea superfamily).

## RESULTS AND DISCUSSIONS

The systematic position of the southern green bug is as follows:

**Regnum: Animalia**

Subregnum: Bilateria (Triploblastica)

**Phylum: Arthropoda**

Subphylum: Tracheata

**Classis: Hexapoda (Insecta)**

Subclassis: Pterygota

**Ordo: Hemiptera**

Subordo: Heteroptera

Suprafamilia: Pentatomoidea

**Familia: Pentatomidae**

**Genus: *Nezara*** Amyot & Serville, 1843

**Species: *N. viridula*** (Linnaeus, 1758)

In nature, the development cycle of *N. viridula* bug is annual. In conditions of greenhouses and solaria (based on the works treating the biology of the species consulted) we presume that the insect can have up to 3 generations per year by lacking the winter diapauses. In Romania, in the climatic conditions of the cold season, the insect hibernates either as adult or larvae. The species presents a seasonal dimorphism, which some authors consider as being an indicator of the diapause (Harris et al., 1984) or not a reliable indicator (Seymour & Bowman, 1994). The 'warm season' individuals have a more or less uniformly green tint (figure 3), and the 'cold season' individuals display a light-brown tinge with reddish hues (figure 4). For the both morphs, the morphometric characters and the three antero-scutellar white points are kept throughout the year.

The specimens of the southern green bug *N. viridula* collected by us in 2015 were represented by larvae of various instars (figures 1 and 2) and adults of the two seasonal dimorphisms (figure 3 and 4) collected from tomato plants and weeds. Tomato fruits attacked by the bugs were also recorded (figure 5).

Another observation our observation was that some synanthropic species of phalangid spiders, e.g. *Pholcus phalangioides* Fuesslin, 1775 (Arachnida: Aranea: Pholcidae) feeds on southern green bugs which fall in their webs. As we have observed, a single spider can paralyse, kill and feed on a bug individual roughly in an hour. The feedings are repeated, between them the spiders resting in the vicinity and guarding its kill. From the immobilisation of the prey the observed spider has defended the access to other conspecific individuals (even of the opposite sex) until the integral consumption.



**Figure 1** Immature larvae on Acer



**Figure 2** Mature larvae on Xanthium



**Figure 3.** Adult of warm season morpha



**Figure 4.** Adult of cold season morpha



**Figure 5.** Tomatoes attacked by the bugs

### Host plants (selective list)

More than 30 plant species are cited in scientific literature as host for the pentatomid *N. viridula* (Panizzi, 1997).

In Romania, the most important crop susceptible to attack of the bug is *Lycopersicon esculentum*. As we observed, the attacked tomatoes develop light red to orange spots and necrotic lesions due to the toxicity of the insects' saliva. Also, the taste is altered, making them unpalatable for the humans as indicated by Grozea *et al.* (2012)

Also, *Brassica oleracea*, *Capsicum anuum*, *Cerasus avium*, *Glycine max*, *Phaseolus vulgaris*, *Pisum sativum*, *Prunus armeniaca*, *P. persica*, *Raphanus raphanistrum*, *Sinapis alba*, *Triticum aestivum* and *Zea mais* were reported as being consumed by the southern stink bug.

### CONCLUSION

The presence of *Nezara viridula* was confirmed in Buchares area (Băneasa district) in the Southern part of Romania on tomato plants and weeds.

Tomato fruits were recorded to be attacked by the southern green bug.

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