

**A NEW POTENTIAL PEST OF EAST AND SOUTH-EASTERN  
ANATOLIA IN TURKEY: *NYSIUS CYMOIDES* (SPINOLA, 1837)  
(HETEROPTERA, LYGAEIDAE)**

**İnanç Özgen\*, Berna Kaymak Kara\*\*, Sabri Miroğlu\*\*,  
İbrahim Koç\*\*\* and Paride Dioli\*\*\*\***

\* Firat University, Engineering Faculty, Bioengineering Department, Elazığ, TURKEY. E-mail: inancozgen@gmail.com

\*\* Plant Protection Research Institute, Diyarbakır, TURKEY.

\*\*\* Bitlis Eren University, Engineering Faculty, Bitlis, TURKEY.

\*\*\*\* Natural History Museum, Department of Entomology, Corso Venezia 55, Milan, ITALY.

**Özgen, İ., Kaymak Kara, B., Miroğlu, S., Koç, İ. & Dioli, P.** 2020. A New Potential Pest of East and Southeastern Anatolia in Turkey: *Nysius cymoides* (Spinola, 1837) (Heteroptera, Lygaeidae). *Munis Entomology & Zoology*, 15 (1): 265-268]

**ABSTRACT:** This study was conducted in 2018-2019. This work was implemented surveys and field observations in Adiyaman, Batman, Diyarbakır, Elazığ, Mardin, Siirt and Muş. In this study, the distribution of the species in Southeast and Eastern Anatolia provinces and their damage status were determined. It has been observed that this species causes damage to Antep pistachios, corn, tomatoes, peppers and soybeans, further it has been observed that the population has reached significant levels. Further studies on the species are required in the following years.

**KEY WORDS:** *Nysius cymoides*, spread, harmful

*Nysius cymoides* (Spinola, 1837) (Heteroptera: Lygaeidae: Orsillinae) has spread in a wide and diverse habitat ranging from the Holomediterranean area to the deserts of Arabia, Europe, Africa, and Asia (Pericart, 1998) (Fig. 1). Recently its distribution has enlarged to all Europe: Andorra, Austria, Belgium, Bulgaria, Crete, Croatia, Czech Republic, European Turkey, France, Great Britain (Jersey), Germany, Greece, Hungary, Italy, Liechtenstein, Luxembourg, Malta, Macedonia, Moldavia, Montenegro, Netherlands, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Switzerland, Ukraine. North Africa: Algeria, Canary Islands, Egypt, Libya, Morocco, Madeira, Tunisia. Asia: Azerbaijan, Arab Emirates, Kazakhstan, Armenia, Turkey, China (not confirmed), Cyprus, Georgia, Iran, Iraq, Israel, Jordan, Kirgizia, Saudi Arabia, Sinai, Tadjikistan, Turkmenistan, Uzbekistan and Yemen. Equatorial Africa: Cabo Verde Is., Mauritania, Sierra Leone, Sudan (Aukema & Rieger, 2001; Protić Lj., 2001; Aukema et al., 2013).

Especially in Italy, it has caused significant losses in recent years on quinoa (*Chenopodium quinoa*) (Bocchi et al., 2016; Dioli et al., 2016; Reguzzi et al., 2019) and soybean (*Glycine max*) due to significant population growth (Scaccini & Furlan, 2019). This species also causes necrosis and weight loss and damage in seeds from yellow to brown where they are fed in plant species (Chapelin-Viscardi et al., 2017). It has been reported that especially in Iran, it causes significant damages in canola plant, making intense damages of adults and nymphs and causing 3 offsets per year. Also, the same researchers determined that the species causes intense damage on sunny days (Badam et al., 2006). Additionally, it was reported that this species is harmful in the cabbage and vineyard areas in Israel (Gilat et al., 1974). This widely observed pest (Yazıcı et al., 2015) were it was detected on pistachio (Bolu, 2002), canola (Demirel, 2009), vineyard (Özgen, 2012) fields in Turkey. In this study; the population increases of pests in different

culture plants and spread of pests in the Eastern and Southeastern Anatolia region of Turkey in recent years will be brief discussed.

### MATERIALS AND METHODS

This study was conducted in 2018-2019. Samples were collected from pistachio, vineyard, tomato, cucumber, watermelon, eggplant, pepper, corn, purslane, alfalfa, capers, canary and *Solanum nigrum* in Adiyaman, Batman, Diyarbakır, Elazığ, Muş, Siirt and Mardin provinces. The samples were collected using sweep net and brought to the laboratory to examine and make ready for diagnosis. The samples were diagnosed by the fifth author.

### RESULTS AND DISCUSSION

**MATERIAL:** Adiyaman, 22.06.2018, eggplant, pepper, 11 exc., Batman, 12.08.2019, 13 exc., Diyarbakır, Hevsel gardens, 27.07.2019, 168 exc., tomato, cucumber, watermelon, capers, purslane, Bismil, 12.08.2019, 145 exc., tomato, eggplant, Çınar, Selman village, 21.07.2018, tomato, pepper, watermelon, eggplant, 18 exc., Ergani, 22.07.2018, tomato, pepper, eggplant, 12 exc., Elazığ, Baskil, 22.07.2018, tomatoes, 18 exc., Yazıkonak, vineyard, alfalfa, 28.08.2019, 34 exc., Mardin, Kızıltepe, 22.07.2019, 89 exc., pistachios, canopy, Midyat, 23.7.2019, 14 exc., *Solanum nigrum*, Muş, Berce, 22.07.2019, maize, 8 exc. **Total:** 530 exc.

**DAMAGE:** Discoloration was observed in species feed areas and then browning and dryness were observed while they were in a collective and serial manner. Pests were found in areas contaminated with weeds. In parallel with the increase in temperature, the population has also increased. It is thought that the fight against these weeds, especially in the fields where there are plenty of canals, will reduce the population of the pests. It was determined that there was an increase in the temperature and population in the areas where the Dicle River increased the humidity rate at the edge of Hevsel gardens. In the vineyard areas of Elazığ province, it was observed that the nymphs stopped on the grape leaves without feeding. It has also been observed that the pests were fed on freshly planted two-year pistachio seedlings in Mardin and cause drying problem on seedlings (Fig. 2). It was also observed that the species absorbed the leaves of products such as tomatoes, eggplants and watermelons, and they were observed to be fed in groups (Fig. 3). This species might increase the damage in the rainy years with the increase of temperature in the following years. The species was spreaded at different altitudes. In this study, the species was collected at altitudes of 587 m and 1255 m. It is thought that leaving the weeds, that can cause harm to the species, will reduce the damage in the culture plants. More detailed studies on the species may be more helpful and, study of chemical control alternatives that will not cause damage to organic agriculture and agroecosystem are important to prevent the damage of the species.

### LITERATURE CITED

- Aukema, B. & Rieger, C. 2001. Catalogue of the Heteroptera of the Palaearctic Region, Vol. 4, Pentatomorpha I. The Netherlands entomological Society, Amsterdam, XIV, 346 pp.
- Aukema, B., Rieger, C. & Rabitsch, W. 2013. Catalogue of the Heteroptera of the Palaearctic Region. Vol. 6. Supplement. The Netherlands entomological Society, Amsterdam, XXIV, 629 pp.
- Badam, A. K., Mohagheg, M. A. J. & Ostovan, H. 2006. Biofogy of the seed bug *Nysius cymoides* (Heteroptera: Lygaeidae) in Mazandaran canola fields. 17 th Iranian Plant Protection Congress, 2-5 Sept. Iran, 247 p.

- Bocchi, S., Cinquanta, D., Dioli, P. & Limonta, L.** 2016. Presence of *Nysius cymoides* (Spinola) on *Chenopodium quinoa* Willd. Journal of Entomological and Acarological Research, 48 (5897): 332-334.
- Bolu, H.** 2012. Güneydoğu Anadolu Bölgesi antepfıstığı alanlarındaki böcek ve akar faunasının saptanması. Türk. Entomol derg., 26 (3): 197-2008.
- Chapelin-Viscardi, J.-D., Tourton, É. & Matocq, A.** 2017. Pullulations de *Nysius cymoides* (Spinola, 1837) dans des parcelles de Colza de l'Ouest de la France (Heteroptera Lygaeidae Orsillinae). L'Entomologiste, 73 (3): 205-210.
- Demirel, N.** 2009. Determination of Heteroptera species on canola plants in Hatay province of Turkey. Afr. J. Agric. Res., 4: 1226-1233.
- Dioli, P., Colamartino, A., Negri, M. & Limonta, L.** 2016. Hemiptera and Coleoptera on *Chenopodium quinoa*. Redia. XCIX, 2016: 139-141.
- Gilat, B. M. & Louis, B. M.** 1974. Biennial report 1971/1973. Negev Research Institute for Silviculture And Applied Ecology, Tel Aviv. 13 pp.
- Özgen, I.** 2012. The species of suborder Heteroptera (Hemiptera) on vineyards agroecosystems which found in Diyarbakır, Elazı and Mardin provinces, Turkey. Mun. Ent. Zool., 7: 255-258.
- Pericart, J.** 1998. Faune de France 84 A: Hemipteres Lygaeidae Euro-Mediterraneens: Generalites, Systematique: Premirere partie. Edition Federation Francaise des Societes de Sciences naturelles, 1: 219-221.
- Protić, Ij.** 2001. Catalogue of the Heteroptera fauna of Yugoslav countries. Part Two. 39: 1-272.
- Reguzzi, M. C., Nicoli Aldini, R., Vercesi, A., Ganimede, C., Tabaglio, V., Mazzoni, E. & Dioli, P.** 2019. Quinoa, quali insetti infestanti sono presenti al Nord Italia. L'informatore agrario, 23 (2019): 59-62.
- Scaccini, D. & Furlan, L.** 2019. Outbreak of *Nysius cymoides* on second crop soybean *Glycine max* and proposal for Integrated Pest Management. Bulletin of Insectology, 72 (1): 29-34.
- Yazıcı, G., Yıldırım, E. & Moulet, P.** 2015. Contribution to the knowledge of the Lygaeoidea (Hemiptera, Heteroptera) fauna of Turkey. Linzer biol. Beitr., 47 (1): 969-990.



Figure 1. *Nysius cymoides* (photo P. Dioli).



Figure 1. Collection of *Nysius cymoides* (Spinola, 1837) and its position on weeds (A: Collective presence, B, D: Damage conditions in young pistachio nuts, C: Adult wandering in pistachio exile, E: Its presence on weeds).



Figure 2. Damage of *Nysius cymoides* (Spinola, 1837) on tomato and watermelon.