Scientific Reports in Life Sciences 6 (1): 99-103

DOI: https://doi.org/10.5281/zenodo.14950313

Unidentified species of Tribe *Halyini* Genus (Amyot & Serville, 1843) in India with a short note

Selvaraj Selvamurugan*

Translational Health Science and Technology Institute (THSTI), Faridabad
**Email: selva199420@yahoo.in*

Received: 22 November 2024 / Revised: 19 January 2025/ Accepted: 21 January 2025/ Published online: 02 March 2025.
How to cite: Selvamurugan, S. (2025). Unidentified species of Tribe *Halyini* Genus (Amyot & Serville, 1843) in India with a short note, Scientific Reports in Life Sciences, 6(1), 99-103. **DOI:** https://doi.org/ 10.5281/zenodo.14950313

Abstract

With an unidentified species of *Pentatomidae* family from Madurai district, Tamilnadu, India. This is the first report of Superfamily Pentatomoidea (*Heteroptera*). The *Pentatomidae* causes many difficulties for systematists, not least of which is that the higher taxonomy is a "morass of poorly defined higher taxa, particularly the tribes". In this species, a new distribution is recorded in this area.

Keywords: First report, New record, South India, Tribe *halyini*

Introduction

The Superfamily Pentatomoidea (*Heteroptera*) has a global fauna of ca. 7200 species in 15 families (Henry, 2017). *Pentatomidae* Leach, 1815 (stink bugs) are the most specious group (4700 species in 900 genera (Henry, 2009) with 953 species in the Palaearctic region (Rider, 2006; Aukema et al., 2013). Scutelleridae Leach, 1815 has also a global fauna of 450 species in ca. 80 genera (Henry, 2009) with 180 species in the Palaearctic region. *Cydnidae* with almost 700 species in 80 genera, worldwide (Lis, 2013), represented by five subfamilies and more than 37 genera in the Palaearctic region (Lis, 1994, 1999; Pluot-Sigwalt & Lis, 2008). Halys species are polyphagous and feed on a variety of plant species, including a few of the economically important trees of timber value, like Acacia arabica L. (*Fabaceae*), *Casuarina equisetifolia L. (Casuarinaceae*), *Albizzia lebbek* Benth. (*Fabaceae*), *Santalum album L. (Santalaceae)*, Butea frondosa Koen. ex Roxb. (*Fabaceae*), *Shorea robusta Gaertn*. (*Dipterocarpaceae*), *Spathodea campanulata Beauv*. (*Bignoniaceae*), *Tabebuia rosea Zhang* (*Bignoniaceae*), *Tamarindus indica L*. (*Fabaceae*), *Zizyphus oenoplia* (L.) Mill. (*Rhamnaceae*) etc. (Rider, 2018), even though no serious crop damage has been reported.

The name *Pentatomidae* is from the Greek pente meaning five and tomos meaning section, which refers to the five segments of their antennae. The representatives of this family are hard to differentiate but can be identified by these characters. The large, triangular scutellum, is well extended to cover half of the back but does not cover the abdomen. The antennae are five-segmented. Their body is usually broad and shield-shaped. The head is relatively small and often "tucked into" a concavity in the anterior margin of the pronotum. Ocelli present. These insects eject a foul-smelling glandular substance secreted from pores in the thorax when disturbed. The chemicals involved include aldehydes, making the smell similar to that of coriander (Jadhav & Hegde, 2018).

This report of the first time record of unidentified stink bugs in Tamilnadu, India. Hence the paper was given status with their notes. Based on a critical literature review and the study of recently collected specimens and museum collections, references. Information is also provided for each species on the distribution in the India and scenario of past workers.

Fig 1. Unidentified species Tribe *Halyini* (Amyot & Serville, 1843).

Distribution

Europe - Albania, Austria, Belgium, Bosnia Hercegovina, Bulgaria, Croatia, Czech Republic, Turkey, France, Germany, Great Britain, Greece, Hungary, Italy, Liechtenstein, Macedonia, Moldavia, Montenegro, Netherlands, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Switzerland and Ukraine. Asia - Azerbaijan, Armenia, Turkey, Georgia, and Iran (Aukema et al., 2013).

Diagnosis of Tribe Halys

Members of the genus Halys are large and dull-colored, usually similar to the color of tree bark, probably a form of crypsis to hide from natural enemies. They hide in cracks and crevices of tree bark or on tree holes during the daytime and are active during dusk. The author has found a large number of bugs, sometimes more than one species coexisting, in congregations on the tree trunks, especially during spring and summer (Salini, 2019). In this regard, Found in a new distribution record of Uthankudi village, Madurai district, Tamilnadu. India. This is the undescribed species of the Halys genus (Fig 1).

Discussion

To date, the genus Halys is represented by eight species from the Indian subcontinent, though the species and their distribution need verification: *H. fabricii Memon*, Ahmad & Perveen, 2002, *H. serrigera, H. sulcata, H. shaista, H. sindilla, H. spinosa, H. mulberriensis, H. hyderabadiensis* and *H. naokoatensis.* The Indian subcontinent is located on the Indian tectonic plate and covers 10% area of Asia. It includes India, Pakistan, Bangladesh, Nepal, Bhutan, Sri Lanka, and the Maldives. The type localities of the species of *Halys*, which are known to occur in the Indian subcontinent, are restricted to India and Pakistan. The author has studied more than 300 specimens of *Halys* collected from various localities in India apart from the type images of *Halys dentata* obtained from Henrik Engoff, Natural History Museum of Denmark. (Memon et al., 2006) supplemented the morphological characters with DNA sequence information, resulting in the description of *H. sindilla* Memon, Meier & Manan, 2006, based on a series of specimens with unusual morphological variability, collected from Pakistan. (Shaikh et al., 2011) described *Halys spinosa* on Acacia arabica Wild. From Miani Forest, Pakistan. Recently, Memon et al. (2016) described *Halys mulberriensis* from Lahore, Punjab, collected on Morus Alba L. Later, (Memon et al., 2017) described *Halys hyderabadiensis* and *Halys naokoatensis* from Sindh province of Pakistan, gave a key to nine Asian species of Halys and followed (Memon et al., 2002) for rejecting the conspecificity of *H. serrigera* and *H. dentata*. A perusal of pertinent literature shows that a total of 14 species described under Halys from various parts of Asia, namely *H. dentata, H. hedenborgi* Stål, 1865, *H. hyderabadiensis* (Memon, et al., 2017), *H. jizanus Linnavuori*, 1986, *H. mulberriensis* (Memon, et al., 2016), *H. neelgiriensis, H. noakoatensis* (Memon, et al., 2017), *H. persa, H. rugosa, H. serrigera, H. shaista* Ghauri, 1988, *H. sindilla, H. spinosa* (Shaikh, et al., 2011) & *H. sulcata*.

In addition, Ghauri (1988) described Halys Shaista from Coonoor, south India, and stated that the species *H. neelgiriensis* Distant, 1893, H. rugosa Distant, 1921, and H. persa Bergroth,

1919, do not belong to Halys, but did not specify another generic affiliation for these species. Ahmad and Perveen (1982) erected Neohalys with Neohalys acuticornis, as a type species and described three species from Pakistan. Azim (2002) treated the genus Neohalys as a subgenus of Halys, and also included H. serricollis. These changes in the status of the species in Halys are mainly due to confusion related to the inherent phenotypic plasticity associated with these species. Unidentified species of tribe *Halyini* genus, in this distribution, found from Uthankudi village, Madurai district, Tamilnadu. India (Fig 1). Other species of the Subfamily *Asopinae* are predators and help to suppress pest species including other species of pentatomids species (De Clercq, 2008). More studies from different localities will be required to understand the true diversity of the *Pentatomidae* fauna of the region and India.

Acknowledgments

I am grateful to S. Salini, Senior Scientist (Agrl. Entomology), ICAR-National Bureau of Agricultural Insect Resources, Hebbal-560024, Bangalore, India for providing the necessary references and Identification.

References

Ahmad, I., & Perveen, R. (1982). A new genus and three new species of Halyini from Pakistan with a note on their relationships (Hemiptera: Pentatomidae). Transactions of the Shikoku Entomological Society, 16(1–2), 1–10.

Azim, M. N. (2002). Studies on Indian genera of the tribe Halyini (Pentatomidae: Pentatominae). Oriental Science, 7, 41–52.

Aukema, B., Rieger, C., & Rabitsch, W. (2013). Catalog of the Heteroptera of the Palaearctic Region: Volume 6. Supplement. The Netherlands Entomological Society.

De Clercq, P. (2008). Predatory stink bugs (Hemiptera: Pentatomidae, Asopinae). In J. L. Capinera (Ed.), Encyclopaedia of Entomology (pp. 3042–3045). Springer Science Business Media B.V.

Ghauri, M. S. K. (1988). A revision of Asian species of the genus *Halys* Fabricius based on the type material (Insecta, Heteroptera, Pentatomidae). Entomologische Abhandlungen Staatliches Museum für Tierkunde Dresden, 51(6), 77–92.

Henry, T. J. (2017). Biodiversity of Heteroptera. In R. G. Foottit & P. H. Adler (Eds.), Insect biodiversity: Science and society (pp. 279–335). Wiley. https://doi.org/10.1002/9781118945568.ch10

Henry, T. J. (2009). Biodiversity of Heteroptera. In R. G. Foottit & P. H. Adler (Eds.), Insect biodiversity: Science and society (p. 632). Wiley-Blackwell.

Jadhav, D. D., & Hegde, V. D. (2018). On a collection of stink bugs (Hemiptera: Pentatomidae) in and around Pune, Maharashtra. Journal of Entomology and Zoology Studies, 6(4), 1504–1507.

Lis, J. A. (1994). A revision of Oriental burrower bugs (Heteroptera: Cydnidae). Upper Silesian Museum.

Lis, J. A. (1999). Burrower bugs of the Old World – A catalog (Hemiptera: Heteroptera: Cydnidae). Genus (Wrocław), 10(2), 165–249.

Lis, J. A. (2013). Family Cydnidae Billberg, 1820. In J. Gerlach (Ed.), Odonata, Hemiptera, Hymenoptera and Other Insects of the Seychelles Islands (pp. 132–135). Siri Scientific Press.

Memon, N. (2002). A revision of the berry bugs (Heteroptera: Pentatomoidea: Halyini) of the Indo-Pakistan subcontinent with special reference to cladistic analysis of halyine genera (Doctoral dissertation, University of Karachi).

Memon, N., Meier, R., Manan, A., & Su, K. F.-Y. (2006). On the use of DNA sequences for determining the species limits of a polymorphic new species in the stink bug genus *Halys* (Heteroptera: Pentatomidae) from Pakistan. Systematic Entomology, 31(4), 703–710.

Memon, N., Parveen, R., Ahmad, I., & Shah, N. A. (2017). Description of two new species of Oriental genus *Halys* (Pentatomoidae, Pentatominae, Halyini) from Sindh, Pakistan with a key of its nine Asian species. Pakistan Journal of Zoology, 49(4), 1301–1306.

Pluot-Sigwalt, D., & Lis, J. A. (2008). Morphology of the spermatheca in the Cydnidae (Hemiptera, Heteroptera): Bearing of its diversity on classification and phylogeny. European Journal of Entomology, 105, 279–312. https://doi.org/10.14411/eje.2008.038

Rider, D. A. (2006). Family Pentatomidae. In A. B. Aukema & C. Rieger (Eds.), Catalogue of the Heteroptera of the Palaearctic Region: Volume 5. Pentatomomorpha II (pp. 233–402). The Netherlands Entomological Society.

Rider, D. A. (2018). *Pentatomoidea Home Page.* http://www.ndsu.nodak.edu/ndsu/rider/Pentatomoidea/ (Accessed 14 January 2018).

Salini, S. (2019). Revision of the genus *Halys* (Hemiptera: Pentatomidae) with description of a new species from India. Zootaxa, 4586(2), 351–375. https://doi.org/10.11646/zootaxa.4586.2.9

Shaikh, A. M., Memon, N., & Shah, M. A. (2011). A new halyine species of *Halys* Fabricius (Hemiptera, Pentatomidae, Pentatominae) from Miani forest, Sindh, Pakistan. Sindh University Research Journal, Science Series, 43(2), 157–160.