Notas

Confirmation of the presence of the painted bug *Bagrada hilaris* (Hemiptera: Heteroptera) in Patagonia, with first teratological cases in the species

Confirmación de la presencia de la chinche pintada *Bagrada hilaris* (Hemiptera: Heteroptera) en Patagonia, con los primeros casos teratológicos para la especie

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Revista de la Sociedad Entomológica Argentina vol. 84 núm. 4 e0402 2025

Sociedad Entomológica Argentina
Argentina

Recepción: 15 Mayo 2025
Aprobación: 01 Septiembre 2025

Abstract: New collections confirming the presence of the painted bug *Bagrada hilaris* (Burmeister, 1835) (Hemiptera: Heteroptera) in Patagonia are provided. The specimens were collected in Neuquén and Río Negro, the latter representing a new provincial record. These records become southernmost known for a member of Strachiini. In addition, two teratological cases are described belonging to leg abnormalities.
Keywords: Faunistics, Pentatomidae, Pentatominae, Strachiini, Teratosis.
Resumen: Se confirma la presencia de *Bagrada hilaris* (Burmeister, 1835) (Hemiptera: Heteroptera) en Patagonia, en base a ejemplares de las provincias de Neuquén y Río Negro, el cual además es el primero para esta provincia. Estos registros son los más australes para un miembro de Strachiini. Adicionalmente se describen dos casos teratológicos correspondientes a anomalías de las patas.
Palabras clave: Faunística, Pentatomidae, Pentatominae, Strachiini, Teratosis.

Bagrada hilaris (Burmeister, 1835) is a species of stink bug (Pentatomidae) originally described from India, where it is a pest in oilseeds and several vegetables (Faúndez, 2018). In recent years it has become one of the most invasive pentatomids and has been recorded in Asia, Africa, Europe, North America and South America (Bundy et al., 2018). This species has been recorded on more than 15 families of plants, although it seems to prefer members of the Brassicaceae. It is considered a major pest on cabbages (*Brassica oleracea* L.) (Palumbo et al*.,* 2016). In South America it arrived for the first time in central Chile in 2016 (Faúndez et al., 2016); subsequently it rapidly expanded through the country producing several issues in agriculture and even as a household pest (Faúndez et al., 2017, 2019; Faúndez, 2018). After several years, in 2021, *B. hilaris* invaded Argentina (Carpintero et al., 2021), These records were found in Mendoza Province. Although it is well established in Mendoza, no further Argentinean records have been found in other provinces until recently Riquelme et al. (2025) provided its first occurrence in Neuquén. The purpose of this contribution is to provide new records of this species in Patagonia, as well as describe the first teratological cases. For identification we follow Faúndez et al. (2016) and Bundy et al. (2018). For classification, description, and terminology of the teratological cases we follow Balazuc (1951) and Štusak & Stehlik (1979). The map of Fig. 1 was developed with QGIS® v. 3.34.1. Photos were taken with a Ricoh 550 digital camera adapted to a Celestron P45 stereoscopic microscope. Measurements are in millimeters. Material is deposited in the NINFA center, Punta Arenas, Chile.

Figure 1.
New records of *Bagrada hilaris*.

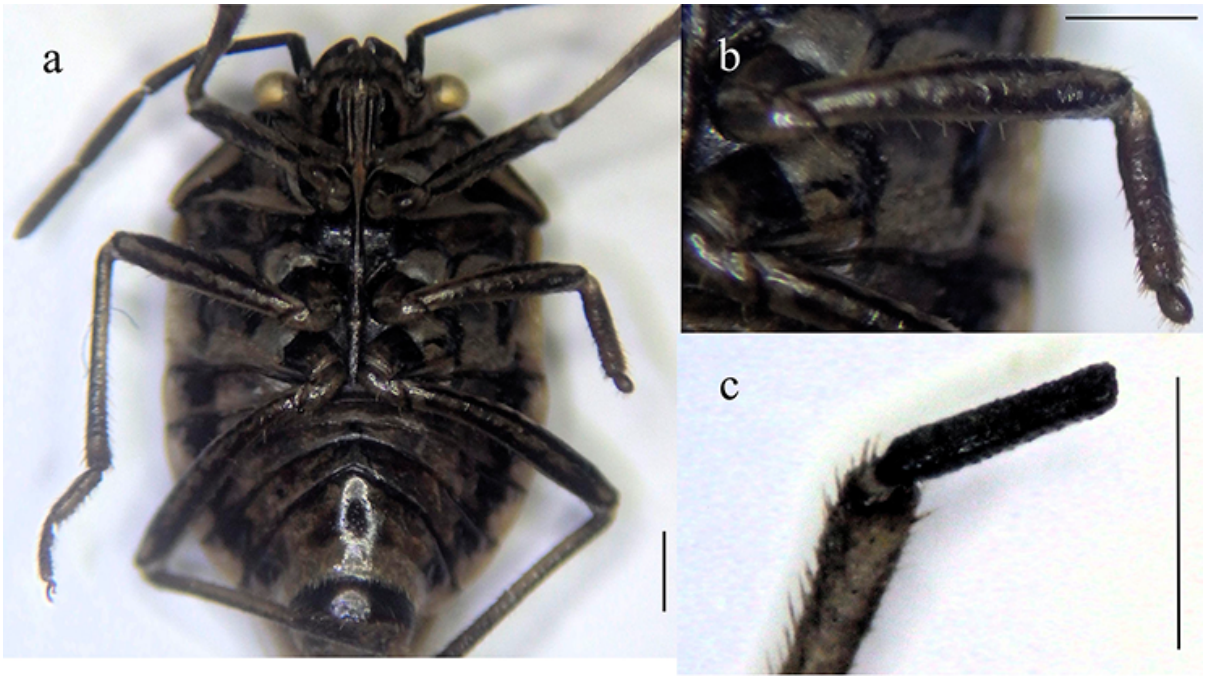

Figure 2.

Ventral view of *Bagrada hilaris*, teratological specimens.

a-b. Case 1. a. general view. b. detail of malformed leg. c. Case 2, malformed tarsus. Scale bar= 1mm.

Material examined: ARGENTINA, Neuquén Province, Chos Malal 37°23′00″S 70°16′00″W 9-XII-2024 leg. J. Palacios 3 females 3 males. Neuquén Province, Pehuenches 37°23′25″S 68°55′31″W, 3-IV-2025 5 females 4 males 3 V nymphs leg. K. Muñoz (two teratological males); Río Negro Province, 5km E of Lago Pellegrini 38°40′03″ S, 68°01′03″ W, 4-IV-2025 2 females 1 male leg. K. Muñoz.

The presence of this species in Patagonia was informed to the Servicio Nacional de Seguridad Agroalimentaria (SENASA), through Sistema Nacional de Vigilancia y Monitoreo de Plagas, Argentina (SINAVIMO). Identification number of the certificate is 1372, May 2nd, 2025.

Two males from Pehuenches exhibited teratological conditions which are described as follows:

Case 1. Compound unilateral atrophy and oligomery (Fig. 2a-b, Table I)

An unilateral compound teratosis is presented. It belongs to an oligomeric atrophy in the mesothoracic left leg. The femur is slightly reduced in size in respect to the right one and with an almost imperceptible curvature. Tibia shows an evident atrophy measuring little less than the half size of the right one. Tarsus is completely malformed and includes an oligomery having only one segment instead of three. The only tarsal segment is ovoid and reduced in size compared to the first tarsal segment of the right leg. The malformed

tarsus does not show signs of anarthrogenesis and lacks pretarsal structures.

Case 2. Unilateral simple oligomery (Fig. 2c)

The specimen shows an oligomeric right metathoracic leg tarsus, with only one segment (0.72 mm). The tarsomere is subcylindrical with irregular apex and there are no signs of anarthrogenesis. The left metathoracic leg tarsus is normal (2.08 mm) with the first tarsomere slightly longer than the malformed (0.76 mm).

	left (mm)	right (mm)
Femora	2,11	2,59
Tibiae	1,56	2,70
Tarsi	0,2	1,86
Total	3,87	7,15

Table I.

Measurements of mesothoracic legs of case 1.

The first teratological cases in *B. hilaris* were observed, both in the legs. This is very interesting because for the Heteroptera the majority of cases belong to antennae (Balazuc, 1951; Stusak & Stehlik, 1979; Faúndez, 2022). The anomalies in the legs can be explained by mechanical damages or injuries during nymphal stages or even the exposure to environmental external factors (Balazuc, 1951). Here, in both cases the extreme Patagonian conditions such as low temperatures and strong winds may have played a role in the generation of the described teratoses.

In the case 1, it can be inferred that it might been caused by a trauma in the first instar, according to Luscher (1948). In this paper it is found that a trauma in the apical section of the femur of a first instar nymph resulted in the growth of a reduced leg with multiple deformations and with an incomplete tarsus. On the other hand, in the case 2, the formation of a deformed tarsomere and a normal rest of the leg indicates a postibial trauma in the last instar, which did not have enough time to regenerate the lost tarsomeres.

The distributional records confirm the presence of *B. hilaris* in Patagonia and are the first for Río Negro Province. *Bagrada hilaris*, therefore become the southernmost distributed Strachiini in South America (Fig. 1). The number of specimens together with immatures suggest there could be an incipient state of the invasion. This finding is a little bit off the range that was predicted by Carvajal et al. (2019). Therefore, it is necessary to reassess current models and include the actual information of the bug, as well as considering additional information to create more accurate predictions. The present record together with other recent arrival and/or expansions of invasive Heteroptera in Patagonia such as *Zelus renardii* (Kolenati) (Araya-Lobos & Faúndez, 2025), *Leptoglossus occidentalis* (Heidemann) (Gómez, 2021), *Orsillus depressus* Dallas (D'Hervé et al., 2022) y *Halyomorpha halys* (Stal) (Faúndez et al., 2024) shows the urgent need to improve the surveillance in the area, not only to avoid new arrivals but also to assess the status of the recent invasions. It is important to note that the map of the revised distribution provided by Riquelme et al. (2025) is incomplete. It only includes records of *B. hilaris* from Central Chile and omits other known occurrences. Previous studies by Faúndez (2018) and Faúndez et al. (2018) documented the species from the Atacama to the O'Higgins Regions in Chile, and it was more recently found to have become established in the Maule Region (Faúndez, 2025).

Acknowledgments

We thank Kevin Muñoz for sending us the specimens used in this study. This work is funded by the grant ANID/Basal FB210018.

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Notes

COMPETING INTERESTS

The authors have declared that no competing interests exist.

AUTHORS CONTRIBUTIONS

SAL made visualization, processing data, descriptive work, and writing inital draft and final versions. EIF made data curation, descriptive work, writing and discussing final version.

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redalyc-journal-id: 3220

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Revista de la Sociedad Entomológica Argentina
vol. 84, núm. 4, e0402, 2025
Sociedad Entomológica Argentina, Argentina
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ISSN-E: 1851-7471

DOI: https://doi.org/10.25085/rsea.840402