

Notes and Comments

***Podisus sagitta* (Fabricius) does not occur in Brazil: a corrigendum to Oliveira-Júnior et al. 2021**

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Among the 65 genera of predatory stink bugs currently described, *Podisus* Herrich-Schäffer is one with the most taxonomic incongruences. The genus is the most speciose of the subfamily, with 35 species described, presenting a great morphological variety and several taxonomic arrangements throughout its history (Thomas, 1992; Brugnera et al., 2020; Roell et al., 2021). Some species are the target of studies regarding biological control, mainly *Podisus maculiventris* (Say, 1831) in North America, and *P. nigrispinus* (Dallas, 1851), *P. sagitta* (Fabricius, 1794), and *P. fuscescens* (Dallas, 1851) in Central and South America. The last three belong to the sagitta group, which can be recognized by the acute humeral angles, with a noticeable posterior projection (Thomas, 1992). *Podisus nigrispinus* is commonly found in all regions of Brazil and applied in different types of researches (Pires et al., 2015). *Podisus fuscescens* (identified as *P. distinctus* (Stål) in the last two decades) is also widely found in Brazil and is easily distinguished from *P. nigrispinus* by morphological characteristics of the pronotum and genitalia (Brugnera et al., 2020). *Podisus sagitta* is northern distributed and very similar to *P. nigrispinus*, being sympatric in Costa Rica, Panama, Colombia, and Venezuela (Thomas, 1992; Castro-Huertas et al. 2015).

Oliveira-Júnior et al. (2021) present a new record for *Podisus sagitta* (Fabricius, 1794) in Brazil, including information about its natural history based on specimens reared under laboratory conditions. The first determination of the species was made in 2016 by Dr. Jocélia Grazia as cited by Oliveira-Júnior et al. (2021). In 2016, Dr. Jocélia provided the identification based on Thomas's identification key and description (1992). More recently, with new studies and access to type specimens of *Podisus*, the diagnostic delimitations of this species have been clarified, providing a more precise identification (Brugnera et al., 2020). During the review process of the manuscript of Oliveira-Júnior et al. (2021), the identification made in 2016 was corrected to *Podisus nigrispinus* (Dallas, 1851); however, it was published incorrectly as *P. sagitta*. This note aims to correct that misidentification.

This is not the first time that *Podisus nigrispinus* and *Podisus sagitta* are confounded. Clercq and Degheele (1995) also reported the same misidentification of specimens collected in Surinam (Clercq and Degheele, 1990). *Podisus nigrispinus* and *P. sagitta* are very similar in overall morphology, including the parameres of male genitalia. They can be distinguished mainly by the shape and coloration of the pronotum. The anterolateral margins of the pronotum present a distinct coloration and are concave in *P. nigrispinus*, which varies from pale to red, always differing from the pronotal disc (Figures 1d, 1f). *P. sagitta* does not present this feature, being the anterolateral margins of pronotum sinuous and concolorous with the disc (Figures 1a and 1c). Additionally, *P. sagitta* usually presents the humeral angles anteriorly directed (Figure 1c), instead of laterally directed as observed in *P. nigrispinus* (Figure 1f). In addition, females of *P. sagitta* present a single dark spot in the VII sternite (Figure 1b), instead of a series of spots from III to IV sternites usually observed in females of *P. nigrispinus* (Figure 1e).

The known species distribution (country records) is: *Podisus sagitta* - United States (Texas, Florida, and New Mexico), Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Cuba, Bahamas, Jamaica, Dominican Republic, Haiti, Puerto Rico, Saint Vincent and the Grenadines, Curaçao, Trinidad and Tobago, Colombia, and Venezuela (Thomas, 1992; Castro-Huertas et al., 2015; GBIF, 2021) (Figure 2). *Podisus nigrispinus* - Costa Rica, Panama, Colombia, Venezuela, Ecuador, Surinam, Guyana, French Guiana, Brazil, Peru, Bolivia, Argentina, Paraguay, and Uruguay (Thomas, 1992; Dellapé et al. 2003; Lupoli, 2019; GBIF, 2021) (Figure 2).

In summary, the results presented by Oliveira-Júnior et al. (2021) must be assigned to *P. nigrispinus* and not to *P. sagitta*. We warn that the classification of *Podisus* is currently unresolved, including the genus monophyly, the diagnosis of species and the available identifications keys. Thus, the identification of the species needs to be done with caution to avoid future misinterpretations.

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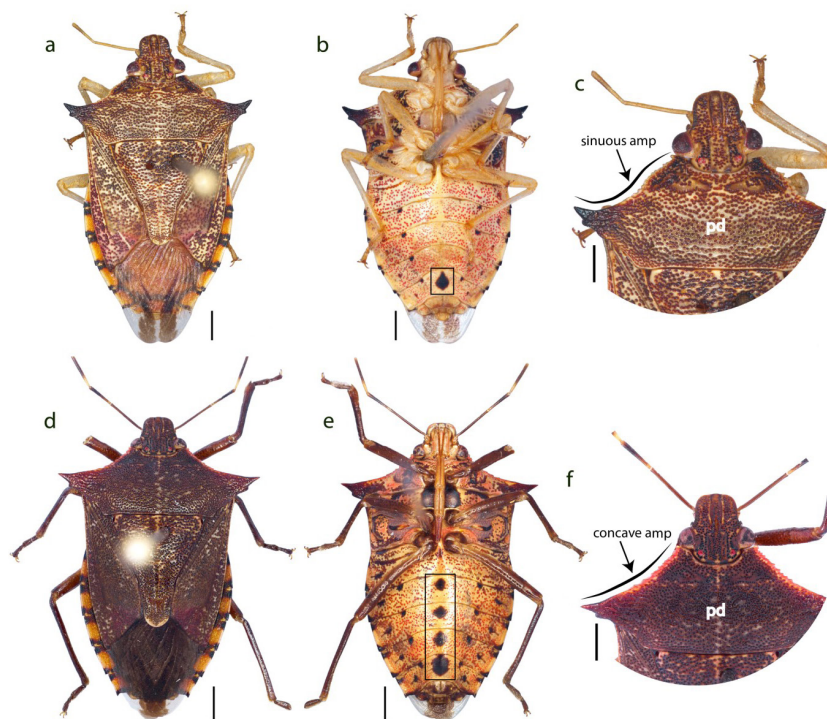


Figure 1. Habit of *Podisus sagitta* (a-c) and *Podisus nigripinus* (d-e). (a) and (d) dorsal view; (b) and (e) ventral view; (c) and (f) head and pronotum in dorsal view. amp = antero-lateral margin of pronotum; pd = pronotal disc. Squares in the figures b and e represent the distribution of dark spots in the female sternites.

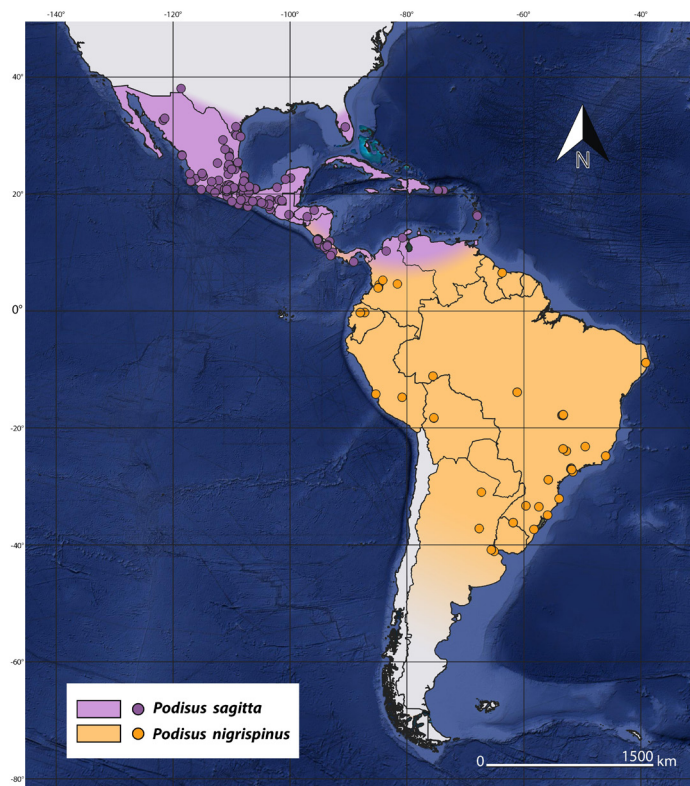


Figure 2. General distribution of *Podisus sagitta* (Fabricius) and *Podisus nigripinus* (Dallas) in the American continent. Spots represent GBIF occurrences (GBIF, 2021).

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