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SCIENTIFIC NOTE

An Invasive Pentatomid Pest in Argentina: Neotropical Brown Stink Bug, *Euschistus heros* (F.) (Hemiptera: Pentatomidae)

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Abstract

This is the first record on the invasion of the Neotropical brown stink bug, *Euschistus heros* (F.) in Paraná County (latitude 31º 51' 9.6" S, longitude 60º 32' 11.2" W), Entre Ríos province, Argentina. Five adults were intercepted in 2009/2010, one in crop residues and four on soybean fields. The expanding range in the distribution of *E. heros* in the Southern Hemisphere is believed to be due to the increased commercial trade among countries, increase in the area cultivated with soybean, and the adoption of no-tillage cropping systems.

Soybean (*Glycine max*) is a growing important crop in Argentina, including the area located in Entre Ríos province (Fig 1). In the 2007/2008 season, 1.12 millon ha were cultivated with soybean in the province, which is over 60% of the total area cultivated in the country (Rodríguez & Cancio 2009).

Caterpillars and stink bugs are main insect pests that damage soybean in Argentina, in particular the later that cause irreversible damage to developing seeds (Gamundi & Sosa 2008). In the Entre Ríos province, the stink bug complex is formed by *Piezodorus guildinii* (Westwood) (44.5%), *Nezara viridula* (L.) (21.0%), *Edessa meditabunda* (F.) (18.5%), and *Dichelops furcatus* (F.) (16.0%) (Saluso *et al* 2007).

During 2009, field surveys of stink bugs were conducted at the Paraná Field Experiment Station, in Paraná county, Entre Ríos province, Argentina (31º 51' 9.6" S, 60º 32' 11.2" W). Surveys were taken by using sweep net and beat cloth on plants (cultivated and wild) and by examining crop residues on the ground. During September, 2009 a single female of the Neotropical brown stink bug, *Euschistus heros* (F.), was intercepted from crop residues. Later, during the soybean cultivation on March-April 2010, another four adults (three females and one male) were collected from soybean plants. To our knowledge, this is the first record on the occurrence of *E. heros* in Argentina. Specimens of *Euschistus* have been mentioned to occur on soybean in the Santa Fe province in that country (Gamundi *et al* 2007); however, these bugs are not available to allow further examination to confirm their taxonomic status. Traditionally, pentatomids of the genus *Euschistus* are not referred to occur as pests in Argentina (Rizzo 1976).

Euschistus heros is known to be fast expanding in Brazil towards the Southern Region. Once rare on soybean (Panizzi *et al* 1977), this stink bug is the most common species on this crop nowadays, even in areas where its occurrence was uncommon, such as in Rio Grande do Sul state (Roggia 2009). Its presence in Paraná, Entre Ríos, is probably due to the tremendous increase in numbers of this bug in Brazil in recent years and the intense commercial trade between Argentina, Brazil and Chile, using mostly roads. In addition, the augmentation in the area cultivated with soybean and the adoption of no-tillage cultivation systems of major crops in a large scale in Argentina may be favoring the population increase of *E. heros*. Global warming is also suspected to be favoring its increase; this bug is known to be better adapted to

the warmer regions of Brazil (Cividanes & Parra 1994). *Euchistus heros* is also known to search for shelter on crop residues during unsuitable conditions (Panizzi & Niva 1994), and this is believed to be strongly pushing its abundance. Interesting to note that *E. heros* has not been found yet in Uruguay, which is close and within the similar latitude of Entre Ríos (Fig 1), despite the survey efforts in that country (M S Zerbino, personal communication to A R P). However, we suspect that its invasion to this country is a matter of time.

The invasion of *E. heros* in Argentina, and much probably its expansion toward other neighboring soybean producer countries is an invasive event of great concern. This bug is an important pest in Brazil where it first appeared causing severe damage and demands a massive use of insecticides every year. Therefore, the newly invaded areas should be effectively monitored and control measures should be implemented once it is detected to avoid its establishment and population growth.

Fig 1 Area where the Neotropical brown stink bug, *Euschistus heros*, was found on crop residues and on soybean plants in Paraná County, Entre Ríos province, Argentina, in 2009/2010.

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