A NEW RECORD OF A SOCIAL SPIDER, *ANELOSIMUS LORENZO*
FOWLER AND LEVI, 1979 (ARANEAE, THERIDIIDAE), FROM A
TEMPERATE ZONE (URUGUAY)

UN NUEVO REGISTRO DE UNA ARAÑA SOCIAL, *ANELOSIMUS LORENZO*
FOWLER Y LEVI, 1979 (ARANEAE, THERIDIIDAE), DE UNA ZONA
TEMPLADA (URUGUAY)

Carmen Viera^{1,2,3} & Luis F. García^{1,2}

¹Departamento de Entomología, Facultad de Ciencias, Universidad de la República, Iguá 4225, 11400, Montevideo, Uruguay.

²Laboratorio Ecología del Comportamiento IIBCE. Av. Italia 3318, 11200, Montevideo, Uruguay.

³E-mail: cviera@fcien.edu.uy

RESUMEN

Se registra *Anelosimus lorenzo* para Uruguay, constituyendo el hallazgo más austral de la especie. El presente registro confirma la inusual presencia de una araña social para una zona de clima templado. Con este nuevo reporte, el número de especies de *Anelosimus* conocidas para este país se eleva a tres.

The family Theridiidae is one of the most diverse spider groups with 2295 recognized species (Platnick 2009). Although not as diverse as other genera of this family, *Anelosimus* Simon, 1891 is relevant because it contains solitary, subsocial, and social species (Avilés 1997). Avilés (1997) suggests that sociality could have evolved several times within *Anelosimus* and as such, it has played a key role in order to understand the evolution of spider sociality. In a series of studies, Agnarsson (2004, 2005, 2006) and Agnarsson *et al.* (2006), have clarified different systematic aspects of this group; nevertheless, the species of this genus still remains partially unknown, e.g., the taxonomic identity of the Uruguayan subsocial form referred as to *A. cf. studiosus*.

In Uruguay there are records of two subsocial spiders: *Anelosimus ethicus* Keyserling, 1884 (Benamú-Pino unpublished data) and *A. cf. studiosus* (Agnarsson, pers. com.). The behavior of the latter has been intensively studied (Viera & Albo 2008; Ghione *et al.* 2004; Albo *et al.* 2007; Viera *et al.* 2006, 2007a, 2007b, 2007c).

In this paper we report the first Uruguayan record of the species *A. lorenzo* Fowler & Levi, 1979. Studied specimens were deposited in Colección Entomológica de la Facultad de Ciencias (FCEN Ar-2471).

Nests from two sites were collected: 1) Estación Experimental "Las Brujas" of INIA (Instituto Nacional de Investigación Agraria), Canelones (34° 39' S; 56° 21' W). This nest was found associated to *Acacia caven* Molina, 1810 (Fabales: Fabaceae), and had 180 individuals (Fig. 1). *Acacia caven* presents spines that could provide protection to the spiders. 2) Playa la Agraciada, Soriano (33° 48' S; 58° 25' W). This nest was found associated to *Schinus lentiscifolius* Marchand, 1869 and had 152 individuals. In both nests spiders were mostly juveniles. Therefore, to identify the species and to know the secondary sex ratio, juveniles were raised under lab conditions (average temperature 17±3°C, humidity 70%) maintaining original colonies composition, during four months. Sex ratio was extremely biased toward females: 10 males and 170 females in the first nest and 13 males

FIGURE 1. Records for *Anelosimus lorenzo*. Circles indicate previous records according to Agnarsson (2006), squares indicate new records from Uruguay: 1) INIA “Las Brujas”, Canelones; 2) Playa la Agraciada, Soriano.

FIGURA 1. Registros de *Anelosimus lorenzo*. Los círculos indican los registros anteriores según Agnarsson (2006), los cuadrados indican los nuevos registros de Uruguay: 1) INIA “Las Brujas”, Canelones; 2) Playa la Agraciada, Soriano.

and 136 females in the second one. This biased sex ratio is typical of social spiders like *Anelosimus eximius* (Keyserling, 1884) (Buskirk 1981). The specimens were fed *ad libitum* with *Drosophila* sp. flies, even when most of food items found in the nest were carcasses of beetles (Coleoptera: Bruchidae, Chrysomelidae, Coccinellidae, Curculionidae), bees (*Apis mellifera*), wasps (Hymenoptera: Vespidae), ants (Hymenoptera: Formicidae), leafhoppers (Hemiptera: Cicadellidae), and flies (Diptera: Calliphoridae). In the case of *A. lorenzo*, additional observations performed by Fowler & Levi (1979), suggest that this species like other social spiders can build nests of almost 1.4 m³, with 550 individuals. It is possible that Uruguayan climatic conditions prevent the species reaching those large numbers.

A. lorenzo and *A. rupununi* Levi, 1956 form the *rupununi* group (Agnarsson, 2006). Although both species are very similar, the former can be distinguished from the later by the presence of

a thicker basal portion of male embolus, by the extended base of the embolus directed towards the palpal tibia (Fig. 3a) and by a more rounded female epyginum (Figs. 3b, 3c). In addition, adults of *A. lorenzo* are considerably larger than adults of *A. rupununi* (Agnarsson 2006). All characters mentioned above, were found on our specimens. However, the dark spot pattern on leg I was not observed (Fig. 3d) this character is not present in all populations of *A. lorenzo* and would not be widespread among the group.

The presence of this social spider in Uruguay is an unusual finding, because most of social species live on tropical countries, while Uruguay presents a temperate and markedly seasonal weather (max. temp: 21.0°C, min. temp: 11.7°C, average precipitation: 1136 mm per year) compared to places where this species had been previously recorded: i.e. Manaus, Brazil (max temp: 31.9°C, min temp: 24.9°C, average precipitation: 2300 mm per year);

FIGURE 2. Nest of *Anelosimus lorenzo* on *Acacia caven*. Arrow indicates the nest.

FIGURA 2. Nido de *Anelosimus lorenzo* sobre *Acacia caven*. La flecha indica el nido.

San Lorenzo, Paraguay (max temp: 28.9°C, min temp: 17.4°C, average precipitation: 1600 mm per year); Catamarca, Argentina (max temp: 26.3°C, min temp: 10.9°C, average precipitation: 307 mm per year) (Hijmans *et al.* 2004). According to Buskirk (1981), Riechert & Jones (2008), Jones *et al.* (2007), Witehouse & Lubin (2007), and Powers & Avilés (2007) the continuous flow of food availability represents the critical factor that would limit the distribution of social spiders to tropical zones. In addition, lack of a supply of sufficient large preys may be a determinant factor to avoid the presence of social spiders in temperate zones like Uruguay. In fact, social spiders are unknown in countries with temperate weather according to the list elaborated by Olivera-Gonzaga (in lit). The new record we provide on this paper is the most austral for this species, which had been recorded previously for Argentina, Brazil and Paraguay (Agnarsson, 2006) being 7° 4' southern than the last record. Finally, this new record, together with those two of Laborda & Simó (2008), indicates that much remains to be learnt about basic aspects of the Uruguayan spider assemblage.

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FIGURE 3. *Anelosimus lorenzo*: a) ventral view of the palp; b) epigynum; c) internal epigynum and d) lateral view of leg I of male.

FIGURA 3. *Anelosimus lorenzo*: a) vista ventral del palpo; b) epigino; c) epigino interno y d) vista lateral de la pata I del macho.

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