Presence of *Panstrongylus rufotuberculatus* (Champion, 1899) (Hemiptera: Reduviidae: Triatominae) in Argentina

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Panstrongylus rufotuberculatus *is reported for the first time in Argentina. Four adults were attracted by the light of human dwellings in Calilegua National Park, Jujuy, at 1150 masl within the subtropical humid forest. The individuals were similar to those described in the literature. The epidemiological significance of this species is very low in the area, although deforestation might increase its role in the transmission of* Trypanosoma cruzi.

Key words: *Panstrongylus rufotuberculatus* -Triatominae - Argentina

The triatomines *Panstrongylus megistus* (Burmeister), 1835, *P. guentheri* Berg, 1879 and *P. geniculatus* (Latreille,1811) are the only species of the genus *Panstrongylus* Berg, 1879 previously reported from Argentina. *Panstrongylus rufotuberculatus* (Champion, 1899) is already known from Mexico, Costa Rica, Panama, Colombia, Venezuela, Brazil, Ecuador, Peru and Bolivia (Lent & Wygodzinsky 1979, Zeledón & Rabinovich 1981). The capture of *P. rufotuberculatus* in Calilegua National Park, Jujuy, is the first report of this species in Argentina and this collection extends the known species distribution, as this triatomine had never been reported south of Chapare province, Cochabamba department, Bolivia (18°30'S). In this paper the individuals found in Jujuy were compared to those preserved in collections and to the descriptions from the literature. The epidemiological potential of this species as a vector of *Trypanosoma cruzi* in Argentina and the variability of the species is also discussed.

MATERIALS AND METHODS

Specimens of *P. rufotuberculatus* were collected in the "Mesada Las Colmenas" Sector, Calilegua National Park, Province of Jujuy (23°41'33"S, 64°51'27"W, 1150 masl). The collecting site is surrounded by mountain forest. Two individuals, a male and a female, were attracted by light to the exterior wall of the house of the park ranger on 23 October 1997.

The specimens were kept in 70% alcohol until they could be compared with the re-descriptions made by Lent and Wygodzinsky (1979), and Lent et al. (1998). A caliper (0.01 mm) was used and measurements made using an ocular micrometer.

A third individual was compared with the collection from different countries deposited in the collections of Lent and of Carcavallo at the Oswaldo Cruz Institute, Rio de Janeiro (IOC Collection).

RESULTS

Three species of the genus *Panstrongylus* Berg, 1879 were reported for Argentina: *P. guentheri* Berg, 1879, *P. geniculatus* (Latreille, 1811) and *P. megistus* (Burmeister, 1835). *P. rufotuberculatus* (Champion, 1899) differs from the two former species because it has the posterior process of the scutellum short and rounded, the anterior lobe of the pronotum with well developed antero-lateral and discal tubercles and distinct pattern of coloration. *P. megistus* also has the tubercles described but their color pattern is different (black connexivum, with a slender red posterior spot in each segment, the overall color being red spotted black or red spotted dark brown, very contrasting with the pronotum). The jugae of *P. megistus* have hook-like projections while in *P. rufotuberculatus* these are blunt. The species described by Champion is very variable, the connexivum being yellow, orange or reddish, with a rectangular central spot in each segment, slightly biconcave, and with a thin black band close to the intersegmental su-

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ture. The overall body color is yellowish-green (unusual among triatomines), and the pronotum, hemielytra, legs and head are patterned with brown, gray, black or reddish. The green color is lost after a couple of years in dried specimens and in individuals exposed to chemical preservatives such as alcohol, ether and formalin.

The specimens collected at Calilegua correspond fairly well with the re-description by Lent and Wygodzinsky (1979), and the measurements recorded by Lent et al. (1998). The variability in chromatic, morphologic and morphometric characters were remarked on by the former authors. The overall length of *P. rufotuberculatus* varies greatly, even among individuals of different parts of the same country; thus individuals from Monagas State in Venezuela measured 28 mm, while those of Cojedes State, measured only 17 mm (IOC Collection). Thus, the comparison reported in the Table is compatible with the intraspecific variability of a very variable species. The ratio widht of eye to synthlipsis, and the shape of the setae of the Argentinian insects were closer to those from Panama (Barro Colorado) than to those from Peru (Convencion Valley, Cuzco Dept.) depicted and detailed by Lent and Wygodzinsky (1979). However, the carinae limiting the central depression of the scutellum is similar to specimens from Costa Rica, Venezuela, Peru, Bolivia and Brazil (entire black scutellum) but with a different pattern from the Panama and Colombia insects (red or reddish carinae).

According to Lent and Wygodzinsky (1979): "The variability described seems to be geographical in nature". To support this hypothesis the variability found among the individuals from the same site is usually narrower than that of populations from different countries. The single *P. rufotuberculatus* from Calilegua compared with those deposited at the IOC shares many characters with the specimens from Bolivia (Nor Yungas and Chapare), and with four specimens recently collected from Costa Rica between 100 and 1500 masl (R Zeledón leg.).

DISCUSSION

The presence of *P. rufotuberculatus* in Calilegua (within the subtropical humid forest) at 1150 masl is consistent with the habitat preference of these specimens reported in the literature. Is also consistent with the fact that the "Las Yungas" humid subtropical forest of Bolivia, where *P. rufotuberculatus* was reported, and the "Tucuman-Oranense" forest of Argentina are contiguous. The first collections of *P. rufotuberculatus* in Bolivia (Prosen & Martínez 1951) were followed by other

TABLE

Comparisons between the specimens of *Pastrongylus rufotuberculatus* re-described by Lent and Wygodzinsky (1979) (LW) and those found in Calilegua, Argentina

Character	LW	Calilegua
Male length	24-27 mm	23.31 mm
Female length	25-28 mm	23.95 mm
Pronotum width	6-7 mm	6.06-6.11 mm
Male abdomen width	8-9 mm	8.04 mm
Female abdomen width	9-10 mm	8.98 mm
Dorsal setae	Different shapes	Like Panama example
Head length: width	1: 0.65-0.80	1: 0.73-0.74
Head: Pronotum length	1: 1.15-1.45	1: 1.14-1.23
Anteocular: postocular length	1: 0.25-0.35	1: 0.21-0.24
Apex of clypeus	Uni or bilobed	Unilobed
Eye width: synthlipsis	1: 1.30-1.85 1: 2.3-3.3[a]	1: 1.88-1.94
Antennae first article	Slightly surpassing clypeus	Not surpassing apex of clypeus
Antennal articles	1: 3.0-3.5: 2.2-2.8: 1.9-2.3	1: 2.8-3.1: 2.3-2.4: 1.9-2.0
Rostrum articles	1: 1.9-2.2: 0.6-0.7	1: 2.4: 0.8
Pronotum color	Dark brown to black	Black
Humeral angle	Narrowly rounded to subangular	Subangular
Scutellum posterior process	Apically or enterely red	Enterely red
Scutellum central carinae	Red or black	Black
Scutellum apex	Rounded, suboval or subglobose	Suboval
Fore femora width: length	1: 3.8-4.7	1: 3.8-4.0
Connexivum pattern: transversal band-median spot	Connected or not along outer	Not connected

a: specimens from Cuzco, Peru.

captures by the same authors (material in several collections), by Torrico (1958) and the collections of Martínez in 1977, which Carcavallo and Martínez (1985) dissected for parasites. Interestingly Noireau et al. (1994) found adults inside houses from the Oriental Mountains (2600 masl) and in Nor Yungas (1500 masl). Furthermore, in the latter site they also collected four nymphs inside houses, which may suggest the beginning of a domicile colonization. In Colombia *P. rufotuberculatus* was found at elevations from 650 to 1100 masl, from the humid tropical forest of the Pacific to the xerophytic forest of the Cauca valley (D'Alessandro & Barreto 1985). In Ecuador *P. rufotuberculatus* was found at 5 and 1066 masl in the coastal provinces of Manabi and Guayas as well as at the humid tropical Andean valleys (Lazo 1985). In Peru this species was collected between 1200 and 1900 masl in the high forest of Cuzco and the northern departments of Tumbes and Piura (Calderón et al. 1985), while in Costa Rica this species also occurs in the humid forest. In Mexico, the insects were attracted by light (Zárate & Zárate 1985) in humid forests of Lacandona, Chiapas state and Los Tuxtlas, Veracruz state.

P. rufotuberculatus has been found naturally infected with *T. cruzi* on several occasions since the first report from Venezuela (Lent & Pífano 1940). Infected specimens were reported from Panama (Sousa 1972, Sousa et al. 1983) and Santa Cruz, Bolivia (Carcavallo & Martínez 1985, insects collected by Martínez and studied by these authors in 1977). A natural infection rate of 14.2% (León & León 1953, Lazo 1985) was found on *P. rufotuberculatus* from the coastal province of El Oro, Ecuador.

The relationship between *P. rufotuberculatus* and potential mammalian hosts of *T. cruzi* was studied by different researchers. Rodríguez and Melo (1942) found this triatomine associated with the kinkajou *Potos flavus*, D'Alessandro et al. (1981) found it in relation with the *Desmodus rotundus* bat in Colombia, and Miles (1979) found it associated with armadillos in the Brazilian Amazon. All these mammals have been found naturally infected with *T. cruzi* (Barreto 1985).

P. rufotuberculatus has been described as a typical sylvatic species that is occasionally attracted by the light of houses surrounded by forest (Lent & Wygodzinsky 1979), as found in the present study. In Bolivia, Borda Pisterna (1985) dismissed any epidemiological role for this species, although Noireau et al. (1994) think that it does have a tendency to colonize houses. In Ecuador the "semidomestic" individuals collected were adapted to the rural mud and cane houses of Loja and El Oro provinces (Zeledón & Rabinovich 1981, Lazo 1985). The domestication of *P. rufotuberculatus* was also reported in Peru (Calderón et al. 1985), where 38% of 172 mud-mantled houses surveyed in Cuzco Dept. in 1980 were found to be infested. This may be due to the intense deforestation - immediate colonization process (cocoa, coffee, fruit trees plantations) that occurs in the area.

According to biometric and comparative observations with individuals collected in other places, and based on the literature available, we conclude that the specimens from Calilegua (Jujuy) are consistent with the intraspecific variability of *P. rufotuberculatus*. Another two adults of *P. rufotuberculatus* were collected in the same place in February, 1996, as reported to the National Service of Chagas in November of that year (Ripoll, pers. comm.).

The absence of previous reports of *P. rufotuberculatus* for Argentina may be due to: (a) lack of previous collections from the sampled area, (b) low population densities of this species, or (c) colonization of the area by *P. rufotuberculatus* may be relatively recent. The epidemiological potential of this species for *T. cruzi* transmission in Argentina may be reduced by the restricted localization of its populations, despite its broad continental distribution. However, a role for *P. rufotuberculatus* in the non-domestic cycle of *T. cruzi* should not be discarded. The mammal species that have been found naturally infected elsewhere are species and families of mammals found in Calilegua. The reports of domiciliation of *P. rufotuberculatus* following deforestation in Bolivia, Ecuador and Peru should also be taken into account, even in small areas.

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