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**ON THE GENUS *CHACTAS* GERVAIS, 1844 IN PERU  
WITH THE DESCRIPTION OF A NEW SPECIES**  
(Scorpiones: Chactidae)

**Abstract.** Although the presence of the genus *Chactas* Gervais, 1844 in Peru was reported by MELLO-LEITÃO (1945), this record remained confused and not confirmed until LOURENÇO & DASTYCH (2001) discovered two specimens from Central Peru (respectively from the regions of Ucayali and Pasco) and described them as a new species: *Chactas koepcke* Lourenço & Dastych, 2001. In the present work, a second species, *Chactas adornellae* **sp. n.**, based on a single male specimen, is described from Satipo Province, in the Junín region, where scorpions of the genus *Chactas* were never regarded. *Chactas adornellae* **sp. n.** represents the most southern species of the genus. An identification key of *Chactas* species from Brazil, Ecuador and Peru is proposed.

**Riassunto.** Nota sul genere *Chactas* Gervais, 1844 in Perù con la descrizione di una nuova specie (Scorpiones: Chactidae). Sebbene la presenza del genere *Chactas* Gervais, 1844 in Perù venne riportata da MELLO-LEITÃO (1945), questa segnalazione rimase confusa e non confermata fino a quando LOURENÇO & DASTYCH (2001) scoprirono due esemplari del Perù centrale (rispettivamente dalle regioni di Ucayali e Pasco) e li descrissero come una nuova specie: *Chactas koepcke* Lourenço & Dastych, 2001. Nel presente lavoro, una seconda specie, *Chactas adornellae* **sp. n.**, basata su un singolo esemplare maschio, è descritta dalla provincia di Satipo, nella regione di Junín, dove scorpioni del genere *Chactas* non erano mai stati segnalati. *Chactas adornellae* **sp. n.** rappresenta la specie più meridionale del genere. Una chiave identificativa delle specie di *Chactas* del Brasile, dell'Ecuador e del Perù viene proposta.

**Key-words.** *Chactas*, *C. adornellae*, Peru, Junín, Amazonia.

### Introduction

The genus *Chactas* Gervais 1844 is closely related with the genus *Teuthraustes* Simon, 1878 from which it differs for few characters such as the size of the basal most denticle in the fixed finger of pedipalps. It is a typical element in the rain forest areas from Central America (TERUEL & COZJIN, 2011), South America (LOURENÇO, 1991) and also, with a single species, in the Caribbean Islands (FRANCKE & BOOS, 1986). The larger number of species are concentrated in Colombia (LOURENÇO, 1997) and Venezuela (GONZÁLEZ-SPONGA, 1996) while only few species are known from the other south-American countries. Scorpions of this genus were reported from Peru for the first time by MELLO-LEITÃO (1945) in his monograph about south-American scorpions in which he indicated for Peru only one species: *Chactas brevicaudatus* (Karsch, 1879). However, SISSOM (2000) regarded that the reference for Peru was wrong, also supported by LOURENÇO (1991), who considered *C. brevicaudatus* an endemic species in Colombia. Later, LOURENÇO & DASTYCH (2001), discovered two specimens of the genus *Chactas* from central Peru in the Zoologisches Institut und Zoologisches Museum (Hamburg, Germany) collections and described them as a new species: *Chactas koepcke* Lourenço & Dastych, 2001. These specimens were collected in two different localities near to the border with the region of Huánuco: the adult holotype from the region of Ucayali and the juvenile paratype from the region of Pasco.

With the description of *Chactas koepcke* the status of that population was clarified and the presence of the genus *Chactas* in Peru was, for the first time, officially reported, with a precise reference about its distribution: surely in the regions of Pasco and Ucayali, and with an high probability also in the region of Huánuco, all localities in central Peru. Now, a second species, *Chactas adornellae* **sp. n.** is reported from Satipo Province, in the region of Junín, at least 200 km more southern than the localities where *C. koepcke* is known, thus, presently, *Chactas adornellae* **sp. n.** is regarded as the most southern species of the genus *Chactas*.

In Brazil only one species of *Chactas* is known and it was reported by LOURENÇO *et al.* (2005) from the state of Amazonas, near the border with Peru. Concerning Ecuador, LOURENÇO (1995, 1997) demonstrated that *C. vanbenedenii* (Gervais, 1843) is an element of southern Colombia and that the single species present in Ecuador is *C. mahnerti* (Lourenço, 1995). Taking in account the very small distribution of all *Chactas* species, truly microendemism (LOURENÇO, 1997), *C. adornellae* **sp. n.** is compared with the species known from Peru, Brazil and Ecuador, which are also the most closely related species for morphology. An identification key for those species is proposed.

### Material and methods

Digital images were edited with Gimp® 2.6. Morphology and measurements (in mm) mostly follow HJELLE (1990) and SISSOM *et al.* (1990), respectively.

#### Abbreviations:

ACSA = Aracnofilia – Centro Studi sugli Aracnidi, previously Italian Arachnological Society, Massa, Italy;

ARPC = Private collection of Andrea Rossi, Massa, Italy;

MNHN = Muséum National d'Histoire Naturelle, Paris, France;

MSNB = Museo di Scienze Naturali "E. Caffi" di Bergamo, Bergamo, Italy;

MZUF = Museo di Storia Naturale dell'Università di Firenze, sezione di Zoologia "La Specola", Florence, Italy

L = length; W = width; H = height

### Description of the new species

**Family Chactidae** Pocock, 1893

**Genus *Chactas*** Gervais, 1844

#### ***Chactas adornellae* sp. n.**

**Type material:** adult ♂ holotype; Peru: Rio Venado, Satipo province, Junín region, 1050 m a.s.l., 21-X-2011, leg. local collector, (ARPC n. 0065, formally in ACSA).

**Etmology:** the species is named in honor of Mrs Adornella Politi, for her kind help.

**Diagnosis:** Species of small size for the genus, under 35 mm in total length (Figs 1-2). General coloration reddish brown intensely marbled, with legs, pedipalps and telson reddish-yellow. Median eyes big and located in the anterior half of carapace. Metasomal segments with ventral carinae absent; dorsal carinae complete in metasomal segment IV. Ventral side of vesicle finely granulated. Movable fingers with 8 rows of granules. Pectines with 7/7 teeth. First metasomal segment strongly wider than long.

**Description:** based on male holotype. Measurements are given in Tab. 1.

**Coloration:** carapace basically reddish-brown, intensely marbled. Tergites dark reddish-brown, all densely marbled. Sternites brownish. Pectines, sternum and genital operculum pale yellowish-brown. Metasomal segments are uniformly dark reddish-brown whereas telson is yellowish-brown. Chelicerae are basically reddish-yellow but they are densely obfuscated and reticulated, especially in the anterior part; the teeth are brown. Pedipalps are reddish-brown, in particular femur and patella; chela is relatively lighter, yellowish-

brown, with fixed and movable fingers reddish-brown. Legs are uniformly pale yellowish-brown.

*Prosoma*: the carapace is almost smooth and shiny; only a little dotted on the lateral portions. Median eyes are big and dark, definitely in the anterior half of carapace. Three pairs of lateral eyes present on the corners of the anterior margin of carapace. The carapace has a trapezoidal shape and its anterior margin shows a small concavity in the median line.

*Mesosoma*: tergites overall smooth and lustrous, without carinae. Only some very small pointed granules could be irregularly present. Sternites smooth. Spiracles relatively elongated with an oval shape.

*Metasoma and telson*: metasomal segments relatively short, with the first segment strongly wider than long and the second segment wider than long. The carinae are very reduced in all segments. Metasomal segment I to IV are without ventral and lateral carinae; in I to III metasomal segments only reduced dorsal carinae present, represented in the distal portion by only two spinoid granules in segment I, by three spinoid granules in segment II and by five or six in segment III. Segment IV shows completed dorsal carinae represented by several granules along all its length. Segment V without real ventral and ventral lateral carinae: they are replaced by an irregular presence of several spinoid tubercles, limited to the distal portion of the segment; dorsal carinae are composed by many dense and irregular pointed granules on all its surface. The vesicle is almost smooth, with very fine granules only on the ventral surface, and relatively elongated. Aculeus short, slightly curved and extremely thin. Few thin and very short hairs present on the telson.

*Chelicerae*: typical dentition of family Chactidae, as defined by VACHON (1963): movable finger with two subdistal teeth of the same size and a basal tooth. Chelicerae shiny and densely reticulated.

*Pedipalps*: femur with three marked carinae: dorsal internal, dorsal external and ventral internal carinae, all composed by spinoid granules. Patella with two marked carinae: dorsal internal and ventral internal carinae composed by several granules; other carinae absent. Chela with dorsal internal carinae composed by low and almost smooth granules; internal face with some granules. Movable fingers with dentate margins granular, disposed in 8 rows, quite linear; fixed fingers instead with 7 rows, equally quite linear. Chela and patella lustrous. Trichobothriotaxy type C (VACHON, 1974). Chela with 5 ventral trichobothria; patella with 5 ventral, 8 dorsal and 17 external trichobothria; femur with 3 dorsal trichobothria (Figs 3-6).

*Legs*: tarsi with several setae, more numerous on leg IV. Pedal spurs present.

*Pectines, genital operculum and sternum*: Pectinal count 7/7 teeth; fulcra absent. Genital operculum wider than long, with a triangular shape. Sternum pentagonal.

**Comparisons**: *Chactas adornellae* **sp. n.** is the species of the genus *Chactas* with the most southern distribution. It could be distinguished by *Chactas koepcke* Lourenço & Dastych, 2001, the species with the nearest distribution and the only other species of *Chactas* known from Peru, by a combination of characters: 1) different morphometric values, in particular those of metasomal segments; in *Chactas adornellae* **sp. n.** the metasomal segments are stocky, with the first segment strongly wider than long, and the second segment again wider than long while in *C. koepcke* first metasomal segment is almost as long as wide; 2) different shape of male chela: chela in *Chactas adornellae* **sp. n.** is stocky with L/W ratio of about 3.4 while in *C. koepcke* it is of about 4.2; 3) ventral carinae on V metasomal segment are limited to the proximal portion in *Chactas adornellae* **sp. n.** while they are more abundant in *C. koepcke* (see Fig. 1 in LOURENÇO, 2001); 4) only three carinae are present on pedipalp femur of *Chactas adornellae* **sp. n.** while they are five in *C. koepcke*.

*Chactas adornellae* **sp. n.** could be distinguished by *Chactas braziliensis* Lourenço, Aguiar & Franklin, 2005 because: 1) *Chactas adornellae* **sp. n.** has dorsal carinae on metasomal segment III and IV with spinoid granules while *Chactas braziliensis* does not have dorsal carinae on those segments; 2) carapace and tergites in *C. adornellae* **sp. n.** are totally densely marbled, whereas in *C. braziliensis* they have uniform colour; 3) the vesicle of *C. braziliensis* is totally smooth but in *C. adornellae* **sp. n.** the ventral surface of the vesicle

shows fine granules; 4) chelicerae are densely reticulated in *C. adornellae* **sp. n.** while in *C. braziliensis* they are not reticulated.

*Chactas adornellae* **sp. n.** can readily be differentiated from *C. mahnerti* Lourenço, 1995 for: 1) total length, 34 mm against 52 mm; 2) a very different shape of male chela, which is clearly narrower and longer in *C. mahnerti* (L/W ratio is about 3.4 in *C. adornellae* **sp. n.** and it is 5 in *C. mahnerti*); 3) lateral and ventral side of telson and carinae of metasomal segments are more granulated in *C. mahnerti*; 4) anterior margin of carapace is convex in the male of *C. mahnerti* but it has a median concavity in the male of *C. adornellae* **sp. n.**



Fig. 1-2. *Chactas adornellae* **sp. n.** male holotype. 1. Dorsal view. 2. Ventral view (Scale bar = 10 mm).

**Ecological and distributional notes:** The holotype of *Chactas adornellae* **sp. n.** was collected in the same area of *Hadruroides tongiorgii* Rossi, 2012. As explained by ROSSI (2012), the specimens were found in an area located at medium altitude (1050 m a.s.l.) near to the river Venado ("Rio Venado" in Spanish) in the "Selva central del Perú", part of

the Amazonian forest, in a very moist habitat. This is a new record from the Junín region, the second confirmed species of the genus *Chactas* in Peru and also the most southern record for this genus (Map in Fig. 7). Specimens of the genus *Chactas* seem to be quite common in Colombia and Venezuela, as suggested by the high number of species present in these countries (GONZÁLEZ-SPONGA, 1996; LOURENÇO, 1997) while their presence in Peru seems to be quite rare.

**Other material examined:**

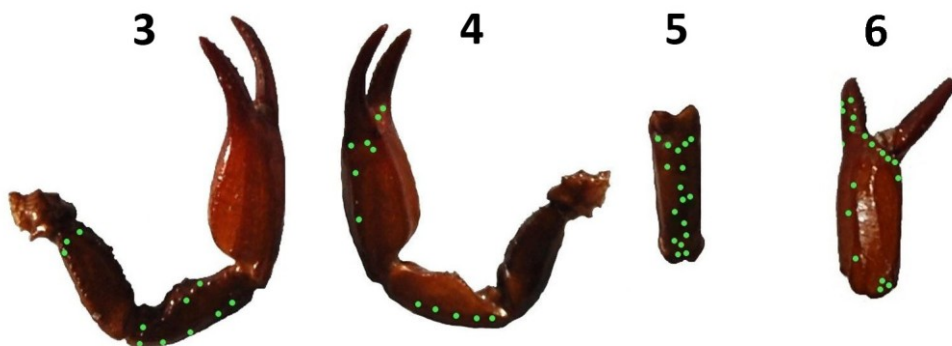
*Chactas mahnerti* Lourenço, 1995: female, Ecuador, province Cotopaxi, 1981, leg. G. Onore, (MSNB).

*Chactas braziliensis* Lourenço, Aguiar & Franklin 2005: female paratype, Brazil, State of Amazonas, Guajara, Rio Ipixuna, 13-19/6/1995, leg. P. Bührnheim & N.O. Aguiar, (MNHN), via excellent digital images.

*Chactas laevipes* (Karsch, 1879): female, Venezuela, El Junquito, 5/1949, leg. G. Marcuzzi, (MZUF).

**Additional note after the submission of the manuscript**

After the submission of the manuscript, a second species of *Chactas* from Ecuador was discovered by LOURENÇO (in press) and described as a new species. It was, however, still possible to add it in the identification key and in the map about the *Chactas* species present in Brazil, Ecuador and Peru.



Figs 3-6. *Chactas adornellae* sp. n. male holotype. 3. Dorsal trichobothrial pattern of femur and patella. 4. Ventral trichobothrial pattern of patella; ventral and internal trichobothrial pattern of chela. 5. External trichobothrial pattern of patella. 6. Dorsal trichobothrial pattern of chela.

**Identification key for *Chactas* species that occur in Brazil, Ecuador and Peru.**

- 1. Small species, up to 35 mm in total length ..... 3
- Medium-large species, between 40 and 52 mm in total length ..... 2
- 2. Male with convex carapace and chela L/W ratio equal to 5 .. *C. mahnerti* Lourenço, 1995
- Male with concave carapace and chela L/W ratio equal to 4 ... *C. sp.* Lourenço (in press)
- 3. Dorsal carinae on metasomal segment III and IV with spinoid granules, vesicle not smooth ..... 4
- Dorsal carinae on metasomal segment III and IV absent, vesicle smooth ..... *C. braziliensis* Lourenço, Aguiar & Franklin, 2005
- 4. Femur with 5 complete carinae; first metasomal segment in male about as long as wide and chela L/W ratio equal to 4.2 ..... *C. koepcke* Lourenço & Dastych, 2001
- Femur with 3 carinae; first metasomal segment in male strongly wider than long and chela L/W ratio equal to 3.4 ..... *C. adornellae* sp. n.



Fig. 7. Map of Brazil, Ecuador and Peru with the distribution of the known *Chactas* species: rhombus = *Chactas braziliensis* Lourenço et al. 2005; triangle = *Chactas koepcke* Lourenço & Dastych, 2001; circle = *Chactas mahnerti* Lourenço, 1995; inverted triangle = *Chactas* sp. Lourenço (in press); square = *Chactas adornellae* **sp. n.**

|                           |                |
|---------------------------|----------------|
| Carapace L/posterior W    | 5.21/5.72      |
| Mesosoma L                | 10.75          |
| Metasomal segment I L/W/H | 1.85/2.44/2.05 |
| Metasomal segment II L/W  | 2.05/2.14      |
| Metasomal segment III L/W | 2.48/2.07      |
| Metasomal segment IV L/W  | 2.90/1.91      |
| Metasomal segment V L/W/H | 4.43/1.83/1.79 |
| Telson L/W/H              | 4.52/1.77/1.67 |
| Aculeus L                 | 1.2            |
| Femur L/W                 | 4.74/1.95      |
| Patella L/W               | 5.09/2.06      |
| Chela L/W/H               | 9.72/2.85/2.30 |
| <b>Total L</b>            | <b>34.19</b>   |
| Pectinal teeth            | 7 – 7          |

Tab. 1. Measurements of *Chactas adornellae* **sp. n.**, male (holotype).

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