

## NEW SPECIES OF *UNICORN* PLATNICK & BRESCOVIT (ARANEAE, OONOPIDAE) FROM NORTH-WEST ARGENTINA

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**ABSTRACT:** A new species of *Unicorn* genus, *Unicorn sikus* sp. nov. (from male and female) is diagnosed, described and illustrated. This new species was collected between 2200-4000m.a.s.l. in different semi-arid sites of Puna and Monte de Sierras y Bolsones eco-regions of the North-West of Salta Province, Argentina.

**KEY WORDS:** Goblin Spider, taxonomy, semi-arid areas, *Unicorn*, new species.

Oonopidae or goblin spiders are a worldwide family of minute, haplogyne spiders that are particularly dominant in leaf litter and humus, especially in the tropics (Tong & Li, 2009). This family is represented by 74 genera and 543 known species all over the World (Platnick, 2010). The *Unicorn* genus, consisting of six known species, was described by Platnick & Brescovit (1995), and has a distribution on Bolivia, Chile and Argentina. This genus seems closest to the monotypic oonopid genus *Xiombarg* (Brignolli, 1979) with actual distribution on the South-East of Brazil and North-East of Argentina (Misiones Province) (Platnick & Brescovit, 1995). Both genera present a cheliceral lamina, terminating in a strong, tooth-shaped process situated opposite the tip of the cheliceral fang; the capsulate tarsal organ; and the uniseriate tarsal claw dentition (Platnick & Brescovit, 1995).

In Argentina, *Unicorn* is represented by only one known species (*U. argentina* (Mello-Leitão, 1940) inhabits in semi-desert sites of the Quebrada del Toro (Mendoza Province-2570m.a.s.l.), and Valle Fértil Department (San Juan Province-1300m.a.s.l.). The lowest altitude where one species of this genus was collected corresponding to the North of Santiago-Chile (1100m.a.s.l.). Other *Unicorn* species were recorded on semi-deserts areas of the North of Chile and Aroma (Bolivia), where the species were collected between 2000-4000m.a.s.l. The new Argentinean species, here described, were collected in different sites of the Puna eco-region (2200-4000m.a.s.l.), from Ingeniero Maury to Muñano, and Monte de Sierras y Bolsones eco-region of the Parque Nacional Los Cardones (2250m.a.s.l.) (Salta Province). The spiders were collected using pit-fall trapping during different ecological studies (2005-2007) carried out by the IEI's arthropods group in Salta Province, Argentina.

### MATERIAL AND METHODS

The studied material is deposited in the Museo de Ciencias Naturales (Colección IEI-FCN) of the Universidad Nacional de Salta (Argentina) (MCN-U.N.Sa). General morphological characters were examined and measured under

an Olympus SZ4540 stereomicroscope. One female specimen was completely cleared with lactic acid 90% in a double boiler during 15 minutes and then observed under a Primo Star Karl Zeiss Microscope. Photographs were taken with a Canon G10 digital camera fixed to the microscopes and transferred to Adobe Photoshop CS2 for adjustment. One male and female were used to take photographs under the Scanning Electron Microscopy (SEM) at the LASEM (Laboratorio de Microscopia Electrónica de Barrido, ANPCyT/UNSa/CONICET, Salta, Argentina). Measurements of leg articles were taken from the dorsal side. All measurement results are given in millimeter.

### Family OONOPIDAE Simon, 1890

#### Genus *Unicorn* Platnick & Brescovit, 1995

**Type sp.:** *Unicorn catleyi* Platnick & Brescovit, 1995

#### *Unicorn sikus* sp. nov.

(Figs. 1-5)

**Types.** Female holotype from Cajonillos (25°14' S 65°56' W), 3085mts, Parque Nacional Los Cardones-Salta (Argentina), Site 6- pitfall-trap, 7/V/2007; Cava, M.B. Col; male and female paratypes from Las Cuevas (24°22' S 66°05' W), 3705mts, Ruta 51, Salta (Argentina), Site 13-pitfall-trap, 19/VIII/2006, González Reyes A.X & J.A. Corronca Cols., deposited in MCN-U.N.Sa (IEBI's Collection).

**Etymology.** The specific name is a noun in apposition taken from the traditional Andean panpipe (sikus) that remember, in part, the anterior clypeal male's projection of this spider genus.

**Diagnosis.** The males of *U. sikus* sp. nov. seem closest to *U. huanaco* (Platnick & Brescovit, 1995) by the general shape of the male embolus, but differ by: the more spherical and larger basal portion of the bulb; the middle portion longer and wider raising near the centre of the bulb (Figs. 4e-4g); and by the bulb finishing in a double twisted embolus tip (Figs. 4d-e), but with the distal end of the embolus shorter and wider than in *U. huanaco* (Fig. 4h). The females of *U. sikus* sp. nov. share with *U. catleyi* (Platnick & Brescovit, 1995) the shape of the distal portion of the single anterior receptaculum with lateral projections, but the end on the new species is wider (Figs. 4b-c). The females are distinguished from others of this genus by: the Y-shaped single anterior receptaculum with two pairs of lateral projections on the distal portion (Fig. 4c); the length of the anterior receptaculum stretching out from the sub-circular sclerotized median plate (Fig. 4b) and by the sub-pentagonal membranous median receptaculum (Fig. 4c).

**Female holotype.** Total length 2.95. Carapace 1.10 long, 0.95 wide. Opisthosoma 1.85 long, 1.45 wide. Chelicerae 0.55 long. Eye measurements: ALE: 0.09, PME: 0.10; PLE: 0.10. PME separated by the half of its diameter from the ALE; PLE separated by one diameter from the PME. Leg lengths: I- femora 1.20, patella+tibia 1.30, metatarsi 1.08, tarsi 0.45, total 4.03; II- 1.30, 1.38, 1.10, 0.43, 4.21; III- 1.23, 1.18, 1.03, 0.38, 3.82; IV- 1.38, 1.20, 1.28, 0.40, 4.26. Leg formula: 4213. Leg spination: Tib. I-III- p0.1.1, r0.1.1, v1.1.2, IV- p1.1.0, r0.1.2, v1.1.2; Mt I- p1.1.0, r1.1.0, v1.2.2, II- p1.1.0, r1.1.0, v1.2.0, III- p1.1.0, r1.1.0, v2.2.1, IV- p1.1.0, r1.1.1, v1.1.2. Carapace pale yellow with four grey lines radiating forward the ocular area finishing on a median-posterior sub-pentagonal grey spot (Figs. 3a-

3d). Chelicerae pale yellow-brown with a median lamina terminating in single, large, tooth-shaped process situated opposite fang tip (Figs. 2a-3e). Long endites with a short serrula composed by a single row of teeth (Fig. 2b). Legs pale yellow clothed with long light grey setae. Tarsi with two claws, with only one single row of long teeth (Figs. 1a-b) and three spatulate setae under them (Fig. 1d). Tarsal organ capsulated with a single slit sensitive organ on all tarsi (Fig. 1c). Pedipalp of the female without a terminal claw (Fig. 2b-c). Opisthosoma whitish with a dark cardiac mark and posterior chevrons as in Figs. 3b-3d; venter pale without markings. Female genitalia as in Figs. 4a-c.

**Male paratype.** Total length 2.45, without clypeal horn. Carapace 1.00 long, 1.00 wide. Opisthosoma 1.45 long, 1.00 wide. Chelicerae 0.57 long. Eye measurements: ALE: 0.09, PME: 0.10; PLE: 0.10. PME separated by little more than a half of its diameter from the ALE; PLE separated by less than one diameter from the PME. Leg lengths: I- femora 1.30, patella+tibia 1.40, metatarsi 1.10, tarsi 0.50, total 4.20; II- 1.45, 1.53, 1.23, 0.53, 4.74; III- 1.33, 1.05, 1.08, 0.45, 3.91; IV- 1.60, other segments missing. Leg formula: 4213?. Leg spination: Tib. I-II- p0.1.1, r0.1.1, v0.0.2, III- p1.1.0, r2.1.0, v0.0.2; Mt I- p1.1.0, r1.1.0, v0.2.2, II- p1.1.0, r0.1.0, v2.2.0, III- p0.0.1, r1.1.0, v2.2.1. Male with a characteristic and large clypeal horn (Fig. 3c) and with an elongated chelicerae (Fig. 3f). Coloration and other somatic characters as in female. Palp of the male as in Figs. 4d-h.

**Other material examined:** ARGENTINA: Salta Province: near Gobernador Manuel Solá (24°35' S 65°50' W), 2554mts, two females, 15/V/2006, González Reyes, A. X. & J.A. Corronca Cols., (MCN-U.N.Sa); climbing the Abra Blanca (24°19' S 66°06' W), 3861mts, one immature, 19/VIII/2006, González Reyes, A. X. & J.A. Corronca Cols., (MCN-U.N.Sa); 12km W. of Santa Rosa de Tastil (24°22' S 66°01' W), 3227mts, one female, 24/II/2006, González Reyes, A. X. & J.A. Corronca Cols., (MCN-U.N.Sa); 14km W. of Ingeniero Maury (24°36' S 65°51' W), 2554mts, one female, 24/II/2006, González Reyes, A. X. & J.A. Corronca Cols., (MCN-U.N.Sa).

**Distribution.** Argentina: Salta Province.

**Remarks:** All the specimens were collected on Monte de Sierras and Bolsones and Puna eco-regions of the North-West of Salta Province, using a pit-fall trapping during the summer, autumn and winter season (Figs. 5a-b). The spiders were collected on semi-arid areas with poor litter coverage, but with a great amount of rocks of different sizes over a sandy soil. The poor vegetation stratum on those eco-regions is low and xeric.

**Note.** The SEM photographs of the spinnerets showing the six spinnerets with spigots and the setose and narrow colulus (Figs. 2d-e). These are the first pictures of the spinnerets obtained to this genus. The anterior spinnerets have three segments, and the posterior ones only two. The anterior spinnerets show spigots of the ampullate glands (Fig. 2d), meanwhile the median and the posterior ones have only spigots of pyriform glands (Fig. 2e). The poor number of available specimens was a limit to taken others pictures where those characters will be showing with better details.

## ACKNOWLEDGEMENTS

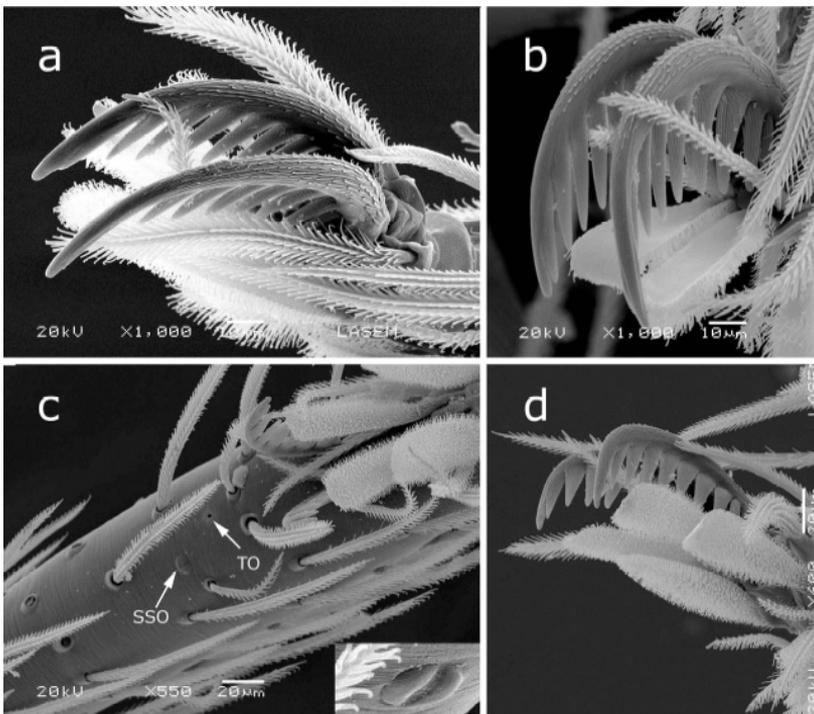
We thank to CIUNSa (Consejo de Investigaciones de la Universidad Nacional de Salta), CONICET (Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina) and APN (Administración de Parques Nacionales) for financial support during the collecting projects realized by the IEBI (Instituto para el Estudio de la Biodiversidad de Invertebrados) in different eco-region of the Salta Province during 2005-2007. We also thank to LASEM (Laboratorio de Microscopía Electrónica de Barrido, ANPCyT/UNSa/CONICET, Salta, Argentina), especially to Pedro Villagrán and Silvia Blanco, for their support in the preparation of the material and to obtain the SEM photographs.

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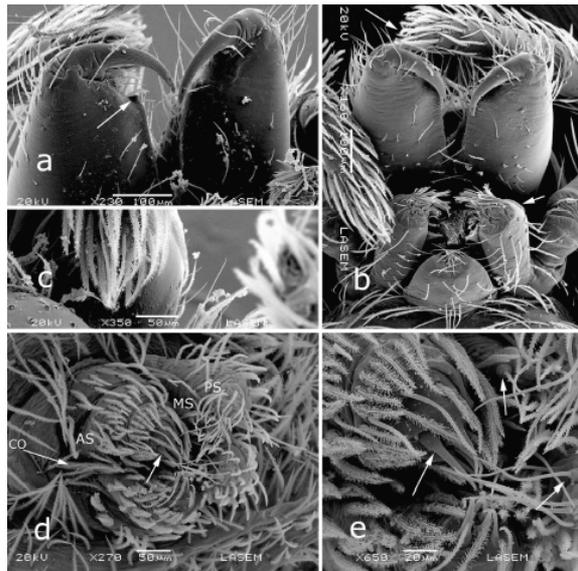
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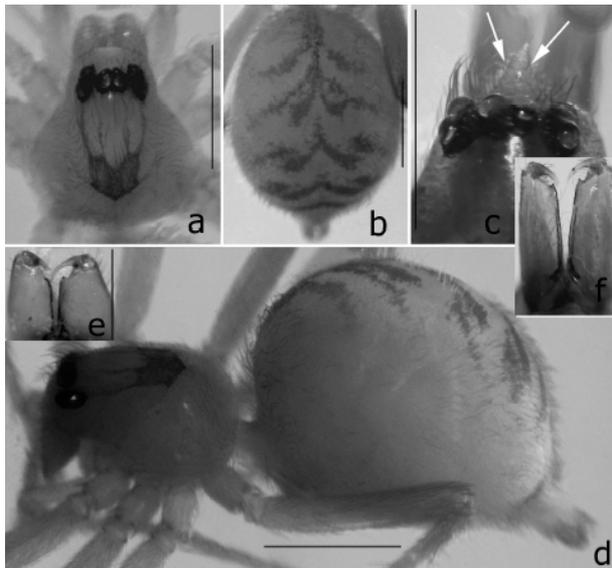
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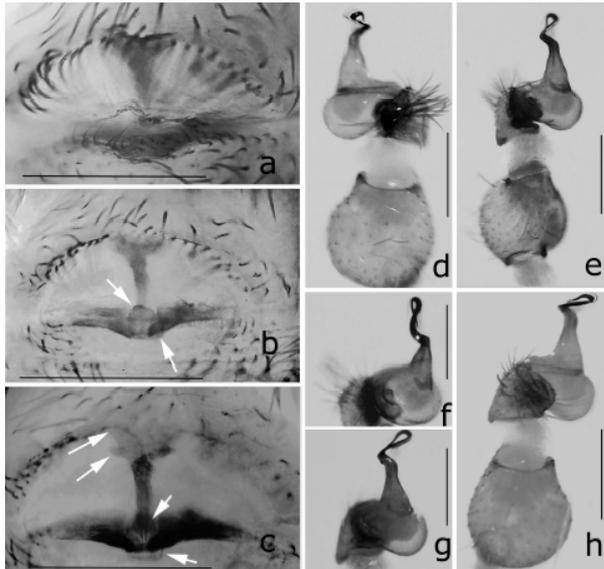
**Figures 1 a-d.** Female of *Unicorn sikus* sp. nov.: a. Claws of leg I, oblique dorsal view; b. Claws of leg IV, distal view showing a single row of long teeth and spatulate setae; c. Tarsi IV, dorsal view showing the capsulated tarsal organ and the single slit sensitive organ; d. Claws of leg IV ventral oblique view showing spatulate setae and lateral setae. The magnification is on the pictures.



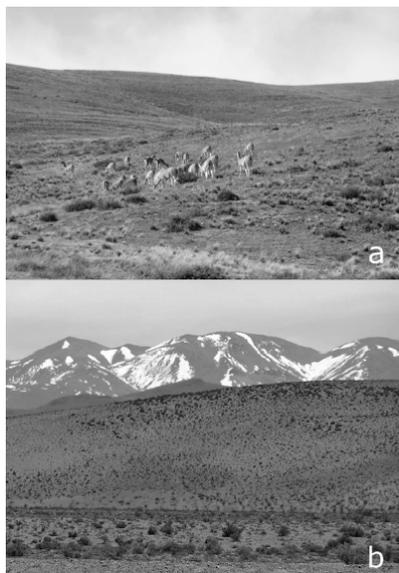
Figures 2 a-e. Female of *Unicorn sikus* sp. nov.: a. Chelicerae, ventral view showing the large tooth-shaped process; b. Ventral view of the carapace showing the serrula, labium, chelicerae and female pedipalp; c. Detail of the female pedipalp without claw; d. Spinnerets, ventral view, showing the setose colulus in anterior position; e. Spinnerets, details of the spigots. The magnification is on the pictures.



Figures 3 a-f. *Unicorn sikus* sp. nov. a. Female carapace showing dorsal view; b. Opisthosoma, female, dorsal view; c. Carapace of the males, dorsal view, showing the clypeal horn; d. Female, carapace and opisthosoma, lateral view; e. Female chelicerae, ventral view; f. Male chelicerae, ventral view. Scale=0,50mm.



Figures 4 a-h. *Unicorn sikus* sp. nov. a-c: Female; d-h: Male. a. Female genitalia, ventral view; b. Internal female genitalia, cleared, showing sub-circular sclerotized median plate; c. Internal females genitalia, cleared, showing anterior receptaculum with lateral projections and sub-pentagonal membranous median receptaculum; d. Left male palp, prolateral view; e. Left male palp, retrolateral view; f. Left male palp, detail of embolus, prolateral view; g. Left male palp, ventral view; h. Left male palp, another ventral view. Scale=0.20mm.



Figures 5 a-b. Areas where the *U. sikus* sp. nov. was collected. a. Cajoncillos (3085m.a.s.l.) (Monte de Sierras y Bolsones eco-region), Parque Nacional Los Cardones; b. Near Muñano (3989 m.a.s.l.) (Puna eco-region).