

NEW DATA ON CENTRAL-AMERICAN ARCTIIDAE :
DESCRIPTION OF A NEW *ROBINSONIA* GROTE
AND NOTE ON *HYPERANDRA LAGUERREI* TOULGOËT
WITH DESCRIPTION OF THE FEMALE
(Lepidoptera Arctiidae Arctiinae)

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Abstract : A new species of *Robinsonia* Grote, 1866 is described. This new species inhabits lowlands in Nicaragua and Costa-Rica. Male and female genitalia drawings and photos are provided, along with a distribution map. In addition, new data on *Hyperandra laguerrei* Toulgoët are reported and the yet unknown female is described and figured. Drawings of male and female genitalia are provided.

Résumé : Les auteurs décrivent une nouvelle espèce de *Robinsonia* Grote, 1866. Cette nouvelle espèce habite les zones de basse altitude au Nicaragua et au Costa-Rica. Des dessins et photos des genitalia mâle et femelle sont fournis ainsi qu'une carte de répartition. De nouvelles données concernant *Hyperandra laguerrei* Toulgoët sont rapportées et la femelle, inconnue jusqu'alors, est décrite. Des dessins et photos de l'habitus et des genitalia mâle et femelle sont fournis.

Key-words : Arctiidae, Arctiinae, Phaegopterini, *Robinsonia bartolana*, *Hyperandra laguerrei*, Central America.

The genus *Robinsonia* was created by GROTE in 1866 for *formula* from Cuba. The genus encompasses elegant, distinctive and unmistakable species, generally white with fine black markings. At present it comprises 31 species with a global distribution going from Mexico to the south of Brazil, with a noticeable extent in Great Antilles. The only modern revision of this group was published by L. TRAVASSOS in 1964, but unfortunately this work is incomplete, because, as usual with this author, only Brazilian species are fully described. Nevertheless, 10 species are entirely figured with habitus, male and sometimes female genitalia. Moreover in 1971, A. WATSON studied in turn 7 additional species in his work on the Neotropical Arctiinae Types in the United States National Museum. The last described species was *wellingi* Travassos, 1964 but its real status must be carefully checked. Thus, it was really a surprise to find, moreover in a well-collected area, a large series of a new and well characterized species. This species inhabits lowlands in Costa-Rica as well as a small contiguous area in south-east Nicaragua.

***Robinsonia bartolana* n. sp.**

Male (fig. 1a, 1c)

Forewing length : ♂ 18-21 mm (n = 51)

Antenna serrate dark brown with white on the scape, palpus dark brown with three small white spots, one on each segment. Frons white with a fine medial dark brown line and vertex bright orange-brown. Patagias dark brown with a large round white spot. Tegulas are white finely bordered with dark brown. Thorax brown with, on the anterior half, 2 small white elongated spots separated by a fine black line, and in the posterior half, a large rounded white spot covered with orange hairs in its anterior part; ventrally white. Legs brown and white, external and internal side. Abdomen is bright orange-brown with small round white spots on segments 2 to 7 and it is brown on segment 8; ventral-laterally with a dark brown decreasing shape longitudinal band from base to the apex; apex of abdomen with a dark brown or white ring-shape group of scales around genitalia on the ventral half.

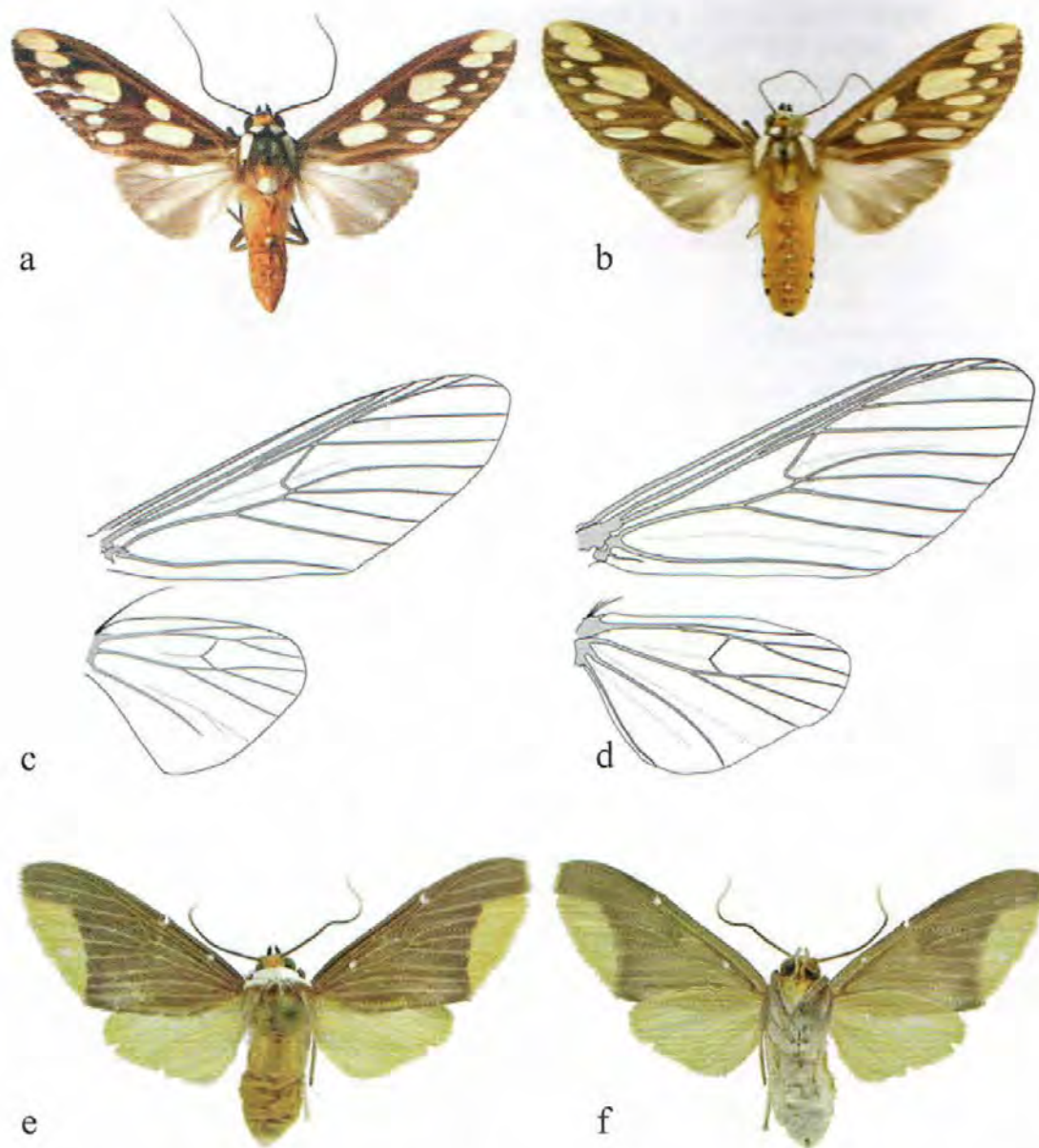


Fig. 1 : *Robinsonia bartolana* n. sp. : a) - Holotype : ♂, 4 to 8-VIII-2000, 200 m, Refugio de Bartola, Rio San Juan, Nicaragua, M. Laguerre leg. b) - Allotype : ♀, Estación Carrillo, Pque Nal. Braulio Carrillo, Prov. San José, Costa Rica, 700 m July 1984 coll. I. A. Chacón. (INB0003509491) ; drawings of the nervation : c) - holotype: ♂ and d) - allotype ♀ *Hyperandra laguerrei* ♀ : e) – upperside f) – underside. 4 Km, W. Sta. Cecilia, Guanacaste Prov. Costa Rica. 17 April 1983. 300m, DH. Janzen & W. Hallwachs. (INB0003510172)

Forewings dark brown on its ground color, veins light brown. A white spot occupying the central third of the cell, which is mainly rectangular. On a median line there are “five” white spots: one large and rounded just beneath the cell in space 2, two contiguous spots just at the end of the cell (rounded triangle) and two rounded quadrangular located in spaces 7 and 8, the last one being just on the wing border. Finally there are five white spots on the subterminal line: one rounded and suboval on space 2, one small oval on space 3, one elongated oval on space 4 just beneath the first group of two median spots, one small comma shaped on space 5 and one very small and rounded on space 6 just beneath the second group of two median spots.

Hind wings smoky gray-brown with the anal border, the entire cell, the costal margin and a fine line on space 2 white. There is also a small white spot on tornus. Ventrally and on the base, there is a brown dash on the costal margin.

Genitalia (Fig. 2): On the whole genitalia, this species is similar to *R. lefaivreii* Schaus and *R. rockstonia* Schaus (see WATSON, 1971, plates 121cd and 120ef) but on its habitus it is completely different (WATSON, 1971, plates 26ab).

Uncus long, narrow and pointed at the extremity, not bilobed as frequently seen in the genus (excepted at least *mera* Schaus). Valva short, just reaching the basis of the uncus, terminated, as usual in the genus, by a sclerotized hook turned upwards with the margin slightly dentate and terminated by a short chitinized spine. This hook in natural position is concealed by a thin, rounded, almost transparent lobe bearing on its margin long and rough black hairs. Vinculum long and narrow with a rounded saccus.

Aedoeagus short, slightly upturned, with vesica multilobed, slightly spinose exhibiting at one end a small sclerotized and dentate plate (fig. 2f) which is frequent in the genus (present at least in *lefaivreii*, *rockstonia*, *fogra*, *polyplagia*, *longimacula*, ...)

Holotype : ♂, 4 to 8-VIII-2000, 200 m, Refugio de Bartola, Rio San Juan, Nicaragua, M. Laguerre *leg.* Genitalia ML961. This specimen will be deposited in MNHM, Paris.

Allotype : ♀, Estación Carrillo, Pque Nal. Braulio Carrillo, Prov. San José, Costa Rica, 700 m July 1984 coll. I. A. Chacón. (INB0003509491). This specimen is deposited in Instituto Nacional de Biodiversidad / INBio, Santo Domingo de Heredia, Costa Rica

Paratypes : 3 ♂, 4 to 8-VIII-2000, 200 m, Refugio de Bartola, Rio San Juan, Nicaragua, M. Laguerre *leg.*, all in Collection M. Laguerre. 1 ♂, Costa Rica, Cartago, Pque National Braulio Carrillo, Quebrada Gonzalez, 600 m, 10/11-V-2005, Benoit Vincent *leg.*

All the following from Costa Rica are in the INBIO Collection :

Costa Rica: Heredia Province: La Selva Biol. Sta. Puerto Viejo de Sarapiquí, 40 m. M.M. Chavarria, 5 ♂, (II-1986, IV-1986, VII-1986, VIII-1986, X-1986), 2 ♀, VIII-1986, Finca Naranjo Valenciana, 2 km sur Pueblo Nuevo, Sarapiquí, 90 m, M. Ortiz, 1 ♂, X-1992, P. N. Braulio Carrillo, Est. Magsasay, 200 m, G. Carballo, 1 ♂, VI-1990, E. Alcazar, 4 ♂, VII-1990, R. Aguilar, 1 ♀, X-1990, 2 ♂, I-1991, 4 ♂, V-1991, A. Fernandez, 1 ♂, V-1991, Magsasay, Quebrada Canta Rana, I.A. Chacón, 1 ♂, I-1983; Puntarenas Province: Fila Esquinas, 35 Km. S. Palmar Norte, 150 m, DH. Janzen & W. Hallwachs, 3 ♂, I-1983, Peninsula de Osa, Pque Nac. Corcovado, Sirena, DH. Janzen & W. Hallwachs, 1 ♂, I-1983, Fila guerra, 1-100 m, F. Quesada, 1 ♂, III-1991, Quebrada Hedionda, 300 m, M. Moraga, K. Caballero, A. Azofeifa, 1 ♂, III-2003, Rancho Quemado, 200 m, F. Quesada, 2 ♀, VII-1992, 1 ♂, X-1992, 3 ♂, XII-1991, M. Segura, 1 ♂, VII-1992, 3 ♂, X-1992, R. Aguilar, M. Segura, F. Quesada, 1 ♂, XI-1992, A. Marin, 1 ♂ VIII-1992, 2 ♂, XII-1993, 1 ♂, II-1994, Sendero la Tarde, Cerro de Oro, 5.5 Km NW del Cerro Rincón, 170 m, A. Azofeifa, 1 ♂, VI-1995, Albergo Cerro de Oro, L. Angulo, 1 ♂, V-1996, Golfito, Pque Nal Piedras Blancas, Estación El Bonito, Sitio el Mirador, 500 m, M. Moraga, 1 ♀, XI-2000; Limón Province: P.N. Tortuguero, Cerro Tortuguero, 0-120 m, E. Quesada, 1 ♀, VII-1990, Sector Cerro Cocori, Finca de E. Rojas, 150 m, E. Rojas, 1 ♂, VII-1991, 1 ♂, IX-1993, R.V.S. Barra del Colorado, Rio Sardinias, 10 m, F. Araya, 2 ♂, VII-1993, Camino a Linda Vista, 98 m, B. Gamboa, W. Porras, D. Briceño, M. Moraga, Y. Cárdenas, 2 ♂, VIII-2004, Cahuita, Finca los Guanacastecos, 100 m, L. Chavarria, 1 ♂, IV-2002.

Female (fig. 1b, 1d)

Forewing length : ♀, 19,5 - 21,5 mm (n = 8)

Similar to male. Antenna simple, with white on its scape. Patterns on palpus, frons and vertex as in male, as well as patagias, tegulas and thorax. Legs brown with white on both sides, externally and internally. Abdomen dorsally, bright orange-brown with small and rounded white spots on segments 2 to 6; ventral-laterally with a dark brown decreasing shape longitudinal band from base to apex; white color ventrally; apex of abdomen with a dark brown ring-shape group of scales around genitalia.

Fore wings largely rounded, spots on forewings creamy-white or white. Hind wings rounded and with color patterns as in male. Ventrally and on the base with a brown dash on the costal margin.

Genitalia (Fig. 3): Papillae analis laterally rectangular and slightly flattened in ventral view; posterior apophysis longer than anterior apophysis; lamella postvaginalis slightly sclerotized and divided into two crescent-shaped plates; ostium bursae membranous and contracted; ductus bursae very short, slightly sclerotized, flattened and with an oval shape; corpus bursae rounded, membranous and slightly striated, signa absent; accessory bursae present and arising from corpus bursae, membranous, with an elongated-shape and rounded to its extremities; ductus seminalis arising from accessory bursae. In general, the genitalia are close to those of *R. dewitzi* GUNDLACH (see WATSON, 1971, plate 235c, under the name of *grotei* SCHAUS) but on its habitus it is completely different (WATSON, 1971, plate 25f).

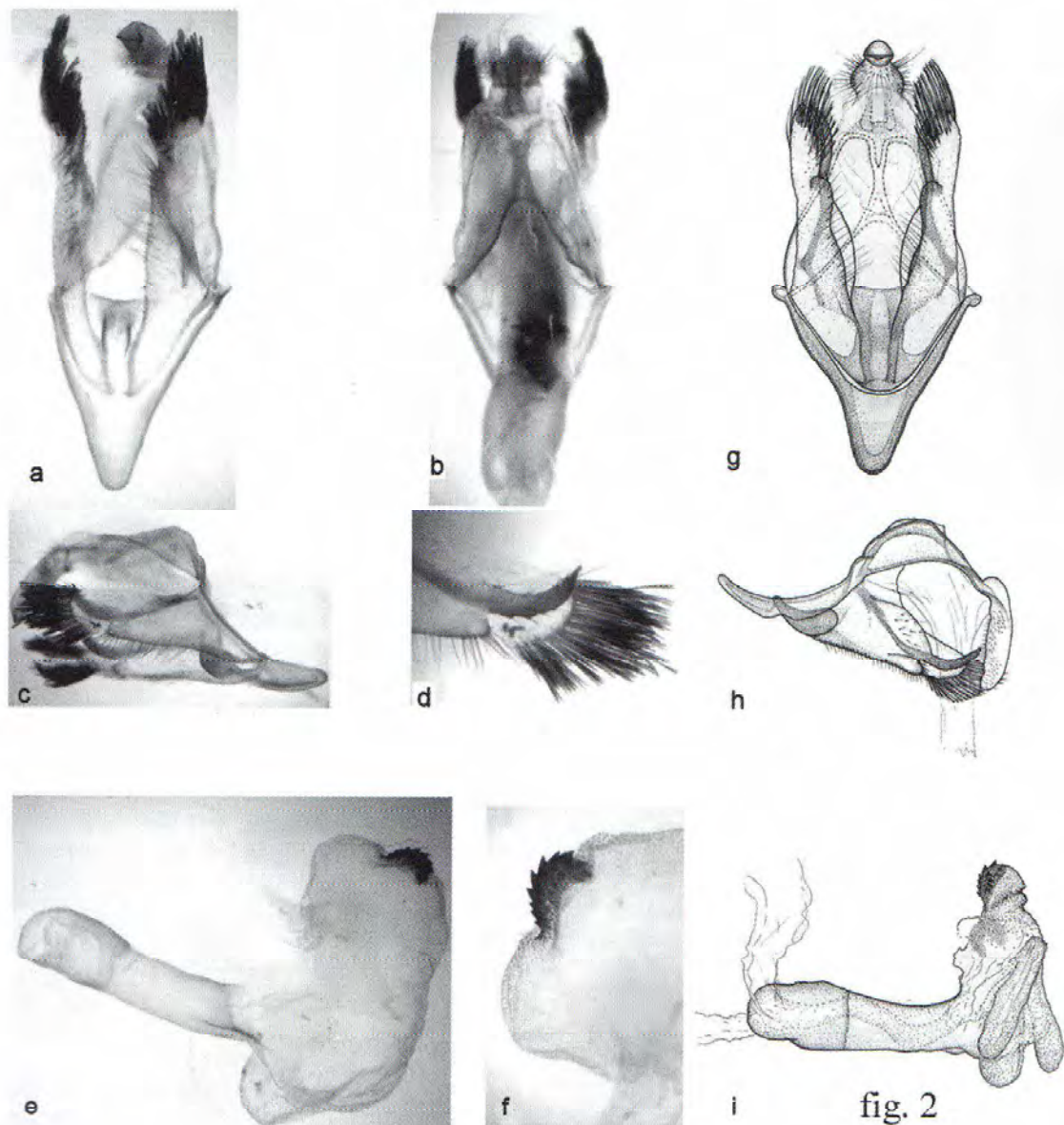


Fig. 2 : Holotype of *Robinsonia bartolana* n. sp.: ♂, genitalia. a) ventral view with detached aedeagus, b) dorsal view with aedeagus inserted, c) lateral view, d) internal detail of valva, e) aedeagus with inflated vesica, f) detail of vesica showing the dentate plate. Drawings on the right of a paratype from Costa-Rica: g) ventral view, h) lateral view, i) aedeagus with inflated vesica.

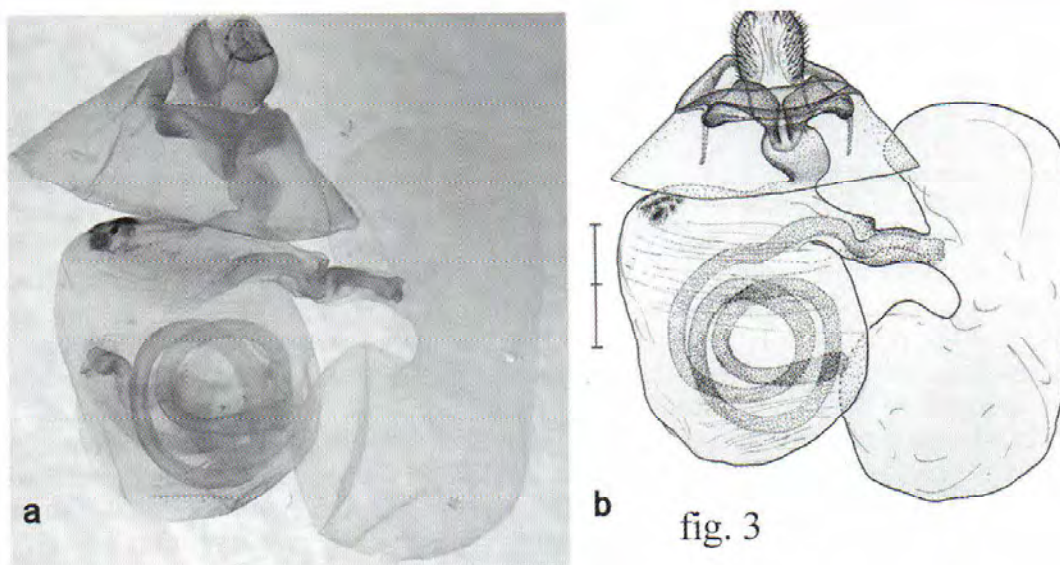


Fig. 3 : Allotype of *Robinsonia bartolana* n. sp.: ♀, genitalia general view, a) photo on the left and b) drawing on the right.

Derivation of name : the species is named after the type locality, Refugio de Bartola (Rio San Juan, Nicaragua)

Distribution (fig. 4)

From the distribution map shown below, it is clear that the new species inhabits lowlands from sea level up to 600 m either on the Pacific or the Atlantic slopes. Apart from the small series from southeastern Nicaragua (Rio San Juan), it is almost entirely localized in Costa-Rica. A recent trip in Panama has not yielded any specimens even though collecting was done on the other side of the Costa Rican/Panamean border (B. VINCENT priv. comm.)

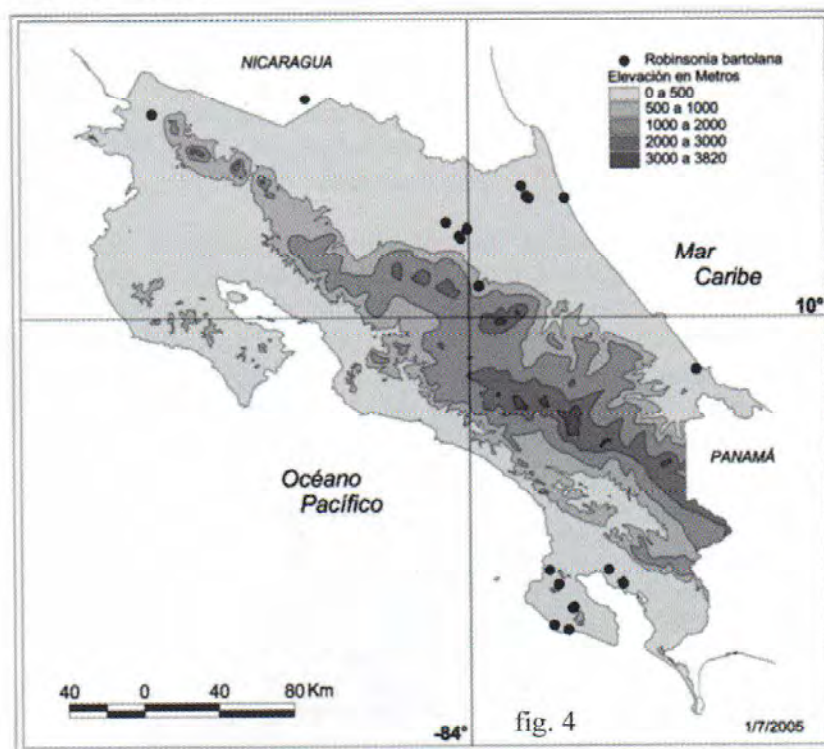


Fig. 4 : Distribution map of *Robinsonia bartolana* n.sp.

Description of the female of *Hyperandra laguerrei* Toulgoët

The genus *Hyperandra* created by Hampson in 1901 encompasses 4 rather uncommon species, 2 of which have been recently described by H. de Toulgoët (1997, 2001). The generotype, *appendiculata* Herrich Schäffer, has been described in 1856 from Rio de Janeiro and in 1923 Dognin described the subspecies *diminuta* from a male collected on the high Amazone (São Paulo de Olivença). This last subspecies is figured alongwith the male genitalia in WATSON (1971, pl. 7a and 90ab). These genitalia are identical to those figured by H. DE TOULGOËT in his note n°68 (2001) from a male originating from French Guyana. The main problem remains in fact in the exact identity of the type from Rio de Janeiro. This last locality casts some doubts on the conspecificity of this taxon with the species frequently found in the amazonian zone and moreover, in the precise description of Hampson (1901), the very characteristic large black patch on the verso of the forewing is not mentionned. This element is, in turn, visible on the photo of the type of ssp. *diminuta* (Watson, 1971). It is then clearly necessary to check the type of *appendiculata* from Herrich Schäffer but it remains actually unlocated. According to Jean CERDA (Patawa, French Guyana) the types of Herrich Schäffer maybe either in Oxford or in Berlin.

Hyperandra laguerrei was described by Hervé de Toulgoët in 2001 from a very small series of 3 males collected by one of the author (ML) in Nicaragua at Refugio de Bartola (Rio San Juan, the same locality where the holotype of *Robinsonia bartolana* is coming from). Nevertheless, it appears that *Hyperandra laguerrei* is more common in Costa-Rica, moreover with a global distribution almost identical to *Robinsonia bartolana* n. sp. 31 ♂, but also 8 ♀, has been found within the INBIO collection. As the female was previously unknown, we present a description alongwith photos and drawings of the habitus and genitalia.

Female (fig. 1e,f)

Forewing length : ♀, 15 - 16 mm (n = 8)

Female very similar to male except, as usual in the genus, for the shape of the fore and hindwings. Antennae simple and white colored at tips, patterns on palpus, frons and vertex as in male, as well as patagias, tegulas and thorax. Abdomen as in the male, dull yellow above and dirty white below.

Forewing with a normal shape, greyish brown with prominent yellowish-grey veins. The yellowish terminal patch is identical to the one found in the male.

Hindwing oval and simple, without any deformation and creamy-yellow color. Underside as upperside but with a global dull cast, the base of the forewing being lighter.

Genitalia (Fig. 5): Papillae analis laterally quadrangular and slightly flattened in ventral view; posterior apophysis longer than anterior apophysis; lamella postvaginalis sclerotized and with two crescent-shaped protuberances, separated by a medial V-shaped notch; lamella antevaginalis slightly sclerotized and with a rectangular shape; ductus bursae long, broad, slightly sclerotized and flattened; corpus bursae rounded, slightly striated and with two signa present, one of these with a concave shape ; accessory bursae present, rounded and arising from corpus bursae.

All the following from Costa Rica, within the INBIO Collection :

Costa Rica: Heredia Province: P. N. Braulio Carrillo, Est. Magsasay, 200 m, M. Zumbado, 1 ♀, III-1991; Guanacaste Province: 4 km. W. Sta. Cecilia, 300 m, DH Janzen & W. Hallwachs, 1 ♀, IV-1983, Est. Pitilla, 9 Km S. Santa Cecilia, 700 m, C. Moraga & P. Rios, 1 ♂, IX-1989 ; Puntarenas Province : Fila Esquinas, 35 Km. S. Palmar Norte, 150 m, DH Janzen & W. Hallwachs, 3 ♂, I-1983, Peninsula de Osa, Parque Nac. Corcovado, Est. Sirena, 0-100 m, G. Fonseca, 1 ♀, X-1989, Est. Esquinas, J. Quesada, 1 ♀, X-1993, Boca Rio Esquinas, Finca Venecia, 200 m, M. Segura, J.F. Quesada, 1 ♂, XII-1993, Bosque Esquinas, A.C.Osa, 200m, M. Segura, 1 ♂, V-1994, 1 ♀, VI-1994, Fila Guerra, 1-100 m, J. Quesada, 1 ♂, III-1991, Rancho Quemado, 200 m, B. Apu, 1 ♂, X-XI-1990, F. Quesada, 10 ♂, (X-XI-1990, IX-1991, X-1991, XI-1991, III-1992, VII-1992, X-1992), 1 ♀, XI-1991, F. Quesada y G. Varela, 1 ♂, V-1992, M. Segura, 1 ♀, VIII-1992, 1 ♂, X-1992, A. Marin, 6 ♂, (VII-1992, X-1992, IV-1994, V-1994),

1 ♀, XII-1993, Campo, Agua Buenas. Centro Juvenil Tropical, 100 m, A. Azofeifa, 1 ♂, VI-1997, Golfito, Est El Bonito, 100 m, M. Moraga, 1 ♂, VII-2000, P.N. Piedras Blancas, Sector El Tajo, 150 m, M. Moraga, 1 ♂, VII-2000, B. Espinoza, 1 ♂, IV-2001, J. Jiménez, 1 ♂, IV-2001, Camino a las Torres, 400-500 m, W. Porras, B. Gamboa, D. Briceño, M. Moraga, 2 ♂, IV-2004 ; Limón Province : Sardinas, Barra del Colorado, 15 m, F. Araya, 1 ♂, III-IV-1995.

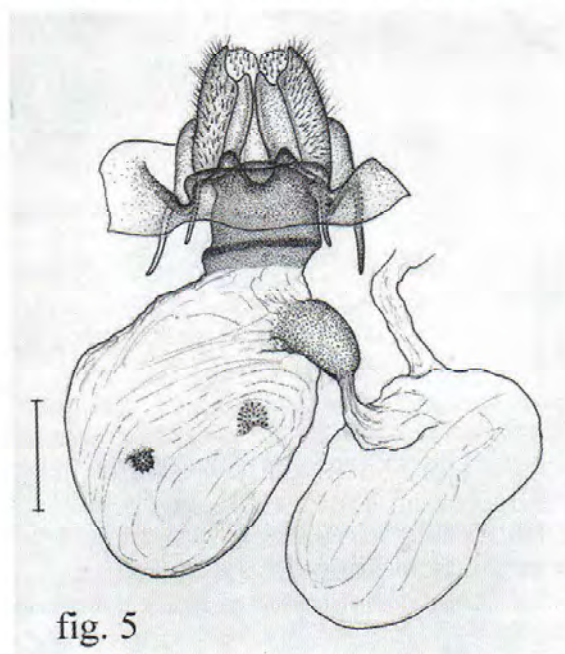


Fig. 5 : Drawing of *Hyperandra laguerei* female genitalia. Rancho Quemado, Península de Osa, 200m. Prov. Punt., Costa Rica, Quesada, Nov 1991(CRI000552665).

In the original paper on the male of *Hyperandra laguerei*, the very peculiar shape of the uncus is not clearly visible in the included drawings. As this part is a key element for the correct diagnosis of this species, we provided new photos and drawings of the genitalia (fig. 6), respectively of a paratype from Nicaragua (preserved in the first author's collection) and of a male from Costa-Rica (preserved in the INBio collection).

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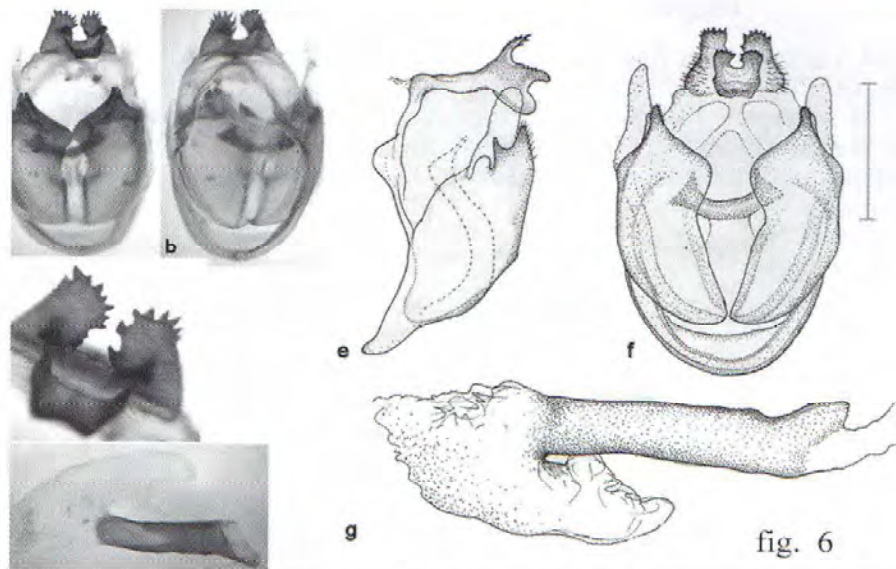


Fig. 6 : Photos of *Hyperandra laguerrei* male genitalia of a paratype from type locality in Nicaragua (left) and drawings of a male from Costa-Rica (right): a) ventral view, b) dorsal view, c) front view of the uncus, d) aedoeagus with inflated vesica, e) lateral view, f) ventral view, g) aedoeagus with inflated vesica.

Distribution (fig. 7)

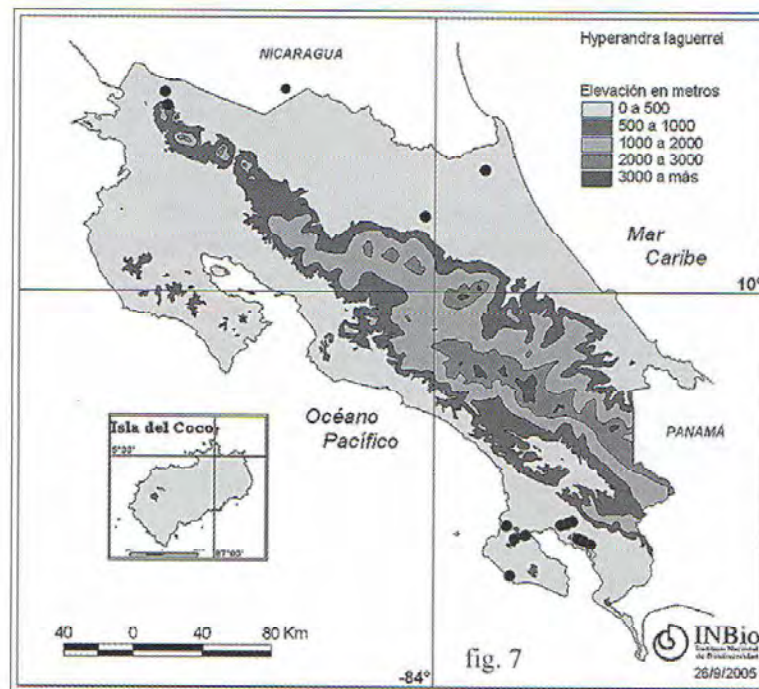


Fig. 7 : Distribution map of *Hyperandra laguerrei*

The distribution map of *Hyperandra laguerrei* is almost completely similar to the one of *Robinsonia bartolana* n.sp. All localities are at low altitude from 0 to 500 m, either on the pacific or the atlantic side. This kind of distribution is shared by several other species which seem endemic of these biotopes, i.e.: *Phaeomolis vampa* Schaus, *Emurena tripuncta* Druce, *Astralartia canalis* Schaus or *Haemanota haemabasis* Dognin for instance.

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