

**First mention of the genera *Beralitra* ORCHYMONT, 1919
(with a new species) and *Oocyclus* SHARP, 1882
(Coleoptera: Hydrophilidae: Laccobiini) from Argentina***

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Abstract

First mention of the genera Beralitra ORCHYMONT, 1919 (with a new species) and Oocyclus SHARP, 1882 (Coleoptera: Hydrophilidae: Laccobiini) from Argentina. The new species Beralitra iguazu (Coleoptera: Hydrophilidae: Laccobiini), from Argentina: Misiones: Iguazú, is described and figured. Male genitalia of Beralitra are figured for the first time. The habitat of the described species was unknown; the new one has been found in rock pools near the foot of a waterfall, swimming or climbing out on the wet walls, together with Oocyclus schubarti ORCHYMONT, 1940. Both genera and the tribe Laccobiini are new for Argentina. A key to species of Laccobiini of South America is given.

Key words: *Beralitra*, Laccobiini, Hydrophilidae, south-American Fauna.

Résumé

Première mention des genres Beralitra ORCHYMONT, 1919 (avec une espèce nouvelle) et Oocyclus SHARP, 1882 (Coleoptera: Hydrophilidae: Laccobiini) de l'Argentine. L'espèce nouvelle Beralitra iguazu (Coleoptera: Hydrophilidae: Laccobiini), d'Argentine: Misiones: Iguazú, est décrite et illustrée. Les genitalia mâles de Beralitra sont illustrés par première fois. L'habitat de l'espèce décrite était inconnu; l'espèce nouvelle a été trouvée dans des creux des rochers, près du pied d'une chute d'eau, en train de nager ou de sortir en gravissant les parois humides, avec Oocyclus schubarti ORCHYMONT, 1940. Les deux genres sont nouveaux pour l'Argentine, ainsi que la tribu Laccobiini. On donne une clé pour les espèces de Laccobiini d'Amérique du Sud.

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Resumen

Primera mención de los géneros *Beralitra* ORCHYMONT, 1919 (con una especie nueva) y *Oocyclus* SHARP, 1882 (Coleoptera: Hydrophilidae: Laccobiini) de la Argentina. Se describe e ilustra la especie nueva *Beralitra* iguazu (Coleoptera: Hydrophilidae: Laccobiini), de Argentina: Misiones: Iguazú. Se ilustran por primera vez los genitales masculinos de *Beralitra*. El hábitat de la especie descrita era desconocido; la especie nueva se encontró en pozas rocosas al pie de un salto, nadando o saliendo del agua por las paredes húmedas, junto con *Oocyclus schubarti* ORCHYMONT, 1940. Los dos géneros y la tribu Laccobiini son nuevos para la Argentina. Se da una clave para las especies de Laccobiini en América del Sur.

1. Introduction

No species of the tribe Laccobiini had been mentioned for Argentina up to date. A survey trip to Parque Nacional Iguazú by Lic. María Cristina TRUCCO ALEMAN in November-December 1994 showed the presence of two species which proved to belong to the genera *Beralitra* ORCHYMONT, 1919, and *Oocyclus* SHARP, 1882.

Both species appeared in the same habitat: small pools in a rock table which extends under the waterfall called Salto San Martín in the río Iguazú. The habitat of *Beralitra* was formerly unknown.

2. Systematic part

2.1. The tribe Laccobiini

HANSEN (1991) defines the tribe Laccobiini (under the name Oocylini) as follows:

1) Elytral margins not serrate; tarsi with spines on ventral side (distinct from Sperchopsini). 2) Middle and hind legs without swimming hairs; scutellum hardly longer than wide (distinct from Berosini). 3) basal ventrite without cavities filled with hyaline mass and without long setae (distinct from Chaetartriini). 4) Head, pronotum and elytra with systematic punctures (distinct from Anacaenini) 5) Posterior margin of 5th urosternite simply rounded; meso- and metasternal emarginations not forming a common ventral keel. Elytra without striae or well defined rows of serial punctures. Apical segment of maxillary palpi longer than the penultimate. Pseudepipleuron at least c. as wide as true epipleuron.

Two genera are mentioned for South America: *Oocyclus* SHARP, 1882 and *Beralitra* ORCHYMONT, 1919. Both genera bear curved spines on prosternal and mesosternal carinae; HANSEN (1991) did not see them in *Beralitra*, but this may well be because they easily fall off, as ORCHYMONT remarks speaking of *Oocyclus decorus* (1919b). I have remarked that in both genera the empodium is very short with two long setae; thus similar to that of Anacaenini, but different from that of Berosini, which is longer than half of the claws, with short setae.

HANSEN himself pointed out (1995) that Oocylini is a junior synonym of Laccobiini BERTRAND, 1967.

2.2. Key to species of Laccobiini known from South America

- 1 - Elytra not explanate at lateral margins; suture not raised
 *Oocyclus* 2
- 1' - Elytra explanate at margins; suture raised
 *Beralitra* 4
- 2 - Elytra without a distinct row of hairs parallel to suture; the whole elytron very sparsely pubescent. Procoxae with straight spines, about half as long as those on pro- and mesosternal processes. Meso- and metafemora smooth, with a few very fine punctures bearing spines hardly longer than the diameter of punctures. Elytra without metallic-shining spots in Argentine material; type (Brazilian) with elytral spots; subapical testaceous spots small, rounded. Antennae, maxillary and labial palpi, tarsi and urosternites testaceous, much lighter than thoracic sternites and legs, which are usually black. Length 4.8-5.5 mm. Brazil: Alagoas; Argentina: Misiones *Oocyclus schubarti* ORCHYMONT, 1940
- 2' - Elytra with one or more distinct rows of long hairs parallel to suture. Meso- and metafemora with rather thick punctures bearing spines at least twice as long as the diameter of punctures. Legs entirely testaceous, more or less dark according to age of specimen; sternites darkly testaceous, the urosternites with posterior edge narrowly testaceous and with small lateral testaceous areas. Subapical spots on elytra moderate-sized 3
- 3 - Elytra with a single dense row of long hairs parallel to suture on anterior 2/3; there may be an indication of other, external rows, but never dense. Prosternal carina with a pair of spines on anterior end. Procoxae with spines only a little shorter and straighter than those on pro- and mesosternal processes. Small emerald-green spots with metallic sheen on melanitic part of elytra; subapical testaceous spots elongate, more than twice as long as wide. Spine-like hairs on elytral outer edges rather large and thick, easily seen under 50 ×. Length 4.4-4.6. Brazil *Oocyclus decorus* (KUWERT, 1890)
- 3' - Elytra with several rows of long hairs (not so dense as in *O. decorus*) on anterior 2/3; on sides and posterior third the whole surface sparsely pubescent. Prosternal carina with two pairs of spines on anterior end. Procoxae with small spines. A single round spot with metallic sheen between 2nd and 3rd row of hairs, a little in front of the middle of each elytron; subapical spots rounded. Spine-like hairs on edge of elytra minute and sparse, hardly to be seen save under 100 ×. Size 5.50-6.28 mm. Brazil: Rio de Janeiro; Sta. Catharina *Oocyclus fryianus* BALFOUR-BROWNE, 1939

- 4 - Length 6.0-6.3 mm. Dorsal surface dull, rugulose; elytral punctures not, or hardly, larger than pronotal ones. Two short rows of bristle-like hairs, one behind the other, on each elytron, parallel to suture. Colour dark brown, only head deep black, not metallic. Bolivia *Beralitra obscura* ORCHYMONT, 1919
- 4' - Length 4.5-5.8 mm. Dorsal surface shining, smooth between the very coarse elytral punctures which are disposed in irregular rows. No rows of bristle-like hairs on elytra. Dorsum black with weak metallic sheen, save on deep black head and on testaceous markings. Argentina: Misiones (extreme north-east)
. *Beralitra iguazu* sp. n.

2.3. *Beralitra* ORCHYMONT, 1919: 145-46

The genus *Beralitra* is defined by HANSEN (1991) by: 1) maxillary palpi not more than half as long as the width of the head; mesosternum reaching anterior mesothoracic margin in a single point; femora with sharply defined tibial grooves. 2) abdomen with 5 ventrites; trochanters of posterior legs moderate; posterior tibiae straight. 3) Elytra without sutural stria; ventrites uniformly pubescent and punctate. 4) Elytra explanate towards margins, the suture raised posteriorly; body weakly convex.

These characters tally both with the type of *B. obscura* and with the material of the new species.

The new species of *Beralitra* has distinct, if irregular rows of elytral punctures. Both ORCHYMONT (1919) and HANSEN (1991) aver that *Beralitra obscura* has no swimming hair on the tarsi. I have found a row of moderately thick, whitish hairs on the middle tarsi, the hind ones having only very sparse white hairs; it is quite true that no groove is seen with ordinary magnification. HANSEN also says explicitly that no spines are found on the prosternum (1991); ORCHYMONT does not mention prosternal spines in his original description (1919a). However, I have found a pair of spines in the new species, and also in specimens of *B. obscura*, in which they are rather small. This appears to be the normal condition in all the south-American Laccobiini, save for the remarkable case of *O. fryanus*, with two pairs of spines.

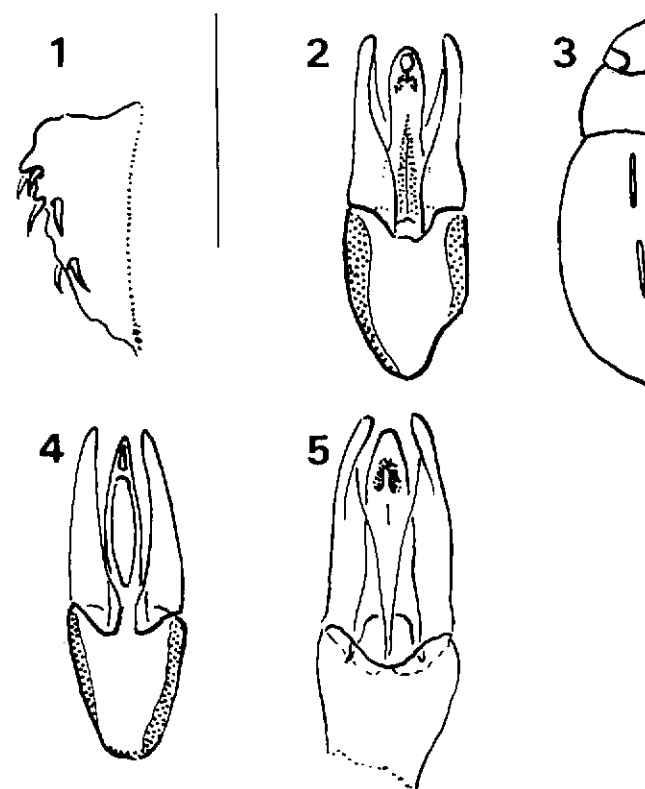
2.4. Description of the new species

Beralitra iguazu sp. nov.

(Figs 1, 2)

Smaller than *B. obscura* (length 4.5-5.8 mm; mean length/width ratio: 1.70). Dorsum deep black, with slight bronze sheen save on head; only a narrow band on each side of pronotum testaceous, on anterior half quite light, on posterior half very dark brown. Most specimens have a small, indistinct testaceous spot on each elytron, in a subapical position. In some

specimen indistinct lighter spots appear under slanting light. Sternites dark or black; appendages testaceous.



Figs 1-2. *Beralitra iguazu* sp. nov. 1: mesosternal process, lateral view; 2: male genitalia; both 100 ×. Fig. 3: *B. obscura* ORCHYMONT, dorsal view (schematic) showing interrupted row of thick hairs; 10 ×. Fig. 4: *Oocyclus schubarti* ORCHYMONT: male genitalia; 100 ×. Fig. 5: *O. fryanus* BALFOUR-BROWNE: male genitalia, 100 × (basal piece damaged). Scale lines: fig. 1: 0.5 mm; fig. 3: 1 mm.

Head with fine (1 ommatidion), moderately dense punctures; a row of coarse punctures (trichobothria?) along inner margin of eyes. Pronotum shining, with coarse, irregularly spaced punctures, as large as those near eyes; disk punctulate, the fine punctures rather smaller than ommatidia. Punctures on sides bearing short, whitish hairs. Elytra shining, with irregular rows of coarse, deep punctures, 1-2 times the size of those on pronotum, irregular in shape, not cleanly impressed, but rather funnel-shaped. No rows of stiff, thickened hairs on elytra. Ground of elytra smooth, not rugulose. Sutural edge of elytra raised nearly in its whole length; outer

edge explanate, finely margined. The punctures on the posterior 1/3-1/4 of the elytron bear short, stiff, whitish hairs. A few thick, reddish spine-like hairs are apparent on the elytral edge in ventral view (not on dorsal surface of elytron as in *Berosini*); as far as I can see, these hairs are very sparse, but distributed along the whole of the elytron, while in *Oocyclus* they are restricted to the posterior half. Prosternum carinate, with one pair of curved spines near the anterior end. Mesosternal process (Fig. 1) broadly elliptical in ventral view, but forming at the level of the mesosternal process a thick ridge, a little more strongly raised in the anterior part, bearing three pairs of thick curved spines, easily rubbed off. Metasternum with a shallow posteromedial process, pubescent with a central glabrous area which is flat, smooth and shining. Urosternites thickly punctured, hairy. Procoxae with a few curved spines, about 2/3 of the size of those on pro- and mesosternal processes. Femora with coarse, deep, but sparse punctures, bearing minute spines hardly as long as the diameter of punctures (these spines are easily rubbed off). Tibial spurs curved on fore tibiae, straight on middle and hind tibiae. Middle tarsi with a dorsal row of fine, long, white, moderately thick swimming hairs; hind tarsi with a sparser row, the hairs of which appear stiffer than those on middle tarsi. Insertions of swimming hairs not apparent under 100 ×, certainly not forming a groove. Claws sickle-shaped, angular at base. Empodium short with a pair of long setae; the whole about as long as claws. Palpi testaceous; the apical segment broad, asymmetrical, truncate at apex. Hind wings of the type series well-developed. An ovigerous female was carrying one egg, already engaged in the genital tract, short and thick (hardly more than twice as long as wide), elliptical, white. Some specimens had their dorsum encrusted with a thin whitish layer (cf. ORCHYMONT, 1919a).

Male genitalia (Fig. 2): Basal piece short, with base narrow, very slightly asymmetrical. Paramera gradually acuminate, rounded at apices which are a little turned inwards. Median lobe a little shorter than paramera, narrowly conical, with a subapical opening, apex narrowly rounded.

Material examined: from Argentina: Misiones: Parque nacional Iguazú: Isla San Martín. 19.X.1994, leg. M. F. TRUCCO ALEMAN. Holotype and Allotype, at the Museo argentino de Ciencias naturales (MACN). From Parque nacional Iguazú: Salto Dos Hermanas, 3.XI.1994, leg. TRUCCO ALEMAN: one paratype of each sex at the Museu de Zoologia da Universidade de São Paulo and the natural History Museum (ex British Museum) of London; 2 female paratypes at the MACN. Same locality, 27.X.1994: leg. TRUCCO ALEMAN: one paratype of each sex at the national Museum of natural History, Washington. From Isla San Martín: rock pools 50 m from Salto San Martín, SO/NE direction, 19.X.1994, leg. TRUCCO ALEMAN and MACKOVIEK: one paratype of each sex at the zoologische Staatssammlung Bayerns, München, and the Institut royal des Sciences naturelles de Belgique, Brussels; 1 male paratype at the MACN; same locality, 24.X.1994, leg. TRUCCO ALEMAN, 1 female paratype at the MACN.

Discussion: the name alludes to the typical locality.

The one other species described for this genus is *B. obscura* ORCHYMONT, 1919 (: 146-47). It is larger and less deeply melanic, the specimens examined being rather a very dark brown, without any metallic sheen; only the head is deep black. The dorsum is dull, rugulose between the punctures; these are shallow, dense, those on elytra about the same size of those on pronotum. On each elytron, near the sutural edge, there is an interrupted series of thick, stiff, almost spine-like yellowish hairs (ORCHYMONT, 1942: "De chaque côté de la suture, l'une derrière l'autre, deux petites cicatrices allongées d'où sort une touffe de soies jaunâtres") (Fig. 3). The spines on the prosternal carina are smaller than in the new species. The mesosternal process seemed to me more strongly broadened than in *B. iguazu* sp. n.; however, this character is less clear-cut than in other groups of Hydrophilidae, such as the *Berosinae*.

Material of *Beralitra obscura*: Female holotype of *B. obscura* from the Institut royal des Sciences naturelles de Belgique, from Bolivia (no locality); length: 6.0 mm. Two females from the National Museum of Natural History, from Bolivia: Chuquisaca: Ynancaroïnca, IV.1934, leg. G.L. HARRINGTON; length: 6.3 mm and 6.0 mm. ORCHYMONT gives 5.5 mm as the length of the holotype, but measurements of convex beetles under microscope always have a certain imprecision.

2.5. Further data about *Laccobiini*

Oocyclus schubarti ORCHYMONT, 1940 was found together with *Beralitra iguazu* sp. nov. This species is remarkable by its large size (4.3-5.5 mm; mean length/width ratio: 1.67), by the very light urosternites and tarsi, which appear yellow in specimens in alcohol; also by the quite inconspicuous dorsal hairs (ORCHYMONT, 1940). I have not seen the metallic-shining spots mentioned in the description, but this may well be because my specimens were young, since the testaceous parts appeared remarkably light-coloured. Male genitalia: figure 4. Type locality: Brazil: Alagôas.

A curious detail is the small testaceous spot on each elytron near the sutural edge about the last 1/4 of the length. This pair of spots appear also in *O. decorus* and *O. fryanus*, in which they are larger, and curiously enough in *B. iguazu* sp.n. It is remarkable that the colour pattern is shared by all the south-American *Laccobiini* (head deep black, dorsum more or less melanic, anterior angles and part of the lateral edges of pronotum testaceous, a subapical testaceous spot on each elytron). It could be suggested that this pattern has some relevance to life mode, perhaps by "breaking up" shape. Against this, it must be pointed out that the subapical spots are remarkably small save in *O. fryanus*. However, the colour pattern might be a synapomorphy inherited from the ancestral stock, which might have been useful as cryptic colouring in the original form, but which later on may have lost adaptative efficiency and suffered a reduction of the testaceous areas.

As in the case of *Beralitra*, HANSEN (1991) says that *Oocyclus* has no swimming hairs, yet I have found a row of stiff white hairs rising from the dorsal face of middle and hind tarsi; they appear rather thicker than those on *Beralitra*. However, there is no groove on the tarsi. TRUCCO ALEMAN (see introduction) actually saw these beetles swimming, although in a rather feeble manner; she also found them outside the water, on the walls of the rock pools which are permanently wet because of the nearby waterfall.

Two specimens of *O. decorus* were examined. They were from Brazil, without locality; the measurements were: length, 4.5 and 4.3 mm; width: 2.8 and 2.5 mm; length/width ratio = 1.60 and 1.70. The exact type locality of this species is not known (ORCHYMONT, 1919b). A single specimen of *O. fryanus*, from Brasil: Sta Catharina, was examined. Measurements: length: 5.5 mm; width: 3.0 mm; length/width ratio: 1.8. Type locality: Rio de Janeiro. Male genitalia: figure 5 (basal piece damaged; the specimen was in poor condition). For differences between the species, see key in 2.2. All three specimens from the general collection of the MACN, without indication of origin.

The interrupted row of stiff hairs in *B. obscura* appears to correspond with the thick row of pliant hairs on *Oocyclus decorus*, which must correspond with the inner row of sparse hairs in *O. fryanus* (see below). It is remarkable that the two south-American species of Laccobiini which lack a distinct row of hairs on the anterior portion of the elytra (and near the highest point of the transversal curve) should be found in the same habitat. Dr A. O. BACHMANN (pers. com.) suggests that the elytral hairs may have a sensorial function for orientation along a current to facilitate oxygenation. Very little is known of the life-mode of the Laccobiini, but SPANGLER (1979) mentions finding *Oocyclus* of unspecified species "on seeps, i.e. on the wet surfaces of rocks and in crevices of these rocks which were exposed by road cuts.", in Ecuador. On the other hand, the two Argentinian species, which are precisely those which lack specialized dorsal hairs, live in pools (see Introduction) or among vegetal debris (ORCHYMONT, 1943) in water dependant from waterfalls, but not with definite currents. It is possible that they are forced to emerge as observed to renew air provision. It appears likely that the ancestral mode of life was madicolous, and that *B. iguazu* and *O. schubarti* specialized secondarily in habitats without strong currents.

3. Acknowledgements

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