

Métasoma:

Partiellement déformé dorsalement au-delà de T_3 mais mesures fiables; bord antérieur relativement large (215 μm), débordant des éperons propodéaux latéraux; cannelure forte, sa portion médiane (160 μm de largeur) nettement surélevée par rapport aux deux portions latérales. Grand tergite T_3 relativement long (425 μm , 83% du gaster et 118% du dos du ptérothorax).

Principales mensurations:

Tête: 200/335/335; DFim: 180 (54% de la largeur de la tête); triangle ocellaire: 85(50)/65(35)/60; tempes (obliques): 55. Mésosoma: 505/360/305; mésoscutum: 105/320; trait axillaire + scutellum: 255; scutellum: 225/180; éperon médian: 80; métasoma: 760/≈330/365; grand tergite T_3 : 425; base du rebord et de la cannelure: 215; portion médiane de la cannelure: 130/160. Aile antérieure: 965/280; corde de la radiale/stigma linéaire: 249/98 = 2,54. Antenne: scape: 322/56 (100/17) 5,75; pédicelle: 88/32 (27/10) 2,77; A_3 : 70/39 (22/12) 1,81; A_4 : 46/39 (14/12) 1,18; A_5 : 39/42 (12/13) 0,91; A_6 : 49/46 (15/14) 1,07; A_7 : 70/58 (22/18) 1,21; A_8 : 77/58 (24/18) 1,33; A_9 : 75/60 (23/18) 1,26; A_{10} : 199/60 (37/18) 2,00; longueur totale: 955. Longueurs cumulées des 3 tagmes: 1,465 mm.

Localisation et type:

Holotype-monotype (préparations microscopiques n° 9412/071): Suisse, Tessin, Tegna, 5 août 1964, dans du fumier; récolteur Cl. BESUCHET; déposé dans les collections du Muséum d'Histoire naturelle de Genève. Le biotope est peut-être fortuit, à moins que cette espèce à morphologie très spéciale ne soit aussi parasite d'un hôte inhabituel, par exemple un diptère à larve fimicole.

Affinités:

Nous ne connaissons pas d'espèce européenne ayant la lunule préoccipitale délimitée par une forte carène, ni d'aussi longs éperons à l'arrière du mésosoma; nous n'avons jamais noté un sillon sur le flanc terminant son parcours au sommet du prépectus... On se souviendra que l'espèce-type du genre, *Ceraphron sulcatus* JURINE, 1807, est détruit et provenait de Suisse et sa nature exacte est très problématique. Il y a toutefois vraiment très peu de probabilités pour qu'il se soit agi de l'espèce décrite ici.

Étymologie:

Substantif latin féminin en apposition, diminutif de *bestia* (bête, animal), de l'appellation que nous donnions à l'espèce durant son étude en commun; le mot a aussi été utilisé au niveau générique.

**Redescription and Geographic Range of
Sympetrum haritonovi BORISOV, 1983
(Odonata, Libellulidae)
with notes on its habitat and ecology**

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Abstract

Sympetrum haritonovi, one of the smallest extant *Sympetrum* species, is redescribed and characterized against its closest relatives, especially *S. vulgatum decoloratum*. It extends from the Pamirs of Central Asia and possibly Ladakh in the East, to Anatolia in the West. It is distinctly restricted to swampy mountain environments.

Key words: *Sympetrum*, Biogeography, Asia.

Résumé

Sympetrum haritonovi, l'une des plus petites espèces du genre *Sympetrum*, est redécrite et différenciée des espèces apparentées, en particulier *S. vulgatum decoloratum*. L'espèce s'étend des Pamirs et peut-être du Ladakh à l'Est jusqu'en Anatolie à l'Ouest. Elle est typique d'endroits marécageux de haute montagne.

Introduction

The original description of *Sympetrum haritonovi* was published in Russian, in a journal not widely available to the international scientific community (BORISOV, 1983). In addition, numerous new records have since become available, widening the range of the species enormously. Here, we therefore offer a redescription, and give notes on the ecology of this remarkable species.

Sympetrum haritonovi BORISOV, 1983

Material examined

Tajikistan: 1) Pamir, Dzilandy therms, 3550 m, 14.VI.1984, 14♂♂, 7♀♀; 2) Garm (type area), 21.VIII.1987, 3♂♂; 3) Saray-Chosor, 27.VII.1987, 2♀♀, all leg. S.N. BORISOV.

Uzbekistan: West Gissar mountains, Aksu, 1780 m, 26.VII.1988, one ♂, 4♀♀, leg. S.N. BORISOV.

Kirghizistan: Alay valley at Daraut-Korgan, 9.VIII.1989, 3♂♂, 3♀♀, leg. S.N. BORISOV.

Afghanistan: 1) Lal-o-Sarajang, 300 km W. of Kabul, on middle road, 15.VII.1975, one ♂, leg. E. VAN CAPPELLEN; 2) marshes near River Heri-Rood on road from Sahrah to Jam, 450 km W. Kabul, 19.VII.1975, one ♀, leg. E. VAN CAPPELLEN (both localities above 2,000 m).

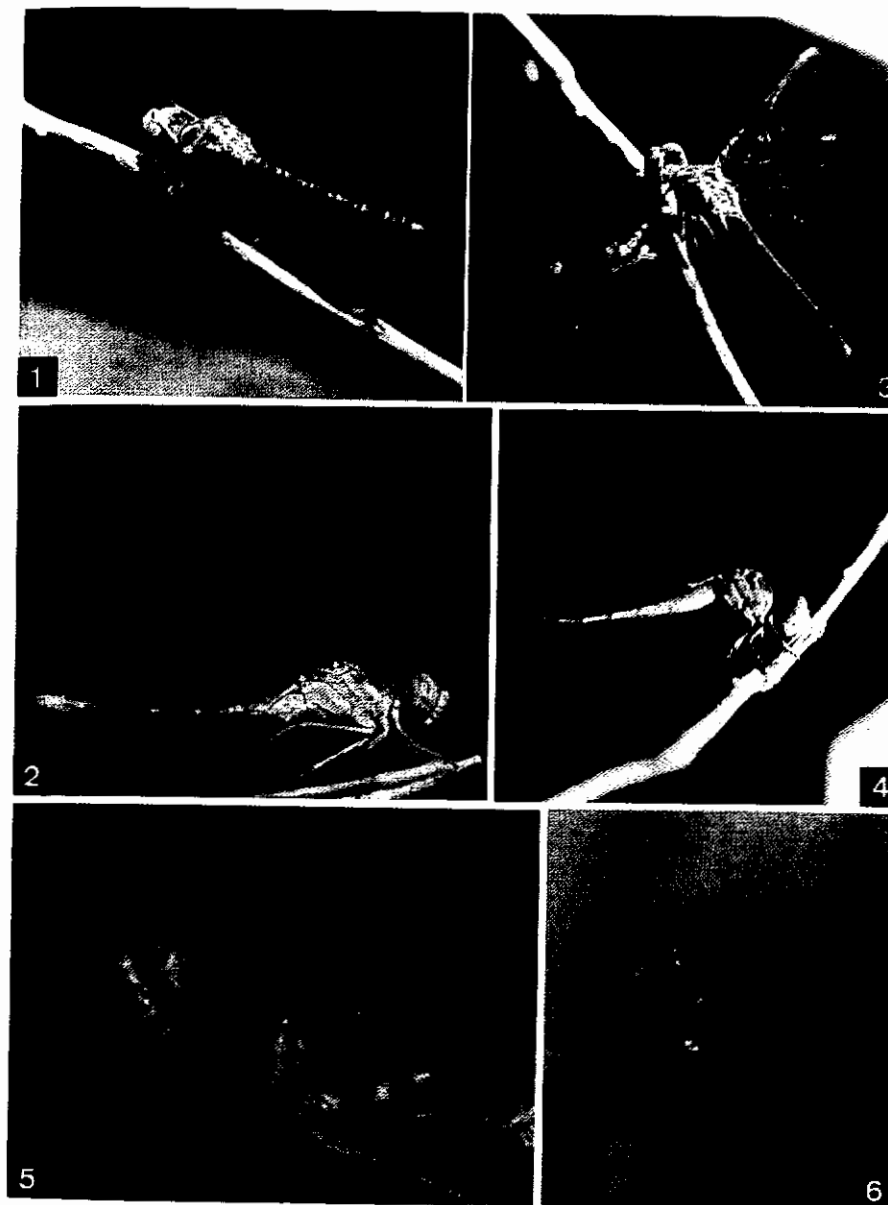
Turkey: 1) Gökbek plateau; Yalus, 15 km NE of and above Alanya, a spring-swamp and a brooklet at 1,800-2,200 m, 20.VIII.1992 and 14.VIII.1993, 4♂♂, 4♀♀, leg R. SEIDENBUSCH; For more information on the locality and its Odonate fauna, see SEIDENBUSCH, 1994; *S. haritonovi* is noted therein as *Sympetrum* sp. nov.; 2) Tortum, NE-Turkey, 1♀ (SÉLYS collection, Brussels)

Other material seen but not re-examined for this study

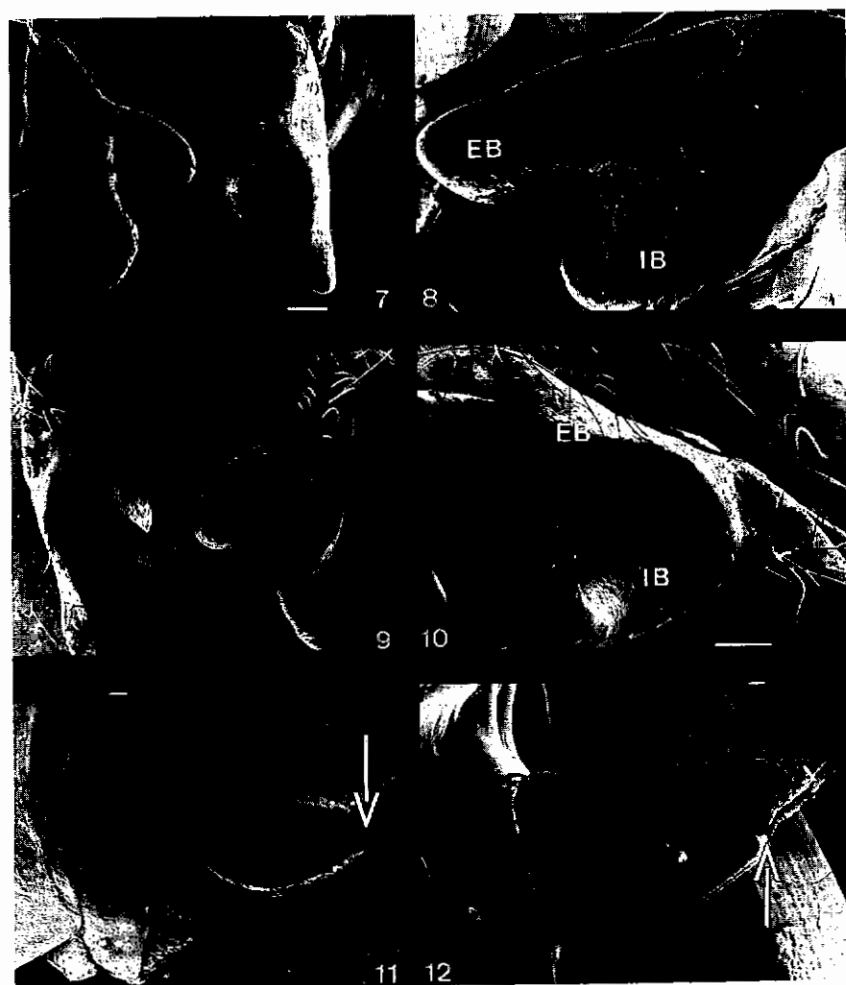
Tajikistan: Ziddy village, c. 70 km N. of Dushanbe, 2800 m, 21.VII.1992, a large population living just below the snowline (S.N. BORISOV & J. MERTENS, observers).

Diagnosis

One of the smallest *Sympetrum* species known, with abdomen under 20 mm in length in both sexes. Both sexes almost entirely devoid of black markings, coloured in tinges of yellow, green, light brown, orange and reddish. Wing venation reddish, with traces of basal amber. Males with outer branch of hamuli short and squarish, inner branch short and pointed. *Appendices inferiores* slightly surpassing the ventral angulation of the *appendices superiores*. Females with vulvar aperture depressed and with thickened lips.



Figs 1-6. *S. haritonovi* (Gökbek plateau, Turkey) (Photographs by R. SEIDENBUSCH). 1-2: Male, habitus; 3-4.:Female, habitus; 5: Male, head and thorax in lateral view; 6: Head, frontal view.



Figs 7-12. *Sympetrum*, males. 7: *S. haritonovi*, hamuli; 8: the same, one hamulus enlarged (EB = external branch, (Garm, Tajikistan) 21.VIII.87, leg. BORISOV; IB = internal branch); 9: *S. vulgatum decoloratum*, hamuli; 10: the same, one hamulus enlarged; 11: *S. haritonovi*, terminalia (arrow indicates tip of *appendix inferior* projecting beyond ventral angulation of *appendix superior*); 12: *S. vulgatum decoloratum* (Dzircidal, Ljachsh, Tajikistan, 13.VIII.87, leg. BORISOV), terminalia (arrow indicates tip of *appendix inferior* not projecting beyond ventral angulation of *appendix superior*) (all scale bars 0.1 mm).

Description

Male

Labrum and face pale greenish-yellow, with orange tinges and no traces of black (Figs 5-6). Vertex pale orange, with small frontal tubercles. Antennae with scapus and pedicellum yellowish, flagellum dark brown (Fig. 6). Base of antennae embedded in diffuse black dot. Eyes olive-green, brownish on top (Fig. 5). Occiput reddish; rear of head yellowish to brown. Pronotum largely yellowish-brown, but base of anterior collar, and median lobes at base of bilobed hind margin with black, brown-bordered spots. Synthorax laterally greenish-yellow, almost entirely devoid of black. Only the sinuous humeral suture, and the lateral suture (S 1), up to the level of the metastigma, very finely lined with black. Suture 2 as inconspicuous as humeral suture (Figs 2, 5). Alar sinuses brownish, anteriorly lined by black-tipped spines. Mesepisternum brownish, with a yellowish antehumeral stripe in the middle (Fig. 1), variously extending to almost the base of the alar sinuses, or only halfway up the mesepisternum. Legs entirely greenish-brown (Figs 2-5), with only the lateral spines on the femora and the tibiae black. Tarsal segments with dark rims. Claws dark brown. Sclerite separating mesepimerum from base of fore-wings black (Fig. 5). Wings with venation reddish-brown, and with basal amber in both pairs of wings (Fig. 2), restricted to the basal half of the subcostal and subcubital cells. Membranula whitish. Pterostigma reddish brown, between thick, black costal and radial veins. Internal rims of pterostigma often yellowish, giving it a curious, bicolorous aspect. Abdomen completely unmarked, salmon to bright reddish, with a pair of yellow spots at the top third of segments 2 to 9 (Figs 1-2). *Appendices superiores* yellowish, with fine black apical spine, slightly outwardly turned. Dorsal margin almost straight, ventral margin keeled in its distal half, lined by 6-9 black spines (Fig. 11). Tip of *appendices inferiores* surpassing the ventral angle of the *appendices superiores*, but not by more than one third of the distance between the angle and the tip of the *appendices superiores*. Accessory genitalia: external branch of hamuli distinctly shorter than the elongated, slightly hollowed-out genital lobe, squarish in shape and blunt-ending (Figs 7-8). Internal branch shorter than external one, curved inwardly, pointed. *Vesica spermalis* (Fig. 13) typical for genus, but distal segment (V4) short, and, when upturned, fully resting against V3.

Size small. Abdomen (not including appendages) ranging from 17.5-19.5 mm; average for 26 males from 6 populations 18.86 mm.

Female

Coloration as in male, but flanks of synthorax and abdominal segments 1-2 even greener (Fig. 4). Rest of abdomen light brown (Fig. 3), sometimes with a suggestion of a darkening ventrally, along the sides of the segments, but never black. Segments 8-10 somewhat deeper brown than the preceding ones. Styli brown, pointed, slightly longer than segment 10. Valvules only slightly prominent in lateral view, with thickened lips (Figs 10, 15-16).



Figs 13-16. *Sympetrum*, males and females. 13: *S. haritonovi* male, vesica spermalis (lateral view); 14: *S. vulgatum decoloratum* male, vesica spermalis (lateral view); 15: *S. haritonovi* female, terminal abdominal segments in ventral view; 16: the same, oblique posterior view, to illustrate the thickened lips of the vulvar opening (all scale bars 0.1 mm).

Size slightly smaller than male. Range of abdominal length 17-19.5 mm; average for 21 females from 6 populations 18.26 mm. This is significantly smaller (paired t-test, $p < 0.01$) than the male.

Interpopulation variation

Because of the considerable geographical range of this species (see further), presumably populated by numerous isolated or quasi-isolated colonies, we looked for variation in body markings. None were found. No structural variation could be detected either.

A comparative analysis of abdominal size was also conducted for all populations seen. The result, shown in Table 1, illustrates that even very distant populations of this small species vary little in size.

Table 1. *Sympetrum haritonovi*, length of the abdomen (in mm).

	Turkey (Antalya, 2200m)	Kirghizistan (Alay Valley)	Uzbekistan W.Gissar Mts (1780)	Afghanistan Central Plateau	Tajikistan Pamir Dzilandy therms	Tajikistan Garm	Tajikistan Sary-Chosor
males							
mean value (n=number)	18.75(n=4)	18.50(n=3)	18(n=1)	19.5(n=1)	18.92(n=14)	19.16(n=3)	-
females							
mean value	18.00(n=4)	18.50(n=3)	18.12(n=4)	18.00(n=1)	18.63(n=7)	-	17.75(n=2)

Differential diagnosis

Among the decolorate *Sympetrum* of Asia, *S. haritonovi* takes an isolated position. By its small size, only rivalled by the dark *S. parvulum* BARTENEF, lack of black markings, and reddish wing venation, it may at once be separated from other regional, more or less decolorate species like *S. sinaiticum* (DUMONT) and *S. tibiale* RIS. Both of these have rather extensive black on thorax, legs, and abdomen in both sexes. DUMONT (1975) mistook a pair of *S. haritonovi* from Afghanistan for *S. tibiale*, thinking that, in this little known species, the black body markings might vary in much the same way as in *S. vulgatum*. This, however, is now seen to be incorrect. Genuine material of *S. tibiale* from Kazakhstan is distinctly marked with black, especially on the legs, as well as being structurally different from *S. haritonovi* (male hamuli with stronger, more pointed external branch; appendices superiores with ventral angulation swollen and expanded). *Sympetrum sinaiticum*, recently revised by JÖDICKE (1994), is also comparatively large with structural differences with *S. haritonovi* in both sexes, excellently illustrated in JÖDICKE's paper. Basically, the external branch of the male hamulus is longer and more pointed, and the appendix inferior extends to halfway between the angulation and the tip of the appendix superior. The female valvules are well prominent in lateral view. As to colours, JÖDICKE (1994) records quite some variation, and largely bases his several subspecies on them. The palest examples (a pair from Basra in collection of H. DUMONT, ex.-collection K.J. MORTON) are indeed almost as

pale as *S. haritonovi* (although distinctly more sand-coloured) on thorax and legs, but still show (especially the ♀) brownish longitudinal streaks on the flanks of the abdominal segments. Other examples (a slightly teneral ♀ from Dushanbe, Tajikistan, 19.VII.1971, and a series from Kara-Kala, Parchay, SW Turkmenistan, 05.06.1988, S.W. BORISOV leg.) tolerably agree with JÖDICKE's pale ssp. *arenicolor*, but have, at least, black striped femora. A final, but very conclusive distinctive character between the *S. sinaticum*-group and *S. haritonovi*, beside size, is the complete absence of wing amber in the former.

The only *Sympetrum* that is consistently as decolorate and potentially shares its geographic range with *S. haritonovi* is *Sympetrum vulgatum decoloratum* (SÉLYS) (sensu JÖDICKE, 1994) (syn. *Sympetrum vulgatum flavum* BARTENEV). Yet, this is again a far more robust species, having a strong hamulus in the male, with an elongated external branch, and a strongly developed internal branch (Figs 9, 10). The terminalia are longer and more slender, and the tips of the *appendices inferiores*, at best, reach the level of the ventral angulation of the *appendices superiores*, which are weakly keeled, and lined by few but strong spines (Fig. 12). The apical segment of the *vesica spermalis* is more strongly built than in *S. haritonovi* too and, when resting against the basal segments, leaves a "window" open (Fig. 14). In female *S. vulgatum decoloratum*, the valvules are much more prominent than in *S. haritonovi*. Finally, *S. vulgatum decoloratum* is a much larger insect than *S. haritonovi* (abdominal length at least 22 mm) and thus, it is well possible that some published records, like ASAHINA's (1966) "small" *S. vulgatum flavum* (= *S. vulgatum decoloratum* sensu JÖDICKE) from altitudes of c. 2,500 m in Afghanistan are really *S. haritonovi* (but not *S. tibiale*, as suggested by DUMONT, 1975). Likewise, part of SCHMIDT's (1961) records of "small" *S. vulgatum decoloratum* (sub *S. vulgatum flavum*) might also be *S. haritonovi*, and even MORTON's (1907) series of *S. decoloratum* from Quetta comes up for re-examination, as correctly suggested by JÖDICKE (1994).

Distribution and habitat (Fig. 17)

Records are now available (see material examined) from Tajikistan (*terra typica*), Kirghizistan, Uzbekistan, Afghanistan, and Anatolia (Turkey). The last record provides the most spectacular range extension, and establishes the fact that *S. haritonovi* is really a widely distributed species, not restricted to the Central Asian mountains, but reaching the eastern mediterranean basin.

This species is distinctly limited to mountainous environments, in which it occurs from 1750 m to 3500 m (although the latter site was a thermal spring in the Pamirs). Field notes by Dr. J. MERTENS (Gent), who observed the species in its type locality in summer 1992, state that it flies up to just below the snowline. Here, it frequents marshy spots along flowing streamlets and shallow water pools. The Turkish localities near Alanya are quite similar to the preceding: marshes fed by spring water

forming a short brook, at c. 1,800-2,200 m altitude. Oviposition was here observed (R. SEIDENBUSCH) in a barren, treeless area where some water was trickling laterally from the brook into shallow, grassy marshland. Oviposition occurred in tandem flight, either in dipping mode or perched. Exuviae were also collected here and will be described separately by R. SEIDENBUSCH.

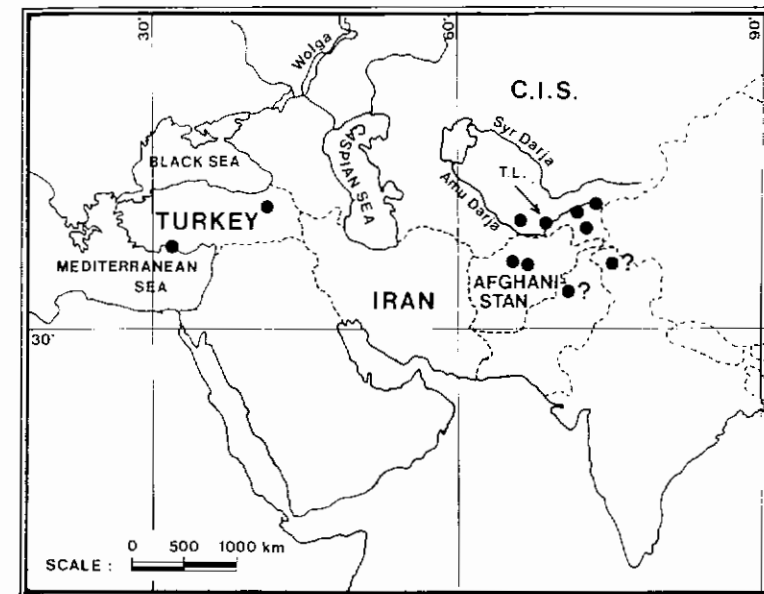


Fig. 17. Map showing the distribution of *S. haritonovi* in Asia. TL = type locality. Note that, at the scale of the map, one dot may represent several individual stations.

The gap between the Turkish sites and the Central Asian ones almost certainly reflects ignorance rather than a true disjunction. Prospecting adequate localities in East Anatolia and Iran may reveal many additional colonies, and produce a more coherent range, as has recently been the case with *Ischnura intermedia* DUMONT (DUMONT & BORISOV, 1995, in press). These two examples thus illustrate the fact that probably many more Central Asian dragonflies reach the eastern mediterranean shorelands than was hitherto supposed.

The Eastern limits of the species' range are still uncertain, but it probably does not extend to the Himalayas (ASAHINA, 1984), although a larval record (sub *S. vulgatum flavum*) from Ladakh possibly pertains to it (ASAHINA, 1978) and MORTON's (1907) Quetta material should also be restudied.

References

- ASAHINA, S., 1966. - The Afghan Odonata taken by Dr. Yosii in 1960. *Results Kyoto Univ. scient. Exped. Karakoram Hindukush* 8: 155-158.
- ASAHINA, S., 1978. - A new and some known species of Odonata from Kashmir. *Senckenberg. biol.* 59: 115-120.
- ASAHINA, S., 1984. - The Himalayan dragonflies of the Genus *Sympetrum* (Odonata, Libellulidae). *Bull. natn. Sci. Mus. Tokyo*, 10 (3): 121-133.
- BORISOV, S.N., 1983. - Novia vid Strekozi roda *Sympetrum* NEWMAN (Odonata, Libellulidae) iz Tadzikistana. *Sympetrum haritonovi* n. sp. *Izv. Akad. Nauk tadjik SSR, Otdel. biol.* 2 (91): 68-70.
- DUMONT, H.J., 1975. - A note on some dragonflies from Afghanistan. *Odonatologica* 4: 243-248.
- DUMONT, H.J. & BORISOV, S.N., 1995. - Status and Range of the species-pair *Ischnura forcipata* MORTON, 1907 and *Ischnura intermedia* DUMONT, 1974 (Insecta: Odonata: Coenagrionidae). *Biol. Jrb. Dodonaea*, in press.
- JÖDICKE, R., 1994. - Subspecific division of *Sympetrum sinaiticum* DUMONT, 1977, and the identity of *S. vulgatum decoloratum* (SÉLYS, 1884) (Anisoptera: Libellulidae). *Odonatologica* 23: 239-255.
- MORTON, K.J., 1907. - Odonata collected by Lt-Colonel Nurse, chiefly in North-Western India. *Trans. ent. Soc. London* 1907: 303-308, pl. 24.
- SCHMIDT, E., 1961. - Ergebnisse des Deutschen Afghanistan-Expedition 1956 den Landessammlungen für Naturkunde Karlsruhe sowie der Expedition J. KLAPPERICH, Bonn 1952-53 und Dr. K. LINDBERG, Lund (Schweden) 1957-60. *Beitr. naturk. Forsch. Süds Dtl.* 19: 399-435.
- SEIDENBUSCH, R., 1994. - Odonatatenfauna des Gökbel-Hochplateaus in mittleren Taurus bei Alanya, Türkei. *Notul. odonatol.* 4: 73-74.

Sur quelques Berosini (Coleoptera: Hydrophilidae)
de la collection LIZER Y TRELLES*

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Abstract

Some specimens of the LIZER Y TRELLES collection have been found after being presumed lost, and are deposited at the Museo argentino de Ciencias naturales. A list is given of the Berosini (Hydrophilidae), among which are the three syntypes of *Berosus arcanus* KNISCH, 1924, not retained by this author. A lectotype and paralectotypes are here designated.

Keywords: Coleoptera, Hydrophilidae, *Berosus*.

Résumé

Des exemplaires de la collection LIZER Y TRELLES qu'on croyait perdus ont été retrouvés et sont déposés au Museo argentino de Ciencias naturales. On donne ici la liste des Berosini (Hydrophilidae), parmi lesquels se trouvent trois syntypes de *Berosus arcanus* KNISCH, 1924, non retenus par cet auteur. On désigne ici un lectotype et des paralectotypes.

Resumen

Se han encontrado algunos ejemplares de la colección LIZER Y TRELLES que se creían perdidos y que han sido depositados en el Museo argentino de Ciencias naturales. Se da una lista de los Berosini (Hydrophilidae), entre los cuales se encuentran los tres sintipos de *Berosus arcanus* KNISCH, 1924, que no fueron retenidos por ese autor. Se designan aquí lectotipo y paralectotipos.

* Received 25.XI.1994.