

A NEW SPECIES OF CENTIPEDE, *LITHOBIUS (MONOTARSOBIUS) BLASCOI* N. SP. (CHILOPODA, LITHOBIOMORPHA) FROM SPAIN

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A new species of centipede, Lithobius (Monotarsobius) blascoi n. sp. (Chilopoda, Lithobiomorpha) from Spain.— The new species, from an arid area in the neighbourhood of Pina de Ebro, Zaragoza, is fully described and shows characters typical of centipedes from arid habitats. Despite having 22-23 antennal articles and rarely as many as 25 on one side, reasons are given for referring *L. blascoi* to *Monotarsobius* which has about 20 antennal articles, rather than to *Sigibius* in which these articles are more numerous. A similar species from Spain, *Lithobius (Monotarsobius) osellai* Matic, can be distinguished from *L. blascoi* by a number of characters.

Key words: *Lithobius*, *Monotarsobius*, New species, Arid habitat.

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INTRODUCTION

The Lithobiomorpha of the Iberian peninsula have received attention from a number of authors, all of whose records were repeated by SERRA (1980) who added many more of his own. The purpose of the present paper is to describe a new species of *Monotarsobius* found in association with the common Iberian lithobiomorphs *Lithobius lusitanus* Verhoeff, *L. pilicornis* Newport and *L. variegatus* Leach under stones in a *Juniperus thurifera* wood near Pina de Ebro, Los Monegros about 60 km SE of Zaragoza. The area in which this wood lies is notably arid and its climate and vegetation are described by BRAUN-BLANQUET & DE BOLÓS (1957). The new species shows characters typical of centipedes from arid habitats and seems to be very local in its distribution.

DESCRIPTION

O. Lithobiomorpha Pocock, 1895
Fam. Lithobiidae Newport, 1844
Genus *Lithobius* Leach, 1814
Subgenus *Monotarsobius* Verhoeff, 1905

Small lithobiid centipedes, usually with 18-22 antennal articles showing little intraspecific variability, 2 + 2 prosternal teeth, tergites without posterior projections and tarsal articulations fused on the first 12 or 13 legs.

Lithobius (Monotarsobius) blascoi n. sp.
(figs. 1-6).

Material.— Holotype: ♂, 9.4 mm long with 23 + 24 antennal articles and seven ocelli on each side, Spain, Zaragoza Prov., Pina de

Ebro, Juniper wood, 380 m, 30 IX 90, leg. J. Blasco-Zumeta. Paratypes: 1 ♂ 5 ♀♀, same data as for holotype; 1 ♀ 1 ♂ juv. 13 II 89; 1 ♂ 26 II 89; 1 ♂ 26 III 89; 3 ♂♂ 1 ♀ juv. 1 agenitalis 27 III 89; 1 ♀ juv. 28 IV 89; 1 ♂ 30 XI 89; 1 ♂ 19 XII 89; 3 ♂♂ 1 ♀ 10 I 90; 1 ♂ 1 ♀ 12 X 90; 1 ♀ 20 X 90; otherwise as for holotype. Total material: 13 ♂♂, 9 ♀♀, 1 ♂ juv., 2 ♀♀ juv., 1 agenitalis.

The holotype and paratypes are deposited in the Museu de Zoologia of Barcelona. (Holotype: ♂ 92-0039. Paratypes: 1 ♂ 5 ♀♀ 92-0040, 1 ♀ 1 juv. 92-0041, 1 ♂ 92-0042, 1 ♂ 92-0043, 3 ♂♂ 1 ♀ juv. 1 agenitalis 92-0044, 1 ♀ juv. 92-0045, 1 ♂ 92-0046), 1 ♂ 92-0047, 3 ♂♂ 1 ♀ 92-0048, 1 ♂ 1 ♀ 92-0049, 1 ♀ 92-0050).

Etymology: named after J. Blasco-Zumeta who collected the specimens and made them available to the author.

Diagnosis: 7.5-10 mm long, 22-24 (25) antennal articles, 6-7 ocelli on each side, organ of Tömösváry very small, 15th accessory apical claw present, 14th and 15th legs swollen, male 15th leg with tibia dorsally sulcate and femur with a dorso-distal wart-like outgrowth, female gonopod with two long acuminate spurs and a tridentate claw.

Adults

Colour: dark brown. Size: 7.5-10 mm long, 0.90-1.25 mm broad at T.10. Head: smooth; 0.75-0.95 mm broad, as broad as long, about as broad as T.3; projection of lateral marginal interruptions distinct; posterior border straight. Antenna: about a third of body-length; usually 22-23 articles, frequently 22 + 23 but occasionally 23 + 24 and one male with 23 + 25; articles mostly as long as broad, terminal article twice to three times as long as broad. Ocelli: six or seven on each side, usually 1 + 3, 3; posterior ocellus

much the same size as postero-superior or a little larger; organ of Tömösváry much smaller than an ocellus (fig. 1). Posternum: with 2 + 2 teeth, the line of the apices recurved; porodont slightly stouter than the large setae which are curved distally; lateral to the porodont the free border forms a prominent angle (fig. 2) or, in smaller specimens, an irregular shoulder. Tergites: smooth; T.1 semicircular, narrower than T.3 with posterior border straight; posterior border of T.3 very slightly, those of T.5 and 14 slightly and those of T.8, 10 and 12 moderately emarginate; posterior angles of large tergites evenly rounded, those of T.9, 11 and 13 without projections. Intermediate tergite: posterior border straight in males, broader with posterior border slightly emarginate in females. Coxal pores: small, circular; 1,1,1,1, in males; 1,1,1,1; 1,1,2,1 or 1,2,2,1 in females; when there are two pores on the 13th or 14th coxae the medial one is very small (fig. 3). Anterior legs: tarsal articulations fused on first 13 legs but represented by a pale line on the 12th and 13th; accessory apical claws and sensory spurs well-developed. 14th and 15th legs: markedly swollen in both sexes, more so in males in which the 15th femur bears a dorso-distal wart-like outgrowth arising from a shallow depression and the 15th tibia has a shallow dorsal sulcus on its distal two-thirds (fig. 4); accessory apical claw usually well-developed on the 14th, very small and easily overlooked on the 15th; no obvious sensory spur on either leg; 15th about a quarter of body-length. Glandular pores: concentrated on the 14th and 15th legs only. Male genitalia: first genital sternite with six to nine setae on each side; second genital sternite without setae; gonopod a simple bud with one seta. Female gonopod: with two long acuminate spurs and a slender claw with both lateral and medial denticles distinct; as in those of the prosternum, the

larger ventral setae are curved distally (fig. 5); dorsolateral setae short, slightly stouter than the general setae, three placed close together on the second article and one distal seta on the third (fig. 6). Spinulation (table 1): letters in brackets indicate the usual variable spines but in addition to these variations 12 VpP, 14 VmT, 12 DmP and 12 DaF are rarely present, and 14 Vmtr, 14 VmP, 2 VmT, 1 DaF and 11 DaF are

rarely absent; all the spines are short and those on the more anterior legs are easily overlooked.

Agenitalis

5.2 mm long with 18 antennal articles, four ocelli on each side and no spines on the 15th legs.

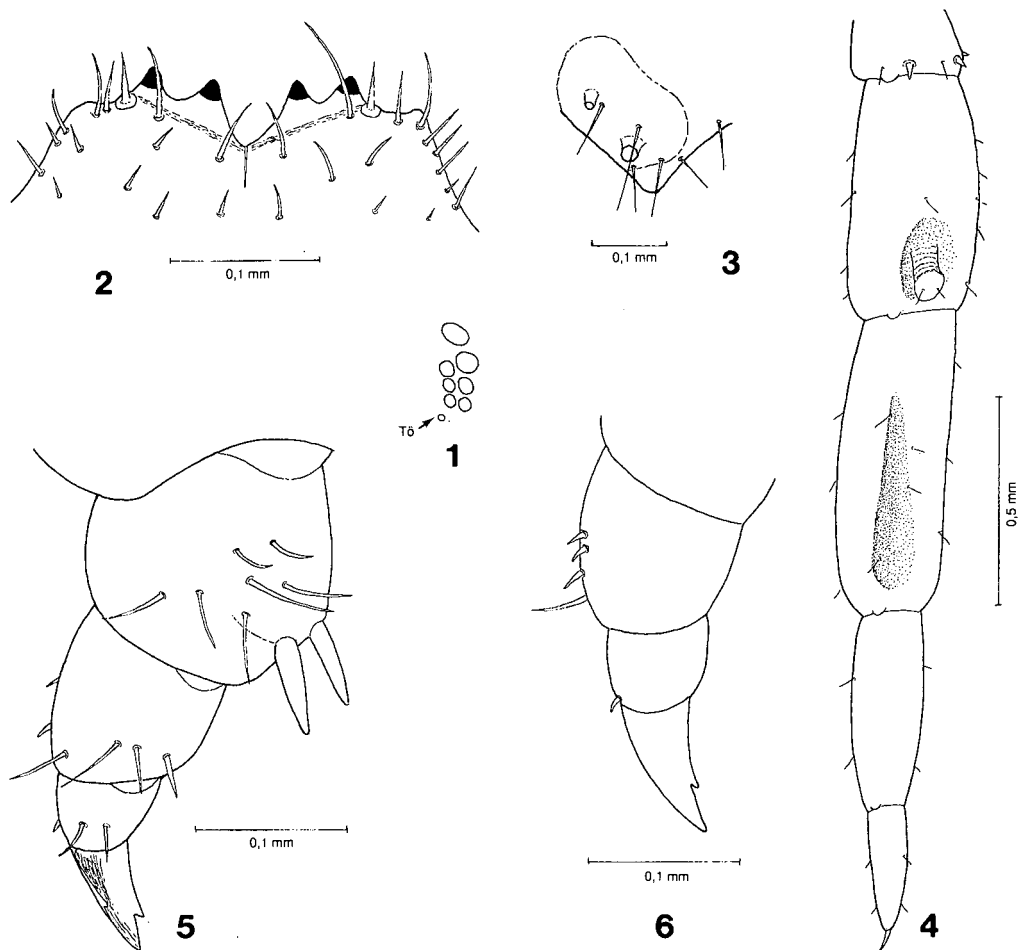


Fig. 1-6. *Lithobius (Monotarsobius) blascoi* n. sp.: 1. Right ocelli and organ of Tömösváry (Tö); 2. Dental margin of prosternum, ventral view; 3. Left female 14th coxa to show pores, ventral view; 4. Distal four articles of left male 15th leg, dorsal view; 5. Right female gonopod, ventral view; 6. Distal two articles of left female gonopod, dorsal view.

Table 1. Dorsal and ventral spinulation of adult specimens of *Lithobius (Monotarsobius) blascoi* n. sp.

Leg no.	Ventral					Dorsal			
	C	tr	P	F	T	C	P	F	T
1	-	-	-	-	(m)	-	-	a	a
2	-	-	-	-	m	-	-	a	a
3	-	-	-	(m)	m	-	-	a	a
4-10	-	-	-	m	m	-	-	a	a
11	-	-	-	m	m	-	-	a(p)	a
12	-	-	-	m	m	-	(p)	(p)	a
13	-	-	p	m	m	-	mp	(p)	-
14	-	m	mp	(m)	-	-	mp	-	-

Juvenile female

Despite the more numerous ocelli and the less mature gonopods in the larger female, both specimens probably belong to the same late post-larval stadium and are described separately.

6.3 mm long with antennae missing, five ocelli on each side, adult spinulation on the 15th legs and small unequal spurs and a dentate claw on the gonopod.

6.5 mm long with 21 antennal articles, six ocelli on each side, adult spinulation on the 15th legs and a single small spur and a simple claw on the gonopod.

Juvenile male

Almost certainly belonging to the stadium immediately preceding maturity (pseudomaturus). *

7.2 mm long with 22 + 23 antennal articles, five ocelli on each side, adult spinulation on the 15th legs, a small 15th femoral outgrowth and four setae on each side of the first genital sternite.

Other post-larval stadia

There is certainly one stadium, and possibly two, succeeding the agenitalis but preceding

the stadium to which the two females belong, which is not represented among the paratypes.

DISCUSSION

EASON (1983) redefined *Monotarsobius* to receive those species with the number of antennal articles restricted to 20 or thereabouts with little intraspecific variability in their number, referring those small species with these articles well in excess of 20 with considerable variability to *Sigibius* Chamberlin, 1913. Although the number of antennal articles in *Lithobius blascoi* is higher than 20, they rarely exceed 23 and then only on one side, so the new species is referred here to *Monotarsobius*.

Males of *Lithobius blascoi* are only likely to be confused with those of *L. (Monotarsobius) osellai* Matic, 1968, the only other known species of either *Monotarsobius* or *Sigibius* with the characteristic wart-like outgrowth on the male 15th femur. But *L. osellai*, although also known only from Spain (Sierra de Gredos), is a cave-dweller with only three ocelli on each side, an enlarged organ of Tömösváry, no sulcus on the 15th tibia, a simple 15th apical claw and more profuse spinulation of the legs (MATIC, 1968). Matic only described a single male of *L. osellai* but SERRA (1979) described a female from the same locality which, in addition to the characters common to both sexes, differs from *L. blascoi* in having spatulate spurs on the gonopod.

LITTLEWOOD (1991) quotes a number of authorities who found that centipedes of all orders from arid habitats tend to have the coxal pores reduced in number and size, presumably to minimise water-loss via these external apertures. It seems significant that

Lithobius blascoi in which these pores are both few and small is common in the arid area around Pina de Ebro but unknown elsewhere.

SERRA (1978) collected numerous centipedes in January 1975, March 1977 and March 1978 from an arid part of Los Monegros some 30 Km east of Pina de Ebro and recorded, among other species, *Lithobius stramineus* (Attems) (= *lusitanus*), *L. pilicornis* and *L. insignis* Meinert (= *variegatus*). The absence of *L. blascoi* from the collection of Serra suggests that it is very local in its distribution.

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