

THE *CRYPTOPS* SPECIES FROM A WELSH GREENHOUSE COLLECTED BY I.K. MORGAN WITH A DESCRIPTION OF A PROBLEMATIC SPECIMEN OF A SPECIES NEW TO THE BRITISH ISLES (CHILOPODA: SCOLOPENDROMORPHA: CRYPTOPIDAE).

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INTRODUCTION

Tony Barber sent me for comment, five specimens of *Cryptops* collected by Ian Morgan from a heated Greenhouse in Singleton Park, Swansea (grid ref, SS 629947) in April 2007. They comprise three *C. hortensis* (Donovan, 1810) one *C. parisi* Brolemann, 1920, and a specimen which is closely related to *C. hispanus* Brolemann, 1920 and may belong to that species. It has been designated *C. cf. hispanus* Brolemann. The specimens were cleared in 2-phenoxyethanol (ethylene glycol monophenyl ether). Brief notes are provided below on the *C. parisi* and *C. hortensis*, and *C. cf. hispanus* is described in detail.

CRYPTOPS HORTENSIS (DONOVAN, 1810)

Specimen 1. A male, body length 15 mm, containing three fully formed and a fourth spermatophore forming. Two loose ultimate legs with 9+3 and 8+3 tibial and tibial saw teeth probably from either of the larger specimens.

Specimen 2. A female, body length 15 mm, containing large ova from segment 9 to 19. The number not discernable.

Specimen 3. A male, body length 10 mm, containing three fully formed spermatophores.

NB Barber (2009) gives for *C. hortensis* “up to 30mm, often much smaller.” The fact that specimen 3 measuring ca 10 mm was a mature male suggests that there are a number of mature stadia.

CRYPTOPS PARISI BROLEMANN, 1920

One specimen, a female, body length c. 29 mm, the ultimate legs with nine tibial and six tarsal saw teeth and containing an estimated 28 large ova.

CRYPTOPS CF. HISPANUS BROLEMANN, 1920

Figs 1-13, below.

(*Cryptops hispanus* Brölemann 1920 *Memorias de la Real Sociedad Española de Historia Natural*. **11** (4): 144. Figs. 19-21.)

REMARKS

In Attems (1930) key the specimen runs down to *Cryptops megaloporus* Haase, 1887 (New Zealand) and *C. neocaledonicus* Ribaut, 1923 (New Caledonia). The key characters used by Attems were T1 with an anterior transverse suture but no paramedian or other sutures, ultimate leg articles without lateral and medial distal tubercles ("Endzänchen"). Anterior tergites without a median sulcus ("Medianfurche"). Head without, or with short paramedian sutures, and tarsi of legs 1-19 undivided. Attems separated *C. hispanus* (Spain) from these two species by its possession of divided tarsi on legs 1-19 and also implies in the key that it has distal medial tubercles on the ultimate legs but this latter contradicts Brölemann's (1920) description.

The Welsh specimen may be distinguished from *C. megaloporus*, as redescribed by Archey (1924), and *C. neocaledonicus*, by its lack of a femoral saw tooth on the ultimate leg and further from *C. neocaledonicus* by its total lack of cephalic sutures. I consider it to be closely related to *C. hispanus*, which was described by Brölemann (1920) from an unspecified number of specimens from Pozuela de Calatrava (Ciudad Real) in Spain, if not that species (see Discussion).

A fourth species with an anterior transverse suture but no other sutures on T1 was described by Verhoeff (1931) on the basis of a single specimen, length 20.5 mm, from Cap Martin, French Riviera. *Cryptops sublitoralis* Verhoeff, 1931 differs from the Welsh specimen in that the transverse suture on T1 is curved rather than angular, T2 has two lateral curved sutures on each side meeting an anterior curved suture and the ultimate legs have 11 + 5 saw teeth, those of the tibia increasing in size from the proximal to the distal end of the tooth row.

DESCRIPTION

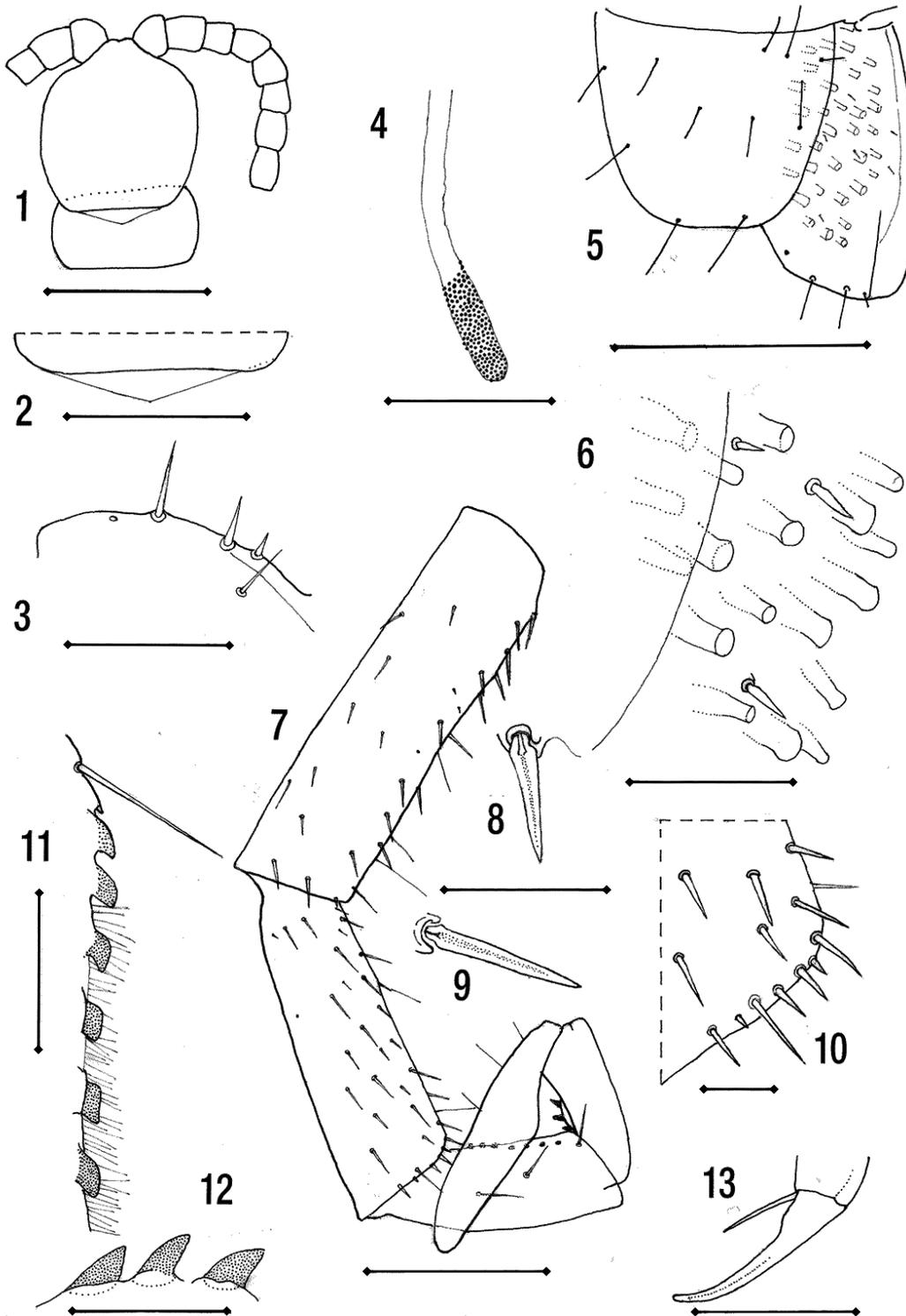
Body length 15 mm. Colour (in 70% ethanol) yellowish white without any dark subcutaneous pigment. Sex not determined. No eggs or spermatophores seen in the cleared specimen.

Antennae with scattered long setae on articles 1-3 with small setae increasing from 4. A double whorl of long basal setae from 5 or 6. Cephalic plate slightly wider than long, with fine scattered setae, without sutures, the posterior border straight and overlapping the anterior margin of T1 (Fig. 1). With a pair of post antennal clypeal setae, followed by one somewhat lateral (? of a pair) one median plus three further pairs of minute setae. Prelabral setae nine. Labrum unidentate.

Trunk tergites with fine scattered setae. Tergite 1 with an anterior transverse suture consisting of two straight oblique arms meeting in the mid line at an obtuse angle (Figs. 1, 2). Paramedian sutures very fine their extent difficult to see in the cleared specimen. Oblique (arcuate) sutures from T2 to T7. Lateral crescentic sulci from T4. Tergite 21 without a median longitudinal suture.

Forcipular coxosternite broken in middle, right side of anterior margin damaged, the left with two large and three smaller setae (one represented only by its socket) on or barely behind anterior margin (Fig.3). Forcipular poison gland calyx club-shaped (Fig. 4) and situated in the femur and tibia.

Endosternite of sternite 1 obscured, endosternites gradually reducing in size from S2 to S9. Sternite cruciform sulci not observed. Transverse skeletal thickening straight, visible from S3 but barely apparent. Sternite 21 with sides converging and posterior margin straight (Fig. 5). Coxopleuron with ca 35 pores, five small spiniform setae in the pore field (Fig. 6) which occupies the anterior 84% of the coxopleuron. No setae in the narrow region between the pore field and the posterior margin of the coxopleuron which bears four fine setae.



FIGURES 1-13: *Cryptops cf. hispanus*.

- 1) Head plate and tergite 1. 2) Detail of anterior transverse suture on T1. 3) Left half of anterior margin of forcipular coxosternite. 4) Calyx and part of duct of forcipular poison gland. 5) Sternite 21 and left coxopleuron. 6) Detail of pore field. 7) Ultimate leg medial view. 8) Lanceolate seta from prefemur. 9) Lanceolate seta from femur. 10) Distomedial edge of femur. 11) Tibial saw teeth. 12) Tarsal saw teeth. 13) Pretarsus leg 12.

Scale bars = 0.1 mm; except Fig. 1 = 1.0 mm; Figs. 2, 5 & 7 = 0.5 mm.

Ultimate legs (Fig. 7). The single (detached) leg lacks the ultimate pretarsus. Prefemur with lanceolate setae dorsomedially and ventromedially (Fig. 8) and ventrally, with an almost glabrous medial strip. Fewer and only ventrolateral on lateral surface. Femur without a saw tooth, with lanceolate setae (Fig. 9) medially, ventromedially and ventrally with five of varying length on distomedial edge (Fig. 10). Only two ventrolateral setae. Tibia with one very small and six well-spaced blunt slightly rounded or flat-topped saw teeth which are flanked laterally by a dense brush of very fine setae (Fig. 11) and three setae medially. Tarsus 1 with 3 sharp saw teeth on a slight eminence (Fig. 12) and two fine ventral setae only. Tarsus 2 with a few scattered fine setae, (three laterally and four ventrally) and a dense brush of very fine setae ventrally in proximal half. Oddly Tarsus 1 lacks a brush of fine setae.

Ambulatory legs. Tarsi of 1-19 undivided. Pretarsi each with a long single accessory spur varying between 35 and 44% the length of the claw (Fig. 13).

DISCUSSION

The only detailed description of *C. hispanus* is Brolemann's (1920) original one. Serra (1985) examined numerous specimens from Portugal and Andalucía which, he stated, generally agreed with Brölemann except for the number of saw teeth, namely 12 and 6 as opposed to 8 and 4 and incomplete sutures on the head capsule and evidence traces of longitudinal sutures on T1. His figure shows a curved anterior transverse suture. He noted that these coincide with Brolemann's examples from Argelia: I have been unable to find a reference to these. Serra suggested that these differences might be due either to individual variation or justify a new species.

The specimen here described closely resembles Brolemann's (1920) description, the cephalic plate without sutures and with a truncated hind margin, T1 with a rectilinear anterior transverse suture and no other sutures. Ultimate legs without dorsodistal teeth or tubercles (épines). No saw tooth on ultimate femur.

The differences between Brolemann's description and the Welsh specimen are:

- 1) 12 prelabral setae (shown in Brolemann's figure 19) as opposed to 9.
- 2) Anterior margin of coxosternite almost straight, 2 setae on anterior margin and 2 larger just behind rather than curved on each side, the two larger very close to the margin.
- 3) Tarsi of legs 1-19 divided with functional articulation as opposed to tarsi undivided.
- 4) According to Brölemann ultimate femur and tibia with a marginal row of 4 lanceolate setae ("spinules") on the distal medial edge but in the Welsh specimen five on the femur but the tibia has no lanceolate setae.

Differences 1 and 2 may be juvenile characters and the specimen containing no eggs or spermatophores appears to be immature, however, Brölemann states 25 coxal pores: there are ca 35 in the Welsh specimen. Brölemann did not record the size of his specimens merely stating the same size as *C. hortensis* which he gives (Brolemann, 1930) as up to 30 mm. With regard to difference 3, tarsi divided or not may be a good character but is not always reliable (Lewis, 2009). The absence of a marginal row of lanceolate setae on the ultimate tibia in the Welsh specimen (difference 4) may be significant.

Brölemann made no mention of the club-shaped forcipular poison gland calyx, the pretarsal spur, or of the fine longitudinal brush of setae on the ultimate tibia and tarsus 2.

As suggested above this single specimen may well be a *C. hispanus* but without a fuller description of that species and data on individual variation it would be unwise to describe it as a new species. As full a description as possible as *C. cf. hispanus* is given which should allow any future specimens to be recognised pending clarification of its true identity.

Cryptops cf. hispanus is clearly distinguishable from other *Cryptops* species recorded from the British Isles by the lack of cephalic sutures and T1 having an angular anterior transverse suture but no other sutures.

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