

**ON *CRYPTOPTS DORIAE* POCOCK, FROM THE WET TROPICAL BIOME OF THE EDEN PROJECT, CORNWALL (CHILOPODA, SCOLOPENDROMORPHA, CRYPTOPIDAE)**

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**INTRODUCTION**

Tony Barber sent me eight specimens of *Cryptops* collected by hand sorting and Tullgren funnelling in May 2005 from five sites in the wet tropical biome at the Eden Project in Cornwall. As might be expected, they are not a British species. They belong to a group of species characterised by the absence of a transverse suture (*Ringfurche*) on tergite 1 and with one or more saw teeth on the femora of the ultimate legs of which Attems (1930) listed 13 species (subsequently a further 18 species have been described). They fall within the diagnosis of *C. (C.) doriae* Pocock 1891 given by Lewis (1999) and are here regarded as that species. The species has been recorded from Burma [Myanmar], Nepal, India, Indonesia (Java), Papua New Guinea, Vietnam and (Lewis, unpublished) the Seychelles.

The specimens have been numbered using the number of the site and of the individual e.g. 8.1, 8.2 etc. and have been deposited in the Natural History Museum London. The terminology used is that recommended by Lewis, Edgecombe and Shelley (2005); Spm is used as an abbreviation for specimen and T for tergite.

***Cryptops (Cryptops) doriae* Pocock**

*Cryptops doriae* Pocock, 1891: 421.

*C. (C.) doriae*: Attems, 1930: 214.

*C. (C.) doriae*: Lewis, 1999:20, figs 10-13, 14-35 & 51-53.

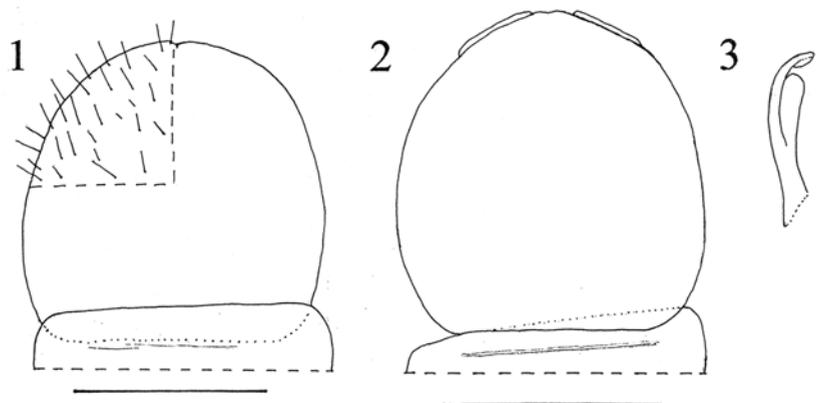
Material examined: Eden project, Cornwall, Humid tropical Biome, 11.05.2005, coll. ADB, ML. Site 4: spms 4.1 ♂ 11 mm and 4.2 ♂ 10.5 mm (broken and lacks ultimate legs), Site 6: spm 6.1 ♀ 12 mm (broken), Site 8: spm 8.1 ♂ 13mm, 8.2 ♂ 11mm, 8.3 ♂ 12.5 mm, Site 9: spm 9.1 ♂ 11.5 mm. NB a single specimen from site 5 is a very small immature *Cryptops* and has not been identified.

Colour: light brown, brown or (spm 4.2) brownish orange. Specimens lack black subcutaneous pigment but in specimen 8.1 brown subcutaneous pigment is clear beneath tergites 3 to 6 and 19 and 20 and in specimen 4.1 brownish orange pigment is present beneath tergites 3 to 6 and 17 to 20.

Antennomeres 17, except where damaged or regenerated when there are fewer. Antennomere 1 with long and a few shorter setae. An increase in shorter setae on antennomeres 2 and 3, 4-14 with dense covering of short fine setae with basal whorl of long setae.

Head plate slightly longer than wide, without sutures. Tergite 1 overlies the posterior edge of the head plate in spms 4.1, 4.2, 6.1, and 8.2 (Figure 1) but in spms 8.1 8.3 and 9.1 the head plate overlies the anterior edge of T1 a little (Figure. 2). Setae arranged as in Figure 1. Clypeus with 2

+1+2 +2 setae and a transverse row of 7-9 setae in front of the labrum (spms 4.1 & 2, 6.1). Labral sidepieces not notched. Tarsal claw of second maxillary telopodite bilobed (spm 9.1, Figure 3).

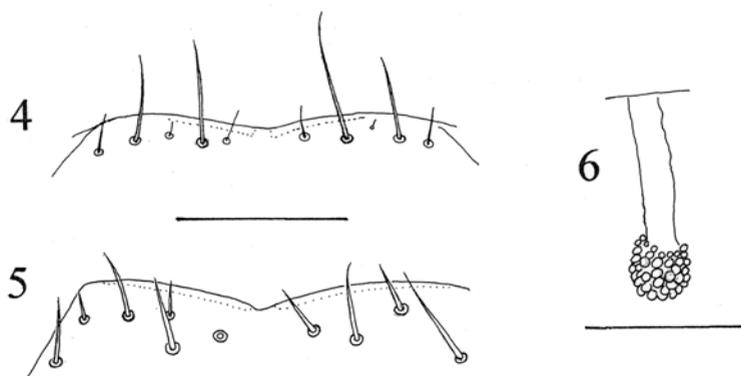


**Figures 1-3: *Cryptops doriae* Pocock**

(1) Head plate and anterior part of tergite 1 spm 8.1, with area showing arrangement of setae. (2) Head plate and anterior part of tergite 1 spm 8.2. Scale bars = 0.5 mm  
 (3) Tarsal claw of telopodite of second maxilla spm 9.1. Scale bar = 0.05 mm.

Anterior margin of forcipular coxosternum slightly curved on each side with slight median incision and more or less sclerotised. With two or three long and two or three small to medium setae behind anterior margin (Figures 4 & 5).

Poison gland (Figure 6) situated in the anterior 20% to 30% of the forcipular trochanteroprefemur.

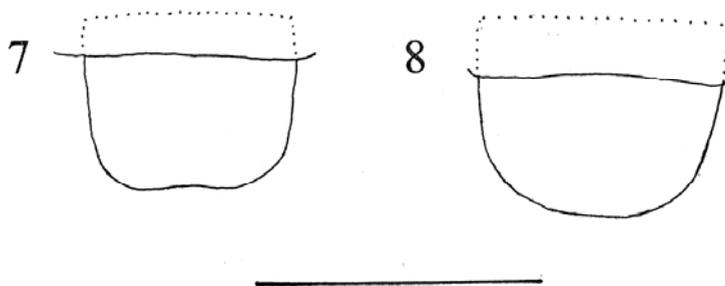


**Figures 4-6: *Cryptops doriae* Pocock**

(4) Anterior margin of forcipular coxosternum spm 4.1. (5) Anterior margin of forcipular coxosternum spm 8.1. (6) Calyx and portion of duct of forcipular poison gland spm 8.1. Scale bars = 0.1 mm

First tergite without sutures but in some specimens cleared in ethylene glycol a fine anterior transverse groove or line, which is easily overlooked, is visible below the cuticle (Figures 1 & 2). It occupies about two-thirds of the width of the tergite. It could possibly be mistaken for a vestigial anterior transverse suture (*Ringfurche*) which it is not. Tergite paramedian sutures very fine and only seen in cleared specimens under high magnification and therefore their exact extent difficult to

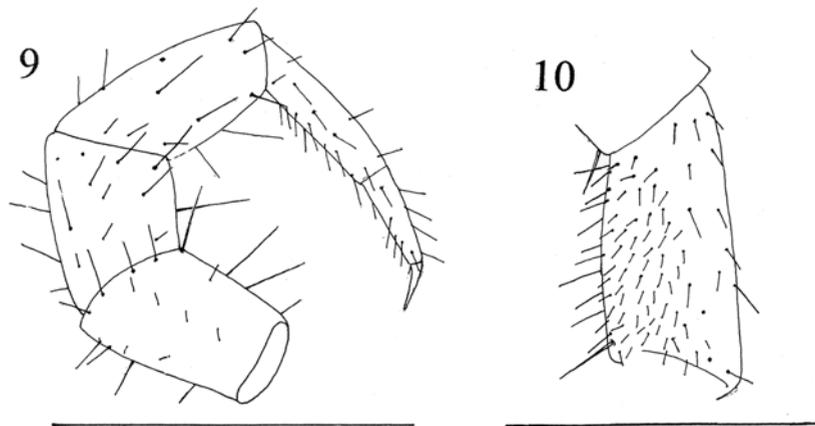
determine. In specimen 8.1 very short anterior sutures on T8, anterior 57% and posterior 15% on T19. In specimen 8.2 anterior 60% on T11, anterior 65% and posterior 18% on T12, almost complete on T13, anterior 45% only on T15 and unclear on T20. On first examination not clear in specimen 8.3 but on second examination short anterior sutures on T6, anterior 30% on T7 anterior 50% and posterior 20% on T9, anterior 50% and posterior 10% on 18. Extent of tergite paramedian sulci difficult to determine: incomplete anteriorly on T 7 and 8 present to T16 in specimen 8.1, incomplete posteriorly on T 10, 11 and 12 but very difficult to determine in specimen 9.1 even when the specimen was dry. Median ridge low and extent difficult to determine. Lateral crescentic sulci are much easier to see. Present from T3 to T19 or 20. Poorly developed on T3 and 4 in some specimens. Tergite 21 seen in cleared specimens about as long as wide posterior border triangular with rounded apex. Without median suture but with very shallow median posterior depression. Sternites (seen by reflected light) punctate. With narrow curved transverse and wide longitudinal sulci on most segments, their extent very difficult to determine. Sternite 21 generally with posterior border straight, or slightly concave (Figure 7) but with broadly rounded corners in spm 8.1 and 9.1 (Figure 8). About as long as wide (variation length to width 1.2:1 in spm 4.2, 0.93:1 in spm 6.1).



**Figures 7-8: *Cryptops doriae* Pocock**

(7) Sternite 21 spm 8.1, (8) Sternite 21 spm 4.1. Scale bar = 0.5 mm

Legs 1-19 setose, without spinous setae. Tarsi with faint division from leg 3 (Figure 9). Accessory tarsal spurs two, one longer the shorter second difficult to see. Very variable in length, the longer up to 39% length of tarsal claw. Leg 20 with tarsus clearly divided with relatively dense small setae ventrally on prefemur, femur and tibia in males (Figure 10).



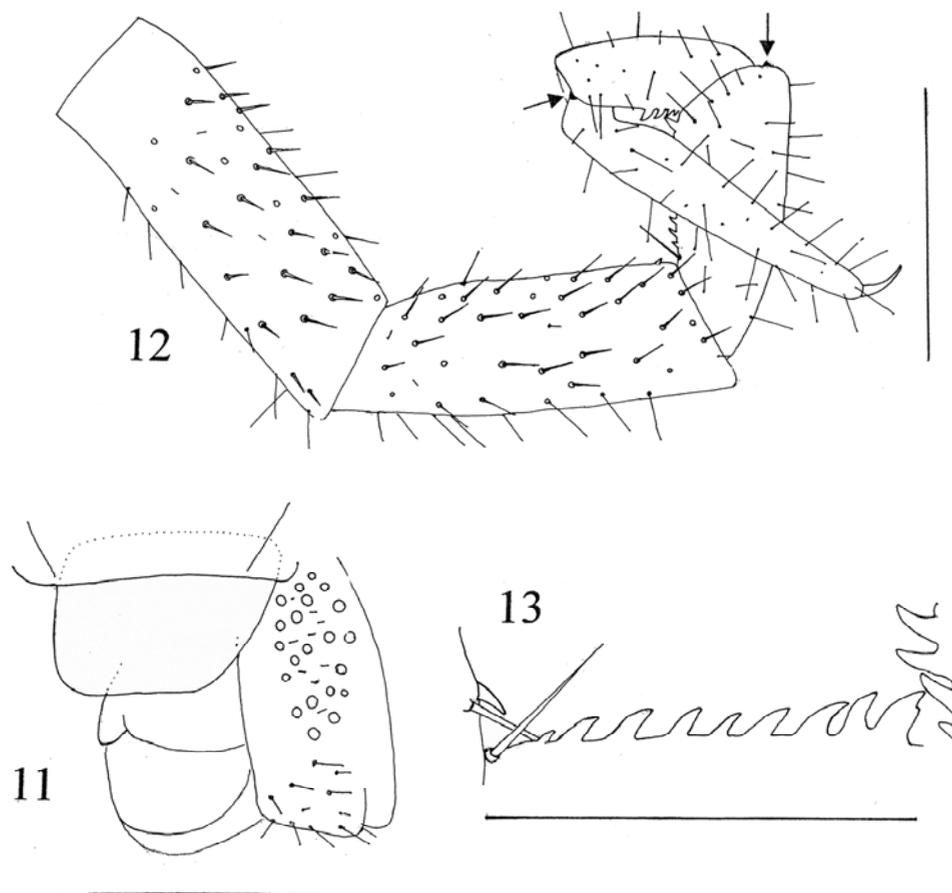
**Figures 9-10: *Cryptops doriae* Pocock**

(9) Leg from mid-body region spm 9.1. (10) Femur of leg 20 spm 8.3. Scale bars = 0.5 mm

Ultimate legs: Coxopleural pores 17 (spm 8.1) to 22 (spm 8.2) occupying anterior 60-71% of coxopleuron. Six to 10 small setae in pore field, five to about 10 between the pore field and the posterior margin and four to seven large and small setae on the posterior edge of the coxopleuron (Figure 11). The setae more robust anteriorly, ventrally and posteriorly on the prefemur, and ventrally and posteriorly on the femur (Figure 12). Tibia and tarsus 1 & 2 with long fine setae. Small distal tubercles, often difficult to see, posterior on tibia and tarsus (Figure 12, arrowed) sometimes also anterior on tibia and tarsus I. A loose leg probably from spm 4.1 has a narrow longitudinal glabrous strip on the posterior surface of the prefemur also seen in spm 8.1 but not seen in the other specimens.

Saw teeth: mostly femur 1, tibia 8, tarsus I 3 or 4, but 1+6+3 or 4 in spm 8.1, 1/0+9+3/4 in spm 8.2. Distal tibial saw tooth bifid in 8.3 and 9.1 (Figure 13).

Maturity: Spms 8.1, 8.2, 8.3 and 9.1 contained two or three spermatophores. Specimen 6.1 appears to be an immature female and spms 4.1 & 4.2 immature males.



**Figures 11-13: *Cryptops doriae* Pocock**

- (11) Ventral view of terminal segments spm 8.3. Only the setae on the coxopleuron are shown. (12) Ultimate leg spm 8.3. Arrows indicate distal tubercles on tibia and tarsus 1. Scale bars = 0.5 mm
- (13) Detail of femoral, tibial and tarsal saw teeth spm. 8.3. Scale bar = 0.25 mm

## DISCUSSION

Pocock (1891) gave the length of *C. doriae* as 15 mm which compares with a maximum of 13 mm of the Eden specimens. The Nepalese specimens described by Lewis (1999), however, reach a much larger size (up to 33 mm). They also show a concomitant increase in coxal pore number to a maximum of 72 compared to a maximum of 22 in the Eden material. It is possible that we may be dealing with two closely related species distinguishable only on size, or the differences may be the result of different growth rates and number of stadia in different habitats.

Specimens of *Cryptops doriae* are distinguishable from the three British species as characterised by Eason (1966) and Barber (2000) by the presence of a saw tooth on the femur of the ultimate leg. It should be stressed, however, that this tooth is not always easy to see. In addition they differ from *C. anomalans* Newport by the absence of sutures on the head plate and on tergite 1, and from *C. parisi* Brolemann by the absence of head plate sutures and less protuberant anterior border of the forcipular coxosternum. Additional differences from *C. hortensis* Donovan are the presence of several, rather than a single prominent seta in the coxal pore field and the lack of a ventral groove on the ultimate leg prefemur.

## ACKNOWLEDGEMENTS

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