

**CYLINDROIULUS APENNINORUM (BRÖLEMANN, 1897) (DIPLOPODA: JULIDAE) FOUND IN IRELAND****Roy Anderson**

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E-mail: [roy.anderson@ntlworld.com](mailto:roy.anderson@ntlworld.com)**DISCOVERY**

While looking at the fauna of a Parks Dept. tip at Sir Thomas and Lady Dixon Park on the outskirts of Belfast (Irish Grid J30386742) on 1 November 2016, I came across several examples of an unfamiliar julid. I contacted Tony Barber with a rough description and discovered that a similar julid had been found on the Isle of Wight and near Plymouth (Barber & Read, 2016). Tony subsequently informed me that the specific characters used to determine the British examples could be applied to at least two species in Europe. However, the most likely determination of my specimens was as *Cylindroiulus apenninorum* (Brölemann), a species native to Italy.

**TAXONOMY**

An obvious characteristic of *Cylindroiulus apenninorum* is its possession of projecting scales on both the dorsal and ventral surfaces of the telson. This character is also found in *Enantiulus armatus* (Ribaut) but *Cylindroiulus apenninorum* is larger and darker and lacks setae on the rings. Setation on the rings is obvious in *E. armatus* (Barber & Read, 2016). There is a third European species with a projecting scale on the ventral side of the telson, *Allajulis dicentrus* (Latzel) from Austria (Barber & Read, 2016). And Demange (1981) lists a fourth, *Julus spinosus* (Ribaut) from the valley of the Garonne in the French Pyrenees. In addition, there is *Cylindroiulus pyrenaicus* (Brölemann) now recorded from Wales (Gregory *et al.*, 2018, this edition). But the dorsal anal scale is large and slightly hooked in that species which does not accord with the modest dorsal and ventral scales in the Belfast specimens.

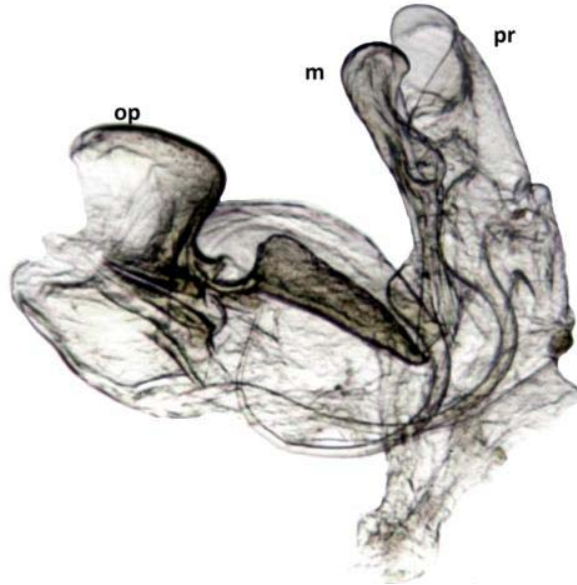
However, reading Barber & Read's (2016) description of *C. apenninorum*, one or two points of difference stood out. The largest specimen found at Belfast in 2016 measured only 18 mm. These specimens were also quite pale varying from pale buff to pale cinnamon brown, with only the telson a darker brown in one or two specimens. There was also the problem that adult males could not be found.

Several visits were paid to the Dixon Park site in 2017 with 4-5 specimens of the target species collected in soil under leaf litter on each occasion. The number soon began to accumulate but, remarkably, only female (or immature) specimens continued to be seen. Not until 2 November 2017 were male specimens finally recovered. Two were found with a single large, dark female measuring 26 mm in length. A male was dissected and the gonopods compared with illustrations of the various species listed above. The best match was, as expected, with *C. apenninorum*. However, Brölemann's drawing of the gonopods (in Barber & Read, 2016; Fig. 2 here) corresponds only roughly with the gonopod profile of the Belfast material. An edited photomicrograph of the left gonopods of an Irish specimen, in mesial profile is shown here (Fig. 1).

In particular the opisthomerite appears narrow and hooked with only translucent (thin) tissues connecting the apex to the rest of the organ (Fig. 1). This appears at odds with the solid oval outline in Brölemann's drawing (Fig. 2).

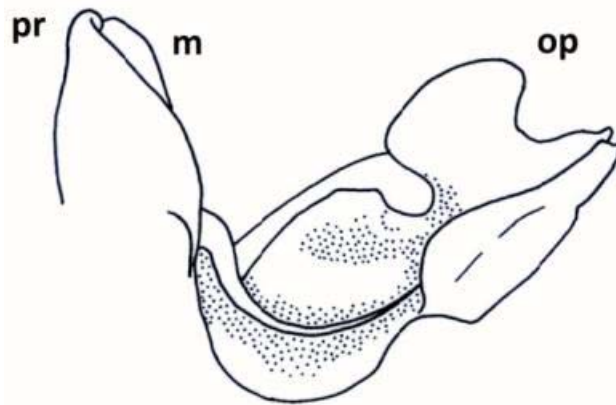
The difference is likely to be a result of viewing by transmitted light in the present instance compared to viewing by incident light. The two figures, in scale and outline, otherwise correspond well and confirm the identify of the Belfast *Cylindroiulus* as *apenninorum*.

The issue of size and colouration and the apparent absence of males can also be accommodated easily. All specimens collected before November 2017 appear to have been immature. But why were no mature animals found before this date? Possibly the colony was only becoming established during this period, when the (more mature) founder colonists were few and therefore easily overlooked.



**FIGURE 1: Left gonopods of *Cylindroiulus apenninorum*, from Belfast** (digested in 10% KOH, cleared in euparal), external mesial view (head end to left).

Key: op - opisthomerite; m - mesomerite; pr – Promerite



**FIGURE 2: Right gonopods of *Cylindroiulus apenninorum* internal view** (head end to right) after Brölemann (1897)

#### THE HABITAT AND ASSOCIATED INVERTEBRATES

The area around the Parks Dept. tip is on the flood plain of the River Lagan. Soils are Lagan Valley Clay, formed during the immediate Postglacial within a glacial lake, and despite their name, quite sandy, well-drained. Composted and uncomposted wood, plant and soil material is steadily pushed down on to the flood plain from the tip to where *C. apenninorum* was found. Most specimens were found under large stones or wood but also in soil under leaf litter of sycamore and lime. A good range

of mainly disturbed ground species were recorded in this habitat:

*Arcitalitrus dorrieni* (Hunt) (Amphipoda); *Anamastigona pulchella* (Silvestri); *Choneiulus palmatus* (Němec), *Chordeuma proximum* Ribaut; *Cylindroiulus britannicus* (Verhoeff); *Cylindroiulus punctatus* (Leach); *Glomeris marginata* (Villers); *Leptoiulus belgicus* (Latzel); *Ommatoiulus sabulosus* (L.); *Ophiulus pilosus* (Newport); *Polydesmus asthenestatus* Pocock; *Tachypodoiulus niger* (Leach). Among the Isopoda *Porcellionides pruinosus* (Brandt) was common and this is one of the very few Irish sites at which it has recently been recorded. Also found were *Haplothalmus mengii* (Zaddach) and *H. danicus* Budde-Lund.

## SUMMARY

Despite repeated collections for this study, the colony at Dixon Park appears resilient and the same sort of numbers/density have been observed in all seasons. However, no specimens have so far been found more than 4-5 m from the tip edge. The species is therefore not expanding into neighbouring woodland or riverine marsh. Some continued reliance on the warmth and shelter provided by the tip is suggested.

## REFERENCES

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