

The identification of *Centromerita bicolor* (Blackwall, 1833) and *Centromerita concinna* (Thorell, 1875)

by Richard Gallon

Two species of *Centromerita* are known from Britain: *C. bicolor* (Blackwall, 1833) and *C. concinna* (Thorell, 1875). Although both species are widespread in a wide range of habitats and may occur together, *C. concinna* is much more restricted to old and undisturbed situations than *C. bicolor*, which often occurs in improved and disturbed grasslands and other places with areas of open ground, often in taller grass than *C. concinna*. They can be difficult to distinguish due to their superficial similarities.

It is helpful to consider both specimen size and leg spination, in addition to palp and epigyne morphology, particularly with female specimens.

Distinguishing males

Males of *C. bicolor* and *C. concinna* are readily distinguished by the examination of the paracymbium alone. In *C. bicolor* the proximal heel of the paracymbium has a darkened squared-off protrusion (Fig. 1), whereas in *C. concinna* this darkened protrusion is a simple spike (Fig. 2).

The lateral process of the paracymbium is also useful for identification: *C. bicolor* possesses a distinct darkened spike (Fig. 1), which is absent in *C. concinna* (Fig. 2). In dark specimens it may be helpful to view the paracymbium dorsally in order to see this feature.

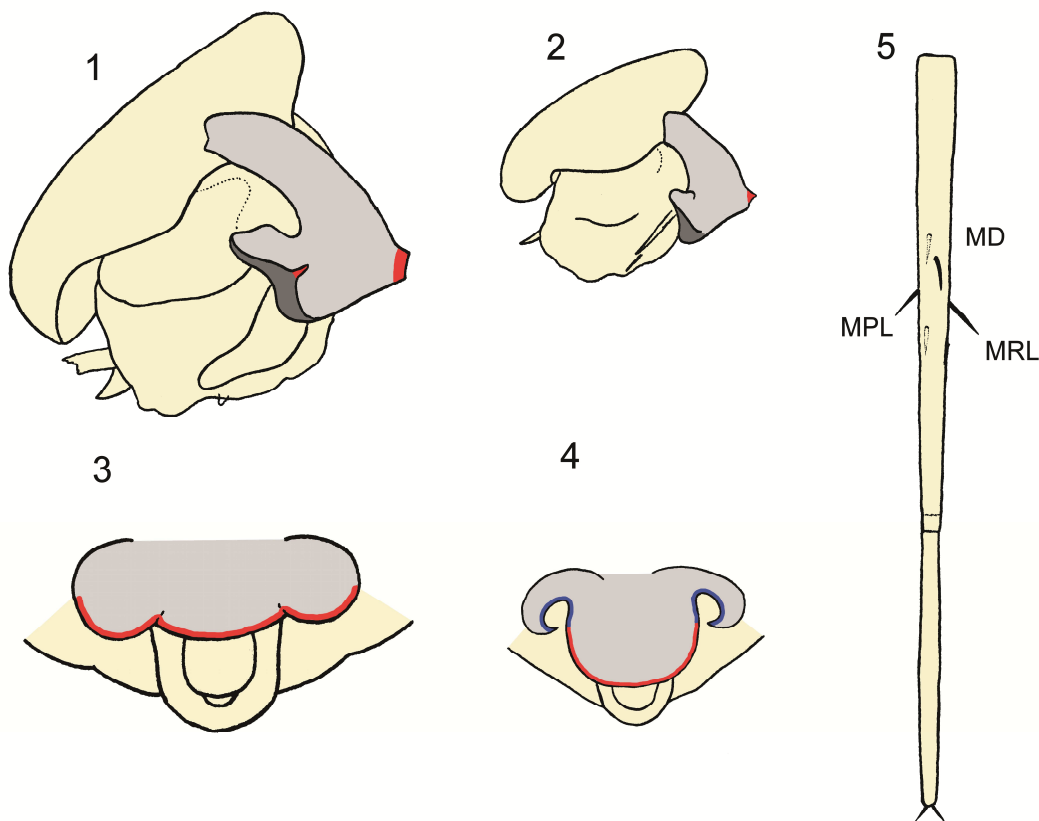
Distinguishing females

The epigyne of both species can be variable, but most specimens are readily distinguished by considering the shape of the epigynal fold margin. In *C. bicolor* this margin typically comprises three bulges (Fig. 3), but only a single bulge in *C. concinna* (Fig. 4). The curved lateral ends of this margin are also more distinct in *C. concinna* than in *C. bicolor*.

Spines on metatarsus IV

Both sexes of *Centromerita bicolor* typically possess midlateral (retrolateral and/or prolateral) spines on metatarsus IV (Fig. 5, Table 1), but these are absent in *C. concinna*. Ventral spines on metatarsus IV are often (although not always) present in both sexes of *C. bicolor*, but almost always absent in *C. concinna*. Both species usually possess a mid dorsal spine on metatarsus IV.

It is useful to check left and right legs IV to ascertain the presence or absence of spines, since broken-off spines are common. Care must also be taken when considering aberrant specimens with duplicated spines; the spine position is important rather than a total spine count in these examples.



Figures 1–5. *Centromerita* species. 1 *C. bicolor* left male palp with paracymbium (grey) showing squared-off protrusion and spike (both highlighted in red), retrolateral view; 2 *C. concinna* left male palp with paracymbium (grey) showing spike (red), retrolateral view; 3 *C. bicolor* epigyne showing tri-lobed fold margin (red), ventral view; 4 *C. concinna* epigyne showing mono-lobed fold margin (red) and lateral margins (blue), ventral view; 5 *Centromerita* left tarsus and metatarsus IV showing positions of leg spines (ventral spines stippled), dorsal view. Illustrations not to scale.

Specimen size

Male and female specimens of *Centromerita bicolor* are consistently larger than those of *C. concinna*. This is obvious in mixed samples (Fig. 6), but difficult to appreciate when only one species is present in a sample. Measuring the length of metatarsus IV will aid separation (Tables 1–2): between 1.05–1.37 mm for *C. bicolor* and between 0.69–1.00 mm for *C. concinna*.



Figure 6. *Centromerita* size comparison from pitfall material. *C. bicolor* top row, *C. concinna* below (males left, females right). © Richard Gallon.

	Males	Females
<i>bicolor</i>	1.05–1.37 (mean 1.25, n10)	1.08–1.26 (mean 1.16, n10)
<i>concinna</i>	0.73–1.00 (mean 0.85, n12)	0.69–0.77 (mean 0.73, n8)

Table 1. Metatarsus IV lengths (mm) of *Centromerita bicolor* and *C. concinna* (collected in Snowdonia).

Species	Sex	Mt IV length mm	MD spine	MRL spine	MPL spine	MV spine
<i>bicolor</i>	F	1.08	1	0	1	0
<i>bicolor</i>	F	1.08	1	0	1	1
<i>bicolor</i>	F	1.09	1	0	1	0
<i>bicolor</i>	F	1.13	1	1	1	1
<i>bicolor</i>	F	1.15	1	0	1	2
<i>bicolor</i>	F	1.18	0	0	0	0
<i>bicolor</i>	F	1.21	1	1	1	2
<i>bicolor</i>	F	1.23	1	0	0	1
<i>bicolor</i>	F	1.24	1	0	0	0
<i>bicolor</i>	F	1.26	1	0	0	1
<i>bicolor</i>	M	1.05	1	1	1	0
<i>bicolor</i>	M	1.21	1	1	1	2
<i>bicolor</i>	M	1.21	1	1	0	1
<i>bicolor</i>	M	1.23	1	1	0	1
<i>bicolor</i>	M	1.23	1	1	1	0
<i>bicolor</i>	M	1.23	1	1	1	0
<i>bicolor</i>	M	1.26	1	1	0	0
<i>bicolor</i>	M	1.26	1	1	1	1
<i>bicolor</i>	M	1.31	1	0	1	2
<i>bicolor</i>	M	1.36	1	1	0	1
<i>bicolor</i>	M	1.37	1	0	1	0
<i>concinna</i>	F	0.69	1	0	0	0
<i>concinna</i>	F	0.71	1	0	0	0
<i>concinna</i>	F	0.72	1	0	0	0
<i>concinna</i>	F	0.72	1	0	0	0
<i>concinna</i>	F	0.74	1	0	0	0
<i>concinna</i>	F	0.74	1	0	0	0
<i>concinna</i>	F	0.74	1	0	0	0
<i>concinna</i>	F	0.77	1	0	0	0
<i>concinna</i>	M	0.73	1	0	0	0
<i>concinna</i>	M	0.77	1	0	0	0
<i>concinna</i>	M	0.82	1	0	0	0
<i>concinna</i>	M	0.82	1	0	0	1
<i>concinna</i>	M	0.83	1	0	0	0
<i>concinna</i>	M	0.83	1	0	0	0
<i>concinna</i>	M	0.85	1	0	0	0
<i>concinna</i>	M	0.86	1	0	0	0
<i>concinna</i>	M	0.87	1	0	0	0
<i>concinna</i>	M	0.87	1	0	0	0
<i>concinna</i>	M	0.97	1	0	0	0
<i>concinna</i>	M	1.00	1	0	0	0

Table 2. *Centromerita* spp. measurements and metatarsus IV spination

(MT = metatarsus, MD = mid dorsal, MRL = mid retrolateral, MPL = mid prolateral, MV = mid ventral).

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