

ON BLUE GEOPHILOMORPH CENTIPEDES WITH COMMENTS ON OTHER UNUSUAL COLORATION

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In a note in the last Bulletin (2001), Paul Whitehead recorded a sky blue specimen of *Necrophloeophagus flavus* (De Geer) from Little Comberton, Worcestershire. He quoted comments of Dr J. M. Demange that the colour might be related to the luminous secretion containing hydrogen cyanide produced by some geophilomorphs (from the sternal glands) or might be the effect of infection (Whitehead, 2001).

Under the microscope Whitehead's specimen was an opalescent cerulean blue with a shimmer of cobalt blue highlights. The first eight segments were more normally coloured and from the ninth the segments were more tumid than usual.

Three specimens of *Geophilus osquidatum* Brölemann collected in Somerset appear to have shown a similar condition to that of the *N. flavus*. Details from my field notes are:

G. osquidatum in garden soil, Manor Mill Farm, Halse, Taunton, Somerset (Grid ref. ST142283), 5.v.1985. Two specimens.

1. More or less moribund, movement of anterior legs only. Anterior segments normal, posterior two-thirds white with duck-egg blue sheen.
2. First third active, posterior two-thirds swollen. Pale duck-egg blue. Some leg movement.

The specimens were kept in soil until 7.v.1985 when they were found to be dead and decomposed.

G. osquidatum in garden soil, Manor Mill Farm, 22.x.1998.

One specimen 33 mm, 59 pairs of legs, posterior two-thirds pale milky blue and swollen.

The condition of these specimens was clearly pathological and Dr Steve Hopkin, with whom I discussed this, suggested that it was due to an iridovirus. The distribution of the blue coloration suggests that it is the mid-gut that is involved. Presumably the blue specimens of *G. osquidatum* found in the Avon Gorge near Bristol in March 1984 by A. D. Barber and A. N. Keay (Whitehead, 2001) were similarly infected.

Other examples of unusual coloration in individual geophilomorphs are a bright red *Geophilus linearis* C. L. Koch collected near Woodmansterne, Surrey by Andy Keay in 1993 (Lewis and Keay, 1994) and a male *Geophilus electricus* (Linn.), length 46 mm, with 67 pairs of legs collected from beneath brick floor of old pigsty, Manor Mill Farm, Halse, Somerset on 4.xii.1997. In this the head capsule was brownish yellow, the anterior 20 segments orange yellow the trunk brownish (pompeian) red and the posterior eight segments light yellow. The red colour was due to the mid-gut. This specimen, however, appeared to be normal. Currently there is no explanation for the development of this red pigmentation.

Blower in a letter dated 8.xi.1980 wrote "I have repeatedly noted that the sternal gland secretion of very young stadia of several geophs is purple/violet." In the tropical geophilomorph genus *Ballophilus* the sternal glands are often pigmented. In *Ballophilus ramirezi* Perreira, Foddai & Minelli from Argentina the body is greenish brown but the ventral glands are bright purple (probably lithobioviolin). In some geophilomorphs for example *Henia vesuviana* (Newport) the pigmented fat body is seen as a dark band on either side of the heart but this and the pigmented sternal glands of *Ballophilus* appear to be the normal physiological condition in these species.

Little is known of the nature and function of coloration in centipedes or of the causes of colour variation and physiological and biochemical studies are much needed in this field.

REFERENCES

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- Whitehead, P. F. (2001) A blue example of *Necrophloeophagus flavus* (De Geer). *Bulletin of the British Myriapod and Isopod Group* **17**: 92.