

**BIOLOGICAL DATA ON BRITISH CENTIPEDES RECORDED IN HIS NOTEBOOK BY  
J. GORDON BLOWER BETWEEN 1948 AND 1975**

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**INTRODUCTION**

Amongst Gordon Blower's effects that were passed on to Helen Read is a hard covered University of Manchester notebook containing 231 pages of hand-written field and laboratory notes on British centipedes and millipedes covering the period from 16 June 1948 to 4 November 1964. An index of localities comprises pages 228-231.

In addition to a lot of locality data the notebook contains a number of biological observations which, as far as I am aware, have not been published. Information has previously been extracted as indicated by an entry on p. 227, which reads: 'note entered 2 May 1988. The cards which Colin's [Colin Fairhurst] student abstracted from this book include references to p. 224 - so were probably made after 9.75'. Much of the Yorkshire data appears in Blower's (1955) seminal paper on Yorkshire centipedes. In some cases he omitted biological data and where this was the case I have included the Yorkshire entries.

The notes that I consider to be of biological interest are given here, as far as possible as written, under Lithobiomorpha and Geophilomorpha with page number and date. The entries under each order are further listed under Habitat, Morphology, Colour etc., so some entries appear twice. Each tube in Blower's collection appears to have been numbered and these numbers (A1-A1000, C19-C28, M1-M7 and D1-528) are written on the right hand side of each page of the notebook. They are not quoted here. Blower gave the number of pairs of legs immediately after the sex of the specimens e.g. *Geophilus electricus* ♂ 69.

My additional comments and explanatory remarks are here placed in square brackets. For lithobiomorphs I have used imm to denote an immature and larv to indicate a larval individual.

The nomenclature used by Blower has not been changed in the transcript. Current nomenclature is given by Barber (2003) and is as follows:

*Lithobius duboscqui* = *L. microps* Meinert

*Lithobius lapidicola* = *L. borealis* Meinert

*Lithobius aulacopus* = *L. macilentus* L. Koch

*Lamyctes fulvicornis* = *L. immarginata* (Newport)

*Scolioplanes acuminatus* = *Strigamia acuminata* (Leach)

*Necrophloeophagus longicornis* = *N. flavus* (De Geer)

Specimens assigned by Blower to *Geophilus carpophagus* may have been either that species, or the recently described *G. easoni* Arthur et al (Arthur et al 2000). The species are separable on the number of leg-bearing segments (*G. carpophagus* ♂51-55, ♀53-57. *G. easoni* ♂47-49, ♀49-51) and as Blower frequently gave leg numbers in his notes it is possible to assign some of his '*G. carpophagus*' to the correct species. All those for which leg numbers were given are, in fact, *G. easoni* (see Records of *Geophilus easoni* below). Leg numbers were not given for the '*Geophilus carpophagus*' recorded with young so may be either species (see Brooding below). The records from the Wirral and the hills of the Lake District refer in all probability, however, to *G. easoni*.

## LITHOBIOMORPHA

### Habitat

- p. 3. 28.8.48 Cheadle Hulme [Cheshire]. Dr and Mrs Peel's garden.  
*Lithobius Duboscqui* Brolemann 1896. Beneath blackcurrant bushes 6 inches to one foot beneath surface of soil.
- p. 9. -.8.49 (4.49). Lundy Island. From Mr Gilbert.  
Mr Gilbert noticed that *L. forficatus* was rare on the island, the common form being *L. variegatus*. One specimen only was collected and this from Millcoombe [Farm] which is the only inhabited part of the island. It seems that *L. forficatus* replaces *L. variegatus* in regions extensively affected by man. Cf. Coterrill [?] Clough, [excursion with Altringham Field Society] a reserve where *L. variegatus* is still dominant.  
This conception cuts across my original idea that *L. variegatus* occurred at higher altitudes or under moorland conditions. NB Brade-Birks (Oct 1919) *Lancs. & Ches. Nat. L. variegatus* "——the idea that this is a moorland species is gradually being dispelled by records of its occurrence in other situations." [Blower (1955) wrote of *L. forficatus* 'frequently occurs in habitats associated with man's activity'].
- p. 76. 2.9.52. North Riding [Yorkshire], Oulsten Bank Wood on right hand side of.  
*Lithobius* common in soil – of the few captured: *L. crassipes* 2♂, 1♂. *L. curtipes* 1♂.  
Mixed deciduous wood just thro' Olstead (0.5 mile).  
Lithobiids very common in soil. Only two captured. *L. curtipes* 1♂, *L. crassipes* 1♂. [Blower (1955) noted that *L. crassipes* was perhaps the most typical *Lithobius* in rich litter but did not mention soil.]
- p. 95. 15.8.52. Suckley, Worcestershire. Under logs and stones in garden. *Lithobius variegatus* [and] *Lithobius forficatus* together. One imm just moult 15 [presumably *L. variegatus*].
- p. 140. June 1957. Lake District, Far Sawrey.  
*Lithobius aulacopus* 12 ♀♀. 1 imm ♀, 2 larv 12. 3 damaged specimens (2 ♀♀ and one without anal legs).  
*Lithobius crassipes* 7 ♀♀, 1♂.  
*Lithobius lapidicola* 1♂.  
The above three lithobiids were found in the soil a few feet up into Station Scar Wood from the roadside – All together! Duration of collection 20 mins [includes 9 millipedes].
- p. 144. 26.7.57. Chee Dale, Derbyshire. In Mole's Hills in clearing. *Lithobius crassipes*. 1 imm newly moulted.

### Morphology

- p. 48. 9.4.51. Crayke Wood, N. Riding [Yorks.].  
*Lithobius sp.* Like *forficatus* in key otherwise *L. piceus britannicus* but only the mere vestige of an accessory claw on fifteenth leg. Coxal pores 4.4.3. Teeth on coxost. of forceps 4+5. About the same size and proportions as *L. crassipes*.  
Another *Lithobius sp.* as above.  
[It is clear that Blower had collected two specimens that he could not assign to a species but I have no idea how significant these observations are. *Lithobius piceus* has a distinct accessory claw on leg 15; in *L. forficatus* it is vestigial (see Eason 1964). Blower (1955) notes that *Lithobius piceus britannicus* has been recorded only on one occasion from Northumberland and Durham by Bagnall (1913), 'a fairly large animal with bright yellow tibiae.' He makes no mention of the Crayke Wood specimens. Their identity remains uncertain].

- p. 120 [No date but probably 4-11 August 54]. Malham [Yorks.]. Coll. Butler. Tarn House Plantation, under bark.  
*L. lapidicola* 2♂, 2imm. Note imm do not have supernumerary spine but [?] 9th tergite still not produced. Curious variegation.
- p. 140. June 1957. Far Sawrey, Lake District.  
*Lithobius aulacopus* 12 ♀♀, 1 imm ♀, 2 larv 12, 1 larv 10. 3 damaged specimens (2♀♀ and one without anal legs) inner tooth further forwards, ultimate antennal article > 2 pen [ultimate]. Tenth tergite with angular post. lateral angles. All these present in this stadium quite clearly. NB No males. [Tony Barber confirms that no males have been found in UK].
- p. 159. 18.3.51. Isle of Man, Port Erin District.  
*Lithobius lapidicola*. Supplementary spine on left side only.
- p. 160. Under stones adjacent to ploughed field on road to Port St Mary.  
*Lithobius melanops* ♀. No 15 DpF and other three characters [?] OK also 3 imm ♂♂ about half adult length but with 15 [pairs of legs] diagnosed by 9,11 and 13 and mx teeth.
- p. 199. Rothamsted. Coll. Madge (letter dated 5.9.62).  
 38 *Lithobius duboscqui*: 14 post larval (one has extra mxp tooth externally on right, one has an extra ocellus ant. to usual three RHS only). 8 larva II, 6 larva III and 10 larva 4 (the last legs, whatever the larva appear to have telopodal glands).

## Colour

- p. 72. 10.1.51. Anglesey and Caernarvon. Gilbert. Newborough.  
*L. melanops* ♀. Last tergum and head more amber than rest, light coloured, particularly sternites.
- p. 89. 12-19.9.1953. Caernarvon.. P. M. Butler. Top of Clogwyn Mawr 1500 feet.  
*L. lapidicola*. Note dark colour and variegation. This applies to all this species from this locality.
- p. 120 [No date but probably 4-11 August 54]. Malham [Yorks.]. Coll. Butler. Tarn House Plantation, under bark.  
*L. lapidicola* 2♂♂, 2imm. Curious variegation.
- p.146. 11.8.57. Yorks. N. Riding. Under stones by Gliding post[?], Whitehorse. With nests of *Formica lehmani*.  
*Lithobius crassipes* 2♂♂, 1♀, 2imm 15. Markings very striking – this didn't look like ordinary *crassipes* at first sight.

## Food

- p. 75. 22.8.52. Marple [Cheshire]. Torchlight survey 10.30pm in Ernocroft garden.  
 Two *Lithobius forficatus* seen feeding on slugs.
- p.197. 1960. Far Sawrey. Copied from loose notes Ap[ril] 1970.  
*L. variegatus* seen feeding 4 feet up tree on a lacewing, big and green.

## GEOPHILOMORPHA

### Habitat

- p. 3. 9.8.48. Appleby, Easingwold [Yorks.].  
*Haplophilus subterraneus* Leach. Garden in soil 1-2 feet down.
- p. 4. 15.9.48. Wythenshawe Park [Cheshire].  
*Haplophilus subterraneus*. Several specimens occupying large cavity within a potato. No evidence that these are responsible for the damage.

- p. 50. 31.12.1950. North Riding, Woodland at Rievaux. Foot of snow on ground.  
*Brachygeophilus truncorum*. In soil after removing snow – one specimen quite active!!
- p. 56. August 1951. North Riding [no locality]  
*Haplophilus subterraneus* very numerous around the roots of potato plants. [Blower (1955) gave Easingwold, in rotten potato tuber 6.51 and in potato patch 2.8.51].
- p.104. 21.1.51. Derby Road Fallowfield, Manchester. Walking on footpath.  
*Haplophilus subterraneus* nicely extended.

## Morphology

- p. 53. May 1951. Newhaven, Derbyshire. Dr Butler.  
*Geophilus electricus* (Linné) ♂65, ♂69, ♀69. ∞∞ much thinner than ♂♂.
- p. 119. ND prob[ably] 10.54. Malham, Yorks. Coll. Butler.  
*G. insculptus* 1♀. Note clypeus (prelabial zone curved round ventrally so that origin of antennae ventrally) [small sketch].
- p.160.  
Isle of Man. Port Erin District.  
23.3.51. Just above splash zone (Spaldrick). At Sea Campion roots in coarse sand.  
*Geophilus electricus* ♀ 69 (Brolemann gives carpophagus pit approximately from 8-20, this specimen only shows the structure clearly from (12)(13) 14-20). [Eason (1964) gives carpophagus pit from S5 or 6.]  
23.3.51. Under stones adjacent to ploughed field on road to Port St Mary.  
*Geophilus insculptus* ♀ 51, imm ♂♂ 47, 49. Carpophagus pit in ♀ from (3)4-20. In immature ♂♂ extends only from (6)7-16.
- p. 224. 20.5.60. Buckingham Palace Garden. Under low bush on ground.  
*Geophilus osquidatum* ♂ 55, 23-24mm. 20-27 crenulations [on poison claw], 3+3 coxal pores. Anal claws very small. Carpophagus pit (?) only just visible. [This was the most easterly British record. It has now been recorded from Maidstone, Kent (Barber, 2001).]

## Colour

- p. 3. 9.8.48. Wilmslow [Cheshire]. Miss Mackel's [?] garden.  
*Geophilus insculptus* Attems. Rear two thirds of gut filled with olive green material.  
20.8.48. Poynton [Cheshire] Mr Ashby's garden. *Necrophloeophagus longicornis* (Leach 1814). One specimen with salmon pink contents of gut.  
28.8.48. Cheadle Hulme [Cheshire] Dr & Mrs Peel's garden.  
*Geophilus insculptus* 1895. Olive green guts.
- p. 53. May 1951. Newhaven, Derbyshire. Dr Butler.  
*Scolioplanes acuminatus* ♂ 39, ♀41. ♂ large red, ♀ smaller and yellow.
- p.112. 31.8.54. Low Wood (nr. Witherslack), Grange District [Cumbria]. Oak..  
*B. truncorum* 1♂ with 37, light yellow. 1♀ with 39, rich red brown!?
- p. 183. 11.4.61. Gower, Glamorgan. Caswell Bay, Hollywood (Bishop's Wood).  
*Geophilus osquidatum* ♂ 19.5 mm 55, ♀ 24.5 mm 59, ♀ 21.2 mm 59. Amber coloured for first twelve or so (corresponding to well-developed pits thence very pale "milky" cream (due to presence of eggs?). The light cream quite diagnostic.

## Habitus

- p. 174. 6.8.58. Achatenny Under stones and at grass roots on sheep pasture close to shore, sandy soil.  
*Schendyla nemorensis* ♂ 19mm (39), ♂ 12.5 (39), ♀ 22.5 (41), ♀ 16 (41).  
Cream coloured (except for head and anal legs) usually found in semi extended condition, cf. *Brachygeophilus*.  
*Brachygeophilus truncorum* ♂ 14mm (37), ♂ 13.5 (37), ♂ 10 (37), ♀ 14.5 (39). Just going to moult ♀ 8.5 (39), ♀ 8 (39). Also 9 newly hatched specimens.  
Found in typical “bunched-up” attitude cf. *Schendyla*. More yellow amber – no doubt a general impression given by the more heavily sclerotised ant. and post. sternite edges in region of the carpophagus pits.  
Note the constancy of segment number in above two species.

## Brooding

- p.100. Burton in Wirral [Cheshire]  
8/52. *Haplophilus subterraneus* several with young  
23.7.51 ‘*G. carpophagus*’ Paddock Wood 1 with young. 8/52.Fiddlestone Wood 1 with young  
p. 114 1.9.54. Grange District [Cumbria]. Ronsay, near shore.  
‘*G. carpophagus*’ 1 ♀ with brood just hatched under stones. Young have scattered pigment spots.  
p. 174. 6.8.58. Achatenny. Under stones and at grass roots on sheep pasture close to shore, sandy soil.  
*Brachygeophilus truncorum*, 9 newly hatched specimens.  
p. 176. 8.58 In pinewood near Raskelf, North Riding. Under bark of felled pine in sandy soil.  
*Brachygeophilus truncorum*, 3 newly hatched.  
p. 195. 6 or 7.7.61. Lake District, Grizedale under stone.  
‘*Geophilus carpophagus*’, ♀ with 21 newly hatched and egg shells.  
23.7.61. Grizedale.  
‘*G. carpophagus*’, several – each with family group. One under log, another under a stone deeply imbedded. One family pickled more or less intact, 21 individuals - egg shells still attached.

## Food

- p. 3. 9.8.48. Wilmslow [Cheshire] Miss Mackel’s [?] garden.  
*Geophilus insculptus* Attems. Rear two thirds of gut filled with olive green material  
20.8.48. Poynton [Cheshire] Mr Ashby’s garden. *Necrophloeophagus longicornis* (Leach 1814). One specimen with salmon pink contents of gut  
28.8.48. Cheadle Hulme [Cheshire] Dr & Mrs Peel’s garden.  
*Geophilus insculptus* Attems 1895. Olive green guts.  
p. 32. 1.10.50. Cotterill Clough. In wood nearby Ringway gate.  
*Brachygeophilus truncorum*. Browsing over dew-spangled moss on the upper and sides of a fallen tree trunk.  
[See also records of association between *H. subterraneus* and potatoes under Habitat, which may relate to feeding. Also colour of gut of *G. insculptus* under Colour.]

## Records of *Geophilus easoni*

- p. 159. 18.3.57. Isle of Man Port Erin District.  
‘*Geophilus carpophagus*’ 3 ♀♀ 51, 51, 51. 2 ♂♂ 47, 47.  
p. 170. 18.6.58. Lake District. Oakhill (Brantwood) Coniston.  
‘*Geophilus carpophagus*’ 1 ♂ 49.

- p. 175. 6.8.58. Achatenny. [Highland] Under stones and at grass roots on sheep pasture close to shore Sandy soil.  
 ‘*Geophilus carpophagus*’ ♂51 (30mm) C[oxal] p[ores] 9+11. Imm ♂51 (23mm) C.P. 3+2.  
 Ardtoe. [Highland] Under sea pink at roots on rocks on shore.  
 ‘*G. carpophagus*’, ♂47.
- p. 176. 8.58. North Riding. In pinewood near Raskelf. Under bark of felled pine in sandy soil.  
 ‘*Geophilus carpophagus*’ ♂49 (newly moulted), ♂47.
- p. 226. 16.8.62 Thorpness, Suffolk. Base of marram. P.D.G.  
 ‘*Geophilus carpophagus*’ ♂♂ 47,47. ♂♂ 47, 49, 49, 49 + 1M ♂ 51.

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