

BRITISH MYRIAPOD GROUP

Newsletter 1983

INTRODUCTION

Let us hope that the enthusiasm with which we all looked forward to an early revival of a BMG bulletin/newsletter, so much in evidence at Plymouth last year, has not totally evaporated. I am afraid that all my plans for a rapid turnaround after the manuscript deadline (met, incidentally, by all contributors) unfortunately went completely by the board due to a series of totally unpredicted, and hopefully not to be repeated, circumstances.

This edition is neither as elaborate as I would have liked, nor does it contain as great a variety of subject matter; nevertheless, it is a start. I would be very grateful if you will give some serious thought to how you would or would not like the newsletter/bulletin to develop, its usefulness to you as a member of the Group and the type of material you would like it to contain. Let me have your comments as soon as possible.

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March 1983

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BRITISH MYRIAPOD GROUP MEETING - PLYMOUTH, 5-8 APRIL 1982

Thanks entirely to superb organisation by Ron Daniel and Tony Barber we were ensured, even before arrival, of a thoroughly enjoyable, well organised and instructive time. About a dozen of us engaged in informal discussions, laboratory sessions and some very pleasant and rewarding field work in Devon and Cornwall. As will be seen from the accompanying lists, we found many unusual and interesting centipedes and millipedes.

The opportunity to meet and chat together was perhaps one of the most valuable features of the meeting. It was understandable that we were unanimous in asking for a similar gathering to be arranged in 1983. However, Ron and Tony set a standard that may well be difficult for future organisers to achieve.

British Myriapod Group - Plymouth, 5-8 April 1982

CENTIPEDES collected by J G Blower; A D Barber; A N Keay; J E G Lewis

Species	Plymbridge Wds Weir Qry 5259	Antony 3954	Antony 3855	Dowderry 3153	Hessenford Qry 3056	Hessenford Qry 3057	Lydcott Woods 2958	Lydcott Woods 3058	Shaugh Bridge W. of River 5363	Shaugh Bridge N.E. of River 5363	Burrator Reservoir 5669	Widlake Wood
<i>Lithobius variegatus</i>	X	X	X		X		X	X	X	X	X	
<i>Lithobius forficatus</i>								X	X		X	
<i>Lithobius melanops</i>	X	X		X	X				X		X	
<i>Lithobius borealis</i>		X							X	X	X	
<i>Lithobius pilicornis</i>				X								
<i>Lithobius microps</i>		X							X		X	
<i>Cryptops hortensis</i>		X		X	X		X		X		X	
<i>Cryptops parisi</i>	X											
<i>Haplophilus subterraneus</i>	X	X	X	X	X		X		X	X	X	X
<i>Schendyla nemorensis</i>	X	X					X		X			
<i>Chaetechelyne montana</i>				X ¹								
<i>Strigamia crassipes</i>					X		X		X			
<i>Geophilus carpophagus</i>							X			X	X	
<i>Geophilus oscuidatum</i>											X ²	
<i>Geophilus fucorum</i>			X ¹									
<i>Brachygeophilus truncorum</i>		X			X			X				
	100 km square 20 (SX)											

¹ADB

²ANK

British Myriapod Group - Plymouth, 5-8 April 1982

MILLIPEDES collected by A D Barber; J Gordon Blower; J E G Lewis

Species	Plymbridge Wds Weir Qry 5259	Antony 3954	Antony 3854	Hessenford Qry 3056	Hessenford Qry 3057	Lycott Woods 2958	Lycott Woods 3058	Shaugh Bridge W. of River 5363	Shaugh Bridge N.E. of River 5363	Burrator Resvr 5669	Widlake Wood
<i>Glomeris marginata</i>	X	X		X			X	X	X		
<i>Melagona gallica</i>	X	X						X	X	X	X
<i>Chordeuma sylvestre</i>							X				
<i>Brachydesmus superus</i>	X	X		X	X			X	X		X
<i>Polydesmus angustus</i>	X	X		X			X	X	X	X	X
<i>Polydesmus denticulatus</i>	X							X	X	X	
<i>Nemastoma varicorne</i>								X			
<i>Proteroiulus fuscus</i>								X		X	
<i>Julus scandinavus</i>		X	X	X	X	X		X	X	X	X
<i>Ophiulus pilosus</i>	X	X	X	X	X	X	X	X	X		X
<i>Leptoiulus kervillei</i>	X	X			X			X			X
<i>Cylindroiulus punctatus</i>	X	X	X		X	X		X	X	X	X
<i>Ommatoiulus sabulosus</i>				X	X						
<i>Tachypodoiulus niger</i>	X	X		X		X	X	X			X
	100 km square 20 (SX)										

ON *LITHOBIUS VARIEGATUS* LEACH - E H Eason

(This is a summarised version of a paper being prepared by E H Eason & A Serra)

The common British centipede *Lithobius variegatus*, which was originally described from Devonshire (Leach, 1814), has hitherto been regarded as endemic in the British Isles. British specimens are 16-24 mm long with small posterior projections on T7, the glandular pores on the prosternum and the 14th and 15th legs very sparse or absent, usually 6, 5, 5, 5 and never more than 7, 6, 6, 6 coxal pores, the 15th legs about half body-length and the claw of the female gonopod always with a medial denticle and often with a small lateral denticle. The characteristic colour to which the species owes its name consists of dark violet marbling on the head and tergites and alternate pale and dark bands on the legs; it was first adequately described by Walker (1842) and makes the species easy to recognise in the field, but soon fades in preserved specimens.

Lithobius rubriceps was described by Newport (1845) from southern Spain with the remark that it very much resembles *L. variegatus* from Ireland but is much larger. Many specimens of *L. rubriceps* I have seen from various parts of the Iberian Peninsula are over 30 mm long, without posterior projections on T7, with dense concentrations of glandular pores on the prosternum and posterior legs, coxal pores often in excess of 7, 6, 6, 6, the 15th legs about a third of body-length, a simple claw on the female gonopod and a uniform dark brown colour. Though identical with *L. variegatus* in other respects, it never occurred to me at the time that the two forms might be conspecific.

About four years ago Dr A Serra of Barcelona University sent me four adults of each sex taken in July 1975 in north-west Spain which he had identified as *L. variegatus* and which only differ from the British form in being 20-27 mm long with 7, 6, 6, 6; 8, 7, 7, 7; 9, 8, 8, 8 or 10, 9, 9, 9 coxal pores. Their colour is pale brown as in the British form, and Dr Serra assured me that variegated markings had been seen on some of the specimens during life. Dr H Enghoff of Copenhagen University has sent me similar specimens he found in May 1981 in northern Portugal. It thus seemed that both *rubriceps* and *variegatus* occur in the Iberian Peninsula and Serra (1980) described them separately, differentiating them by means of the shape of T7 and the claw of the female gonopod, and the length of the 15th legs.

But Dr Serra and I have more recently examined numerous specimens of *variegatus/rubriceps* from various parts of the Peninsula and find that the characters separating the two forms are so variable and show such lack of correlation with each other as to conclude that only one species is involved. On the other hand, size and the number of coxal pores in adults tends to be greater in examples from the Peninsula than those from Britain, and in the late summer of 1982 I collected ten adults in the neighbourhood of Clew Bay, Co. Mayo on the west coast of Ireland which are intermediate in these respects, being 24-30 mm long with coxal pores numbering 7, 6, 6, 5; 7, 6, 6, 6; 7, 7, 7, 7 or 8, 7, 7, 7. In other characters, including conspicuous variegated marking, these specimens resemble the British form of the species and are therefore very close to those from north-west Spain.

The variegated markings of this species are due to the pigment lithobiocyanin which underlies the epidermis (Lewis, 1981). It seems that the markings are only visible in the northern examples which have a fairly pale transparent epidermis but not in those from further south in which the epidermis is darker and much less transparent. In north-west Spain pale and dark specimens are intermingled and it is unlikely that two distinct forms will be clearly separable on the basis of colour. Furthermore, colour in Lithobiidae seems usually to be environmental rather than genetic in origin.

The general distribution of this species, which is more widely known as *Lithobius insignis* Meinert, is southern Italy, Sicily, Tunisia and Morocco as well as the Peninsula and the British Isles, so that in the absence of any records from western Europe north of the Pyrenees it belongs to the Lusitanian fauna in the sense in which Scharff (1907) used this term. There have been many theories put forward to explain the distribution of this fauna, but in the case of *L. variegatus* climate is obviously an important factor. There are very few English records from east of the 38°F (3.33°C) winter isotherm and none from a similar area in eastern Scotland (Eason, 1964). Douglas Richardson has recently sent me an up to date map of the records of *variegatus* from Yorkshire confirming this limitation of range which suggests an intolerance of very cold winters. On the west coast of Ireland the winters are milder than in Britain and here the species grows larger, acquires more coxal pores and therefore probably reaches a further post-larval stadium in addition to those found in Britain: in the Peninsula this tendency is carried still further. Andersson (1976) discussed a similar phenomenon in *Lithobius forficatus* in which the number of the post-larval stadium is indicated fairly accurately by the number of pores on the 13th coxa.

But our knowledge of the variation and distribution of *L. variegatus* is still very incomplete and a number of questions remain to be answered. Although there are records from most Irish counties they are unaccompanied by descriptions: are specimens from the east coast of Ireland with its relatively cold winters closer to those from Britain than those from Co. Mayo? Does the frequency of English adults with six pores on the 13th coxa decrease as we approach the 38°F winter isotherm? Do all specimens from the western Mediterranean region resemble those from the Peninsula? Is *L. variegatus* really absent from western Europe north of the Pyrenees? Bröleman (1930) suggested the possibility of its occurrence in Brittany and should it be found here and along the Atlantic coast of southern France it would not qualify as a Lusitanian species and climate alone would be adequate to explain its distribution. Finally, few preserved specimens are accompanied by a note as to their markings during life and there is no certainty that the variegated markings are always present in British specimens.

Whatever the answers to these questions, there is no doubt that *L. variegatus* has now lost its status as an endemic British species and is much less of a puzzle to zoogeographers than it was!

References

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AN INTRODUCTION TO CENTIPEDE IDENTIFICATION - A D Barber

Only with experience is it possible to identify British centipedes in the field, and then only in a limited number of cases. A low power microscope is necessary for precise identification, and even then a few species can be quite difficult.

The standard work is E H Eason "Centipedes of the British Isles", 1964 which, whilst out of print, is fairly widespread in libraries. There are three species not included in this work: *Chalandea pinguis* (known only from a limited area of North Devon); *Brachyschendyla dentata* (a small soil type found on only a few occasions; may turn up in urban localities), and *Lithobius tricuspis* (Central South Devon).

All centipedes that are likely to be found fit into one of the three orders on the basis of the number of pairs of legs:

- | | |
|-------------------|---|
| Lithobiomorpha | - 15 pairs (the rare house centipede <i>Scutigera</i> also) |
| Scolopendromorpha | - 21 pairs |
| Geophilomorpha | - 35-101 pairs. |

Geophilomorpha

Useful characteristics to look for are:

- (a) number of pairs of legs
- (b) presence or absence of claws on last legs
- (c) the coxal pore arrangement for the last pair of legs
 - (i) whether dorsal and ventral or ventral only
 - (ii) whether over the whole surface of the coxa, marginal, or marginal with one isolated pore
 - (iii) number of pores (NB some juveniles have small numbers)
 - (iv) in pits (one case only - *Clinopodes linearis*)
- (d) shape of antennal segments; elongate or short and squat.

- (e) presence of a carpophagus structure (most species of *Geophilus*)
- (f) habitat; especially if maritime
- (g) colour - a useful guide in some cases.

Care is needed when examining some juvenile geophilids where the number of coxal pores may be 0 (*G. carpophagus*) 1 or 2, the latter especially leading to confusion e.g. with *G. truncorum*, unless trunk segments are counted. (See Table 1 over).

SCOLOPENDROMORPHA

The only genus in Britain (apart from the odd tropical *Scolopendra* coming in with bananas) is *Cryptops*, of which there are three species. All very large specimens, especially from urban localities or in south-west England should be carefully checked; mistakes in identification can easily be made.

C. anomalans (= *C. savignyi*): note the cruciform suture on T1 and the longitudinal sutures on the head (Eason Fig. 241). Known from a number of home counties localities urban. Distinctive species.

C. hortensis: the common type of much of England, usually relatively small animals. Synanthropic in the North.

C. parisi: much more easily confused with *C. hortensis* than is *C. anomalans*. All very large animals are immediately suspect. The combs on the back legs tend to have larger numbers of teeth and to be "tighter" on the tibia. The arrangement of setae amongst the pores on the coxae may also be useful. In the last analysis the labrum has to be looked at. Not always easy with smaller specimens which have overlapping numbers of tibial and tarsal teeth with *C. hortensis*.

If you live in the North of England or Scotland, you won't probably have to worry.

LITHOBIOMORPHA

There are only two genera in Britain, *Lithobius* and *Lamyctes*; the latter is a relatively small animal, often dark or greyish in colour. Close examination shows it to have only one ocellus on each side of the head, no spinulation, a triple claw on the 15th leg and always female.

Characters to look for in identification of lithobids:

1. Antennal segments.
2. Ocelli and their arrangement.
3. Teeth on forcipular coxosternite and the shape of their area.
4. Posterior projections on tergites T7; T9: T11.
5. Number of female gonopod spurs - shape sometimes helpful (*L. microps*)
6. Claw of last legs.
7. The spine VaC on the coxae of the 15th legs if it can be found.
8. Colour: *L. calcaratus* and *L. muticus* tend to be dark animals, as does *L. fulvicornis* sometimes. *L. variegatus* is easy in the field usually - *L. melanops* tending to be the only species even slightly like it; however colours change in alcohol.

TABLE 1: SOME GEOPHILOMORPH CHARACTERISTICS

Species	Pairs of legs (trunk segs)	Coxal pores		Carpophagus structure	Claw on last leg	Colour
		number/side	position			
* <i>H. subterraneus</i>	77-83	α	all over d + v	-	-	Yellowish
<i>N. souletina</i>	93-101	α	" "	-	-	Yellowish
<i>D. carniolensis</i>	43	α	" "	-	-	Reddish-yellow
† <i>H. submarina</i>	45-53	2	marginal, v	-	-	Reddish-brown
* <i>S. nemorensis</i>	37-43	2	" "	-	-	Pale yellow reddish
<i>S. peyerimhoffi</i>	39-49	2	" "	-	-	" "
<i>S. sonalis</i>	39-49	2	" "	-	-	" "
<i>B. monoeci</i>	51-57	2	" "	-	-	" "
<i>B. dentata</i>	39	2	" "	-	-	" "
<i>C. vesuviana</i>	61-87	1 + several	" "	-	♂-: 9/	Greenish-grey + brown
<i>C. montana</i>	about 55	1 + several	" "	-	✓	Pale yellowish
* <i>S. crassipes</i>	49-53	α (15-30)	all over, v	-	✓	Reddish-brown
* <i>S. acuminata</i>	37-41	10-15	" "	-	✓	" "
† <i>S. maritima</i>	47-51	10-15	" "	-	✓	" "
<i>P. ferrugineum</i>	43-45	α	all over, d + v	-	✓	Reddish yellow
<i>C. linearis</i>	63-79	open into pits	ventrally	-	✓	Yellow
* <i>G. carpophagus</i>	45-51+	6-12	marginal, v	✓	✓	Reddish brown
* <i>G. electricus</i>	65-73	4-6d: 6-12v	marginal, d + v	✓	✓	Yellow
<i>G. oscuidatum</i>	53-63	3-4	marginal, v	✓	✓	Yellowish
† <i>G. fucorum</i>	51-57	4	" "	✓	✓	" "
<i>G. pusillifrater</i>	41-43	2 + 1	" "	-	✓	" "
* <i>G. insculptus</i>	45-53	1 + 4-7	1 isolated, v	✓	✓	" "
* <i>N. longicornis</i>	49-57	6-10	marginal, v	-	✓	" "
* <i>B. truncorum</i>	37-41	2	" "	-	✓	" "
<i>C. pinguis</i>	35-37	1 + 6-10	1 isolated, v	-	✓	Pale

* widespread types; † maritime species exclusively; d = dorsal; v = ventral; - = none; ✓ = present

TABLE 2: SOME LITHIOMORPH CHARACTERISTICS

Species	Ant. segs.	Ocelli (adult)	Forc. Cox. Teeth	Projections on tergites		♀ Gon. spurs	Claw of 15th leg	VaC 15	
				T7	T9-T11				
<i>L. variegatus</i>	35-46	13-18	6 + 6-7 + 7	✓	✓	2	1	-	variegated
<i>L. forficatus</i>	35-43	20-30	5 + 5-6 + 7	✓	✓	2	1	-	
<i>L. piceus</i>	49-54	11-16	2 + 3-5 + 5	✓	✓	3-4	2	✓	
<i>L. melanops</i>	32-42	10-13	2 + 2	✓	✓	2	2	-	
<i>L. tricuspis</i>	40-45	10-12	2 + 2	✓	✓	3	2	some	S. Devon
<i>L. borealis</i> (<i>Lapidicola</i>)	28-39	8-12	2 + 2	✓	✓	2	2	-	accessory spine on 15th leg
<i>L. macilentus</i> (<i>aulacopus</i>)	39-45	7-9	2 + 2	✓	✓	2	2	-	always ♀
<i>L. muticus</i>	34-43	10-14	2 + 2-3 + 3			2-3	2	-	♂ head shape
<i>L. nigrifrons</i>	36-43	14-18	2 + 2	✓	✓	2	1	-	
<i>L. erythrocephalus</i>	28-33	10-14	2 + 2			2	2	✓	
<i>L. agilis</i>	31-35	7-11	2 + 2	✓	✓	2	2	✓	status uncertain
<i>L. pilicornis</i>	29-31	20-40	3 + 4-5 + 6		✓	2	1	✓	south and west
<i>L. calcaratus</i>	39-50	7-9	2 + 2			2	1	-	♂ 15th legs
<i>L. crassipes</i>	18-21	9-13	2 + 2-3 + 3			2	1	-	
<i>L. curtipes</i>	19-20	6-9	2 + 2			2	1	-	
<i>L. microps</i> (<i>chusqui</i>)	23-27	3-(4)	2 + 2			2	2 (1)	-	
<i>L. fulvicornis</i>	25	1	3 + 3			2	3		no spines

✓ = Yes

- = None

9. Sex - some species are only known as females (*L. macilentus*, *L. fulvicornis*).
10. Behaviour: *L. curtipes* and *L. microps* have a tendency to curl up as a defence response. *L. calcaratus* seems to disappear with greater rapidity even than the other lithobids of similar size: *L. pilicornis* holds its very large 15th legs off the ground when it runs.
11. Size: large lithobids are *L. forficatus*, *L. variegatus*, *L. piceus* and *L. pilicornis* which is probably the largest of all. *L. microps* is always small, whilst the others are generally small to medium sized animals.

Lithobids can be difficult to identify, especially juveniles. (See Table 2 over).

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VICE-COUNTY DISTRIBUTION: CENTIPEDES - SCOTLAND AND IRELAND - A D Barber

Since the last set of vice-county records were sent out more than five years ago, considerable numbers of new records have been made. The accompanying list includes the Spring 1982 status situation for Scotland and Ireland, two countries with large numbers of gaps in the records of even the common species although 57 Scottish and 44 Irish v.c. records have been added. Many records are single ones from particular vice-counties or, as in the case of the northern counties of Ireland, very old ones.

It is hoped to publish updated lists for England (south) and England (north) and Wales in subsequent newsletters.

VICE COUNTY DISTRIBUTION

IRELAND: CENTIPEDES 40 VICE COUNTIES

1		2		3		4		Total records
1	2	3	4	5	6	7	8	
*	*	*	*	*	*	*	*	14
*	*	*	*	*	*	*	*	6
*	*	*	*	*	*	*	*	9
*	*	*	*	*	*	*	*	4
*	*	*	*	*	*	*	*	11
*	*	*	*	*	*	*	*	10
*	*	*	*	*	*	*	*	1
*	*	*	*	*	*	*	*	11
*	*	*	*	*	*	*	*	2
*	*	*	*	*	*	*	*	6
*	*	*	*	*	*	*	*	16
*	*	*	*	*	*	*	*	24
*	*	*	*	*	*	*	*	7
*	*	*	*	*	*	*	*	16
*	*	*	*	*	*	*	*	22
*	*	*	*	*	*	*	*	18
*	*	*	*	*	*	*	*	10
*	*	*	*	*	*	*	*	1
*	*	*	*	*	*	*	*	4
*	*	*	*	*	*	*	*	9

REQUESTS

Lithobius variegatus

The distribution pattern of this most distinctive animal would repay further investigation. I should be grateful for records of either collections or observations of it from anywhere in the British Isles giving 10 km. square and date (other data if available). It is not likely to be mistaken for any other of our species.

A D Barber

Mine waste tips (old)

It is possible that *Lithobius forficatus* favours sites such as these even where the surrounding countryside is dominated by *L. variegatus*; this seems to be part of its general association with human activity. More records would be welcome.

A D Barber
32 Speakers Rd, Ivybridge, S. Devon

Live millipedes

Andy Keay (46 Albany Road, Newport, Isle of Wight, PO30 5JA) would be very pleased to receive specimens of live millipedes which are required for photographic purposes.

LETTERS

Dear Doug

I was very glad to see that an attempt to revive the Bulletin is being considered, and whilst I have no specific contribution to offer at the moment, I wonder if you could draw readers' attention to the very great contribution the Bulletin would make to centipede biology if it were used to record observations made in the field. The sorts of things I have in mind are:

FEEDING - all field observations. Of particular interest would be the predation of earthworms (*Geophilus carpophagus* is said to do this) and data on Cryptops, especially capture of prey.

REPRODUCTION - Egg carrying in Lithobius - whether or not egg is coated with soil and shape of 'ootheca'. Brooding in Cryptops and geophilomorphs - date, habitat, size of brood and, if possible, leg number of female and young geophilomorphs.

ACTIVITY - Centipedes abroad in day time. Centipedes in trees, in very wet habitats or actually in water.

John Lewis
Taunton School, Taunton, Somerset
27.4.1982