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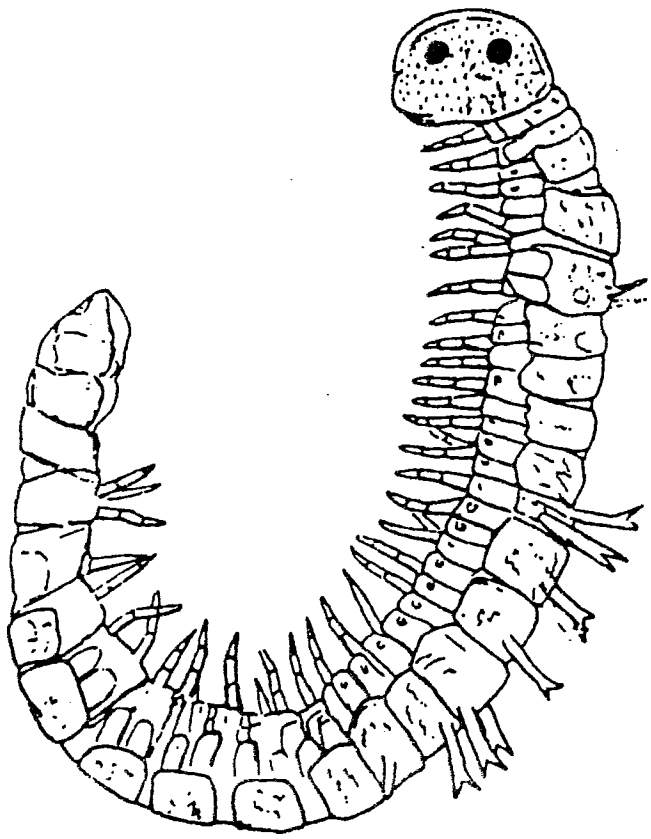
BULLETIN of the BRITISH MYRIAPOD GROUP

Edited for the Group by:
A.D. Barber
and
J.G. Blower



Acantherpestes vicinus
Fritsch
Permian fossil

Volume 6

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BULLETIN OF THE BRITISH MYRIAPOD GROUP

VOLUME 6

NOVEMBER 1989

BULLETIN of the BRITISH MYRIAPOD GROUP

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Bulletin of the British Myriapod Group 6 (1989)

EDITORIAL

Delay in the appearance of Volume 6 is not to be blamed on the pressure of civic duties of the one, not on the bereavement suffered by the other, but rather on the shortage of copy at the critical time. However, the Editors do accept a little of the responsibility since they too, are contributors. On this subject, a glance at the Index to Volumes 1 - 5 in this copy will show that five authors have undue prominence. We rely on our other colleagues to correct this unevenness in time for the Index for volumes 1 - 10. Please start now; we are already six months late!

When just one of our small group is prevented from pursuing research and attending to the many details of the running of the group, the effect can be devastating. Two of the group have suffered major set-backs this year, but we are happy to report that their recovery is proceeding and they both thank their colleagues within the group for the concern they have shown.

Volume 7 will be back on schedule next year, contributors willing, but now is the time to start thinking about the Eighth International Congress of Myriapodology at Innsbruck in July 1990. It should be a very excellent meeting.

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LITHOBIUS TENEBROSUS MEINERT FROM ABERYSTWYTH, CARDIGANSHIRE

A N Keay
46 Albany Road, Newport, Isle of Wight PO30 5JA

Lithobius tenebrosus was first recorded from Britain by R S Bagnall in 1913 from County Durham and again from Cornwall in 1945 by F A Turk (both as L. nigrifons). Neither of these early records have been confirmed and Dr Eason has some doubt of the validity of the Bagnall record (pers.comm.,1988).

The April 1988 field trip of the BMG/BISG to Constitution Hill, Aberystwyth (22/58-81-) has provided the first confirmed record of L.tenebrosus from Britain. The specimen was found in a crevice in a sea cliff at about 10 metres. Other species present at the site were Strigamia crassipes, Cryptops hortensis, Lithobius forficatus and Lithobius melanops.

Description

A pseudomaturus female, light chestnut brown (slightly mottled)

Length: 9.5mm Breadth: 1.0mm
Antennae: 35 articles (Fig.1)
Head: Marginal ridge interrupted and slightly projecting laterally (Fig.1)

Ocelli (1+13) are more numerous than would be expected in a pseudomaturus of other species of a comparable size.

Forcipular segment with 2+2 prosternal teeth in almost a straight line. Prosternal teeth well developed and the internal pair slightly larger than the external pair. Parodontal spine slender (Fig.3).

Trunk: T9, T11 and T13 with small prosterior projections (the projections on T13 are almost as small as those on T9 and not larger as in L.melanops etc.)(Fig.2).

Female genitalia with 2+2 gonopod spurs (Fig.4) and a narrow claw.

Coxal pores: Round with 3 on each leg. (3-6 in mature specimens)

Spinulation (see Figs 5 and 6)

	DaC absent
15	DaP absent
15	VaF present
15	VmC absent

15th legs without accessory claw.
Lithobius tenebrosus is known from Austria, Germany, Scandinavia and Switzerland.

References

Eason, E.H. (1964). Centipedes of the British Isles. London, Warne.
Eason, E.H. (1981). A review of the north-west European species of Lithobiomorpha with a revised key to their identification. Zool. J. Linn. Soc. (1982) 74:9-33.

Acknowledgements

My grateful thanks to Ted Eason and Tony Barber for their prompt confimation of the specimen and to Dick Jones for his wonderful artwork.

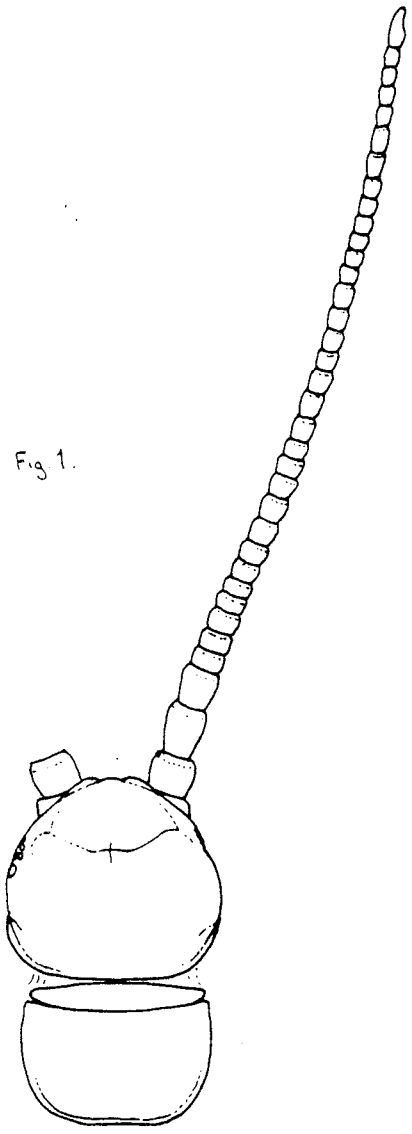

Fig 1.

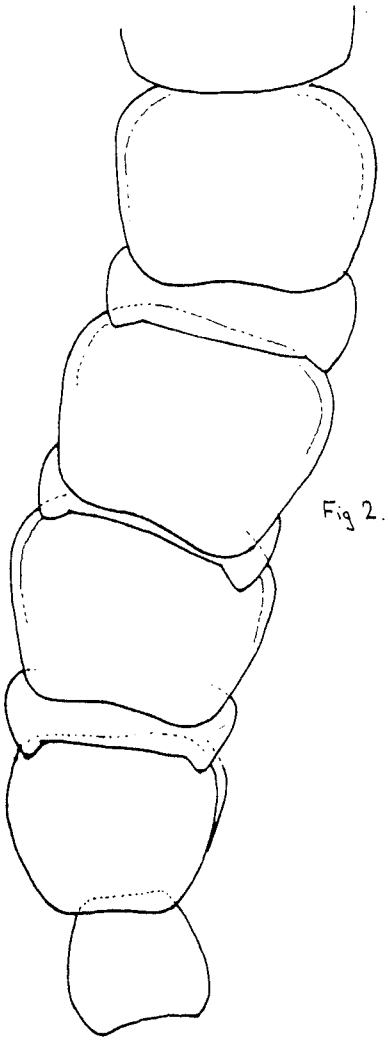

Fig 2.

Fig. 3

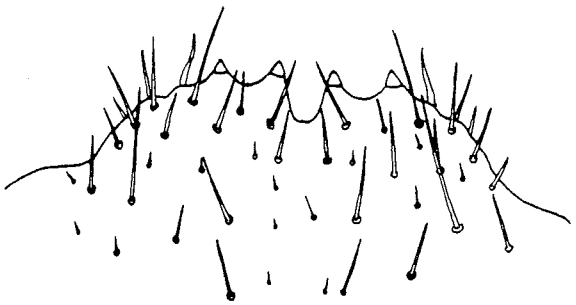

Fig. 4.

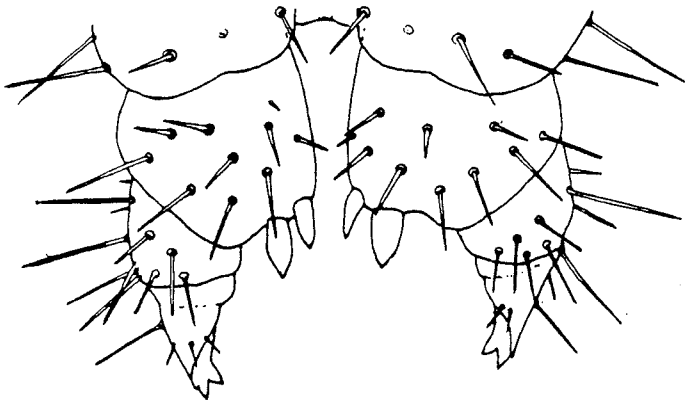

Fig. 5

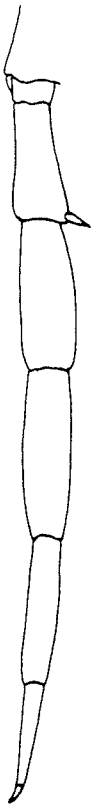

Fig 6.

Figs 1-6 Lithobius tenebrosus pseudomaturus female from Aberystwyth:

1. Head and first tergite, dorsal
2. Tergites 8-15
3. Forcipular prosternal teeth, ventral
4. Gonopods ventral
5. 15th leg, ventral
6. 15th leg, dorsal

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ON THE TWO FORMS OF GEOPHILUS CARPOPHAGUS IN SOMERSET

J G E Lewis
Taunton School, Taunton, Somerset. TA2 6AD

Eason (1979) compared British specimens of Geophilus carpophagus.Leach from natural habitats and what he termed urban/domestic habitats. Specimens from the former rarely exceed 40mm and have 45-49 leg-bearing segments in males and 47-53 pairs in females. Eason's urban/domestic specimens, five from beneath elm bark at Mortlake, London and three from farm buildings at Bourton Far Hill, Gloucestershire were 40-60mm long, the single male had 53 leg-bearing segments and the females 55 or 57. The author suggested that the higher segment number and larger size of the urban/domestic populations was due to the effect of temperature and perhaps other factors on their phenotypes. He also suggested that they bred in buildings.

Lewis (1985) presented data on the number of leg-bearing segments of G.carpophagus from houses, outbuildings and on trees at St Margaret's-at-Cliffe and Dover, Kent. His figures, 51 and 53 in males, 53 and 55 in females agree with Eason's (1979) figures for urban/domestic populations. Lewis suggested that there were two genetically distinct populations, possibily sibling species, the one smaller, common on moors, heath and woodland and showing calcifuge tendencies, the other larger, subcortical and arboreal and entering houses.

In 1987 Blower reported that during a field course at the Seabeach Hotel, Gower, Wales, two unusually large specimens of G.carpophagus were taken on the trunks of pine trees and subsequently two females with 55 and 57 leg-bearing segments measuring 50mm and 42mm respectively were taken from the garden wall of the hotel. A small specimen in a spider's web outside a laboratory window had 55 pairs of legs. Some twenty or so individuals from a natural site, 6km to the east had 47-49 pairs of legs in males and 49-51 in females.

In discussions during the meeting of the Isopod and Myriapod Study Groups Field Meeting at Hallsannery Field Centre, Devon, in April 1989, Andy Keay and Tony Barber expressed scepticism about Lewis's suggestion that there were two species of carpophagus-like Geophilus. Andy Keay believes that there are intermediate specimens but Eason's and Blower's data does not appear to support this and there is no evidence as yet that it is the case in Somerset.

Since 1984 groups of pupils from Taunton School have participated in an investigation of the distribution of centipedes in West Somerset. Most of the specimens of G.carpophagus collected were sexed and the number of leg-bearing segments counted. Details of the 45 locality records cannot be given here but the leg numbers of the specimens from woodland and heathland habitats and from buildings are given in Table 1 and the data for the specimens from buildings in Table 2. Table 1 shows that there is no overlap in leg numbers between specimens from houses and heathland and those from buildings and Table 2 that specimens from buildings are generally of large size. There appears to be a partial colour difference between the two forms, the trunk in specimens from woods or heathland

being brown, brownish-orange or brownish-yellow, while specimens from buildings are brown or brownish-grey but more information needs to be collected on colour.

It is clear that the problem is not yet resolved. Further collecting is required as is a detailed morphological study of the two supposed forms.

References

Blower, J.G. 1987. Giant Geophilus from the Gower. Bull. Brit. Myriap Gp 4: 53

Eason, E.H. 1979. The effect of the environment on the number of trunk-segments in the Geophilomorpha with special reference to Geophilus carpophagus Leach. In Camatini, M (Ed.) Myriapod Biology. 233-240 London: Academic Press Inc.

Lewis, J.G.E. 1985. Centipedes entering houses with particular reference to Geophilus carpophagus Leach. Entomologist's Mon. Mag. 121(1985): 257-259.

TABLE 1 The Number of Leg-Bearing Segments of Geophilus carpophagus populations in Somerset.

	MALES					FEMALES				
Number of leg-bearing segments	45	47	49	51	53	47	49	51	53	55
Wood and Heathland	3	14	0	0	0	3	22	3	0	1
In Buildings	0	0	0	0	1	0	0	0	1	4

TABLE 2 Data for Geophilus carpophagus from buildings in Somerset

DATE	LOCALITY	GRID REFERENCE	SEX	BODY LENGTH (mm)	No of leg-bearing segments
25/04/85	Taunton School	ST 218259	♀	46	53
25/02/86	Bridge Farm, Williton	ST 077408	♀	45	55
02/03/86	Bridge Farm, Williton	ST 077408	♀	45	55
13/09/87	Halse	ST 143283	♂	39	53
21/03/88	Taunton School	ST 218259	♀	54	55

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VICE COUNTY LISTS FOR CENTIPEDES, 1989

A N Keay
46 Albany Road, Newport, Isle of Wight

Current vice-county lists for British and Irish centipedes are here presented; vice-county numbers are as in Harding and Sutton (1985).

* Recorded + Recorded only from glass houses - Not recorded

Records of Scutigeromorpha (Scutigera) and of Scolopedra spp which only occur as obvious introductions, usually indoors are excluded.

Comments on the Vice-County Lists:

1. These lists do not include records which are not yet on card or specimens not yet identified.

2. There are genuine absences or scarcities e.g:

   (i) L.crassipes in the South West
   (ii) L.variegatus In the East
   (iii) Cryptops spp. in non-urban areas in the North
   (iv) H.subterraneus: probably a similar pattern to Cryptops

3. There are clearly areas of poor recording, for example N.Essex, Suffolk and parts of N.Wales.

4. Some of our records are very old literature ones.

Less Common Species

5. Certain other species are probably widespread:

   (i) L.fulvicornis will probably occur in most areas in the Autumn.
   (ii) L.borealis is probably strongest in the West but worth looking out for elsewhere.
   (iii) L.macilentus has a good scatter of records (except S.W.) and should be worth looking for in deciduous woodland.

6. Some species are more or less restricted to one area but have isolated records from elsewhere:

(i)	L.tricuspis	Devon & single records from elsewhere
(ii)	L.muticus	South-East & scatter of records from various parts
(iii)	L.tenebrosus	France & Wales
(iv)	L.piceus	South-East only
(v)	L.pilicornis	South-West & scattered urban records

General Comments

7. There is a need for many more urban/suburban records.

8. Look for coastal species in all coastal Vice Counties.

9. All areas of Scotland require records. Charles Rawcliffe has added a lot of new records but the picture is very patchy otherwise.

Reference

Harding, P.T. & Sutton, S.L. (1985). Woodlice in Britain and Ireland: Distribution and Habitat, Huntingdon; Natural Environment Research Council.

VICE COUNTY DISTRIBUTION OF BRITISH CENTIPEDES

GEOPHILOMORPHA AND SCOLOPENDROMORPHA

Vice County Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Haplophilus subterraneus	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	-	-	*	*	-	*	-	*	*	*	*	*	*	*	*
Nesoporogaster brevior	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyroschendyla submarina	*	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schendyla nemorensis	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	-	-	*	*	*	*	-	*	*	*	*	*	*	*	-
Schendyla peyerimhoffi	*	-	*	-	-	-	-	-	-	*	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brachyschendyla dentata	-	-	*	*	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	*	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-
Brachyschendyla monoeci	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Henia vesuviana	-	-	*	-	-	-	-	-	*	*	*	-	-	-	*	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-
Henia brevis	*	*	*	-	-	*	-	-	-	*	-	-	-	-	*	*	*	-	-	-	*	-	-	-	-	-	-	-	-	-	*	-	-	-	-	*	-	-	-
Strigamia acuminata	*	-	-	*	*	*	-	*	-	*	*	*	*	-	*	*	*	*	-	*	-	*	*	*	-	-	*	*	*	*	*	*	*	*	-	-	*	-	*	*
Strigamia crassipes	-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	-	*	*	-	*	-	*	*	-	-	*	*	-	*	*	-
Strigamia maritima	*	*	*	*	*	*	*	-	*	*	*	-	*	*	*	-	-	-	*	-	-	-	-	*	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-
Pachymerium ferrugineum	-	-	-	-	-	-	-	-	-	*	-	-	-	*	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clinopodes linearis	*	-	*	-	-	-	-	-	-	-	-	-	-	-	*	*	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Geophilus carpophagus	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	*	*	*	-	*	*	-	*	*	*	*	*
G.electricus	-	-	*	*	*	*	-	-	-	*	*	-	-	-	*	*	*	-	-	*	-	-	*	-	-	-	*	*	*	*	-	*	-	-	*	*	-	-	-
G.fucorum	*	*	*	-	-	-	-	-	-	*	-	-	-	*	*	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-
G.insculptus	-	-	*	*	-	*	-	*	-	*	*	*	-	*	*	*	*	*	-	*	*	*	*	-	-	*	*	*	*	*	-	*	*	-	*	*	-	*	*
G.osquidatum	*	*	*	-	*	-	*	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*	*	-	*	-	-	-	-
G.pusillifrater	*	-	-	-	-	-	-	-	-	*	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G.proximus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Necrophloeophagus flavus	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-
Brachygeophilus truncorum	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	-	-	*	*	*	*	-	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*
Chalandea pinguis	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dicellophilus carniolensis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tygarrup javanicus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nothogeophilus turki	*	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arenophilus peregrinus	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptops anomalans	-	-	*	-	-	-	-	-	-	*	-	*	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*	-	-	-	-	-	-
Crytops hortensis	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	-	*	*	*	*	*	*	*	*	*	-	*	-	-	-
Crytops parisi	*	*	*	-	*	*	-	-	-	*	*	-	-	*	*	*	-	-	-	*	-	-	-	-	-	-	-	*	-	*	-	*	*	-	-	-	-	-	-

Vice County Number	4 1 2 3 4 5 6 7 8 9 5 1 2 3 4 5 6 7 8 9 6 1 2 3 4 5 6 7 8 9 7 1 2 3 4 5 6 7 8
	0 0 0 0
Haplophilus subterraneus	- * * * * * * * * * - * * * * * * * * * * * * * * * * * - * * * - - * * - - -
Hydroschendyia submarina	- - - - - * - - - - - - - - - - - - - - - - * - - - - - - - - - - - - - - - -
Schendyla nemorensis	- * * * * * * - * * * - * * * * * - * * * * * * - * * * - * * * - - - - - - -
Schendyla peyerimhoffi	- * - - - - - - - - - - * - - - - - - - - - - - - - - - - - - - * - - - - - - -
Henia brevis	- - * -
Strigamia acuminata	* * * * * * - * * * - * - * * * * * * * - * * * * - - - * - - - - - - - - -
Strigamia crassipes	- * * * * - * - - - - - - * - - * - * - - - - * - - - - - - - - - - - - - - -
Strigamia maritima	- * - - * * * - - * - * * - - - - - * - * * * - - - - * * * - * - - - - - - -
Clinopodes linearis	- * - * - - - * * * - - - - - - - - -
Geophilus carpophagus	* * * * * * * * * * * * * - * * * * * * * * * * * - * * * * * - * * * - - *
G.electricus	- * * * - - - - * * - - * * - * * * * - * - - * * * - - - * - * - - - - - - *
G.fucorum	- * - - - - - - - * - * - - - - - - -
G.insculptus	- * * * * * * * - * - - * - - - - *
G.osquidatum	- * * * -
Necrophloeophagus flavus	- * * * * * * - - * - * * * * * * * * * * * * * * - * * * * * * * * * - * *
Brachygeophilus truncorum	* * * * * * * * * * - - * - * * * * * * * * * * * * * * * * * * * - - - - *
Dicellophilus carniolensis	- + - - - - - - - - - - - -
Cryptops anomalans	- - - * - - * -
Cryptops hortensis	* * * * * * * - * * - - * * - * * * * * * - * * * - - * - * * * - - * - - - -
Cryptops parisi	- * - - * -

Vice County Number	7 9 8 1 2 3 4 5 6 7 8 9 9 1 2 3 4 5 6 7 8 9 1 1 2 3 4 5 6 7 8 9 1 1 2 3
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Haplophilus subterraneus	- - - - * - *
Hydroschendyia submarina	- *
Schendyla nemorensis	- - - * * - - - - - - - - - - - - - - - * - - - - * - - - - - - - - * -
Strigamia crassipes	- - - - - * * - * -
Strigamia maritima	- - * * * * * * * - - - - - - - - - * - * - - - * - - - * - * * * *
Clinopodes linearis	- - - - * -
Geophilus carpophagus	* * - * * * * - * * * - - - - - - - - * * - - - * * * - - * - * - - -
G.electricus	- - - - * * -
G.fucorum	- -
G.insculptus	- * - * * * * * * - * - - - - - - - * * * * - - - * - - - - - - - - * -
G.proximus	- * -
Necrophloeophagus flavus	* * - * * * * * * - - * - - - - - - * - * * - - - * - - - - - - - - - -
Brachygeophilus truncorum	* * - * * * * * * * * - - * - - * - * * * * - - - * - - * * - * - * -
Dicellophilus carniolensis	- - - - - + -
Cryptops hortensis	- - - - - * * -
Cryptops parisi	- - - - - * -

LITHOBIOMORPHA

Vice County Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Lithobius variegatus	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	-	*	-	*	*	*	*	-	-	-	-	*	*	*	*	*	*	*	*	*	*
Lithobius peregrinus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius forficatus	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Lithobius piceus	-	-	-	-	-	-	-	-	-	-	*	*	*	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius melanops	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	*	*	-
Lithobius macilentus	-	-	-	-	-	-	*	*	*	-	*	-	-	-	*	-	*	-	-	-	*	*	-	-	-	-	-	-	*	*	-	*	-	-	*	-	-	-	-
Lithobius tricuspis	-	-	*	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius borealis	*	*	*	*	*	*	*	-	-	*	*	*	-	*	*	*	*	-	-	-	*	*	-	-	-	*	-	*	*	-	*	-	-	-	-	-	-	-	*
Lithobius lapidicola(pusillus)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius pilicornis	*	*	*	-	-	-	-	-	*	*	-	-	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-
Lithobius calcaratus	*	*	*	*	*	*	-	-	-	-	-	*	*	*	-	*	-	*	*	-	-	-	*	-	-	*	*	*	*	-	*	*	-	*	-	-	-	-	*
Lithobius muticus	-	-	-	-	-	-	-	-	-	-	*	*	*	*	*	*	*	-	-	-	*	*	*	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-
Lithobius crassipes	*	-	-	-	*	*	*	-	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	-	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*
Lithobius curtipes	-	-	-	-	-	*	-	*	-	-	*	-	-	*	-	*	-	-	-	-	*	-	-	-	-	-	*	*	-	-	*	-	*	-	-	-	-	-	-
Lithobius microps	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Lithobius tenebrosus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lamyctes fulvicornis	-	*	*	*	*	*	-	-	-	*	*	-	-	*	*	*	*	-	-	-	-	-	-	-	*	*	*	-	*	*	-	*	-	-	-	*	*	*	*

Vice County Number	40	1	2	3	4	5	6	7	8	9	50	1	2	3	4	5	6	7	8	9	60	1	2	3	4	5	6	7	8	9	70	1	2	3	4	5	6	7	8
Lithobius variegatus	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	-	*	*	*	*	*	*	*	-	*	*	-	-	*	*
Lithobius forficatus	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	-	-
Lithobius piceus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*	-	-	-	-	-	-	-	-	-	-
Lithobius melanops	-	*	*	*	*	*	*	-	-	*	*	-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	-	*	*	-	-	-	-	-
Lithobius macilentus	-	-	*	*	*	-	-	*	-	*	*	-	-	-	*	*	-	*	-	*	-	-	*	*	*	*	*	*	-	-	*	*	*	*	-	-	-	-	-	*
Lithobius tricuspis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius borealis	*	*	*	*	*	*	*	-	*	*	*	*	-	*	-	-	-	-	-	*	*	-	*	*	-	*	*	-	*	*	*	*	*	*	*	*	*	-	-	-
Lithobius lapidicola	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
Lithobius pilicornis	-	*	-	-	*	*	-	-	-	-	*	-	-	-	-	*	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius calcaratus	*	*	*	-	*	*	-	-	-	-	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	-	*	-	-	-	-	-	-
Lithobius muticus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius crassipes	-	*	*	*	*	-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	-	-	*
Lithobius curtipes	-	-	*	*	-	-	-	*	-	-	-	-	-	-	-	-	*	-	-	-	-	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius microps	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-
Lithobius tenebrosus	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lamyctes fulvicornis	*	*	*	-	*	*	-	-	*	*	*	-	-	*	*	*	*	*	*	*	-	*	*	*	*	-	*	*	*	-	*	*	*	*	-	-	-	*	*	*
Lamyctes africana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-

Vice County Number	7 9	8	1	2	3	4	5	6	7	8	9	9	1	2	3	4	5	6	7	8	9	1	1	2	3	4	5	6	7	8	9	1	1	2	3
		0										0										0										0			
																						0										0			
Lithobius variegatus	-	-	*	*	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	*	*	*	*	-	*	-	-	-	-	-	*	-	-	-	*
Lithobius forficatus	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	-	*	*	*	*	*	*	-	*	-	*	-	-	*	*	*	*	*	*	*
Lithobius africana	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius melanops	-	*	*	*	*	*	*	*	*	*	-	-	-	*	-	-	*	*	*	*	*	*	-	*	-	*	-	-	-	*	-	-	-	*	-
Lithobius macilentus	-	*	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius borealis	*	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	*	-	-	*	-	*	-	-	-	-	-	*	-	*	-	-
Lithobius pilicornis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*
Lithobius calcaratus	*	-	*	*	*	-	*	-	*	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius muticus	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius crassipes	*	*	*	*	*	*	*	*	*	*	*	-	*	-	-	*	-	-	*	-	-	-	-	-	*	*	*	-	*	-	-	-			
Lithobius lapidicola	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius microps	*	-	-	*	*	*	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lamyctes fulvicornis	*	*	-	*	*	-	*	-	*	*	-	-	-	-	-	-	*	-	-	-	*	-	-	*	-	-	*	-	*	*	-	*	*	*	-

IRISH VICE COUNTY DISTRIBUTION

Vice County Number	1	2	3	4	5	6	7	8	9	1 0	1	2	3	4	5	6	7	8	9	2 0	1	2	3	4	5	6	7	8	9	3	1	2	3 0	4	5	6	7	8	9	4 0
Haplophilus subterraneus	*	-	*	*	*	*	-	*	-	-	-	-	-	-	-	*	-	-	-	*	*	*	*	-	-	-	*	-	-	*	*	*	-	-	-	*	-	-	-	
Hydroschendyla submarina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Schendyla nemorensis	-	-	*	*	*	*	-	-	*	-	-	*	-	-	-	-	*	-	*	*	-	*	-	-	-	*	-	-	-	-	-	-	*	-	*	-	*	*		
Strigamia crassipes	*	-	-	*	-	*	-	-	-	-	*	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-		
Strigamia maritima	*	-	*	*	*	*	-	-	*	-	-	*	-	-	-	-	-	-	*	-	-	-	-	-	*	-	-	-	*	-	-	*	-	*	*	-	-	*	-	-
Geophilus carpophagus	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*	-	-	-	*	-	-	-	-	-	*	*	*	-	-	-	-	-	*	-	*	-	*	*
G.electricus	-	-	-	*	*	*	-	-	*	-	-	-	-	-	-	-	*	*	-	-	-	*	-	-	-	*	-	*	-	*	-	-	-	-	-	-	-	-	-	-
G.fucorum	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G.insculptus	*	-	-	-	-	*	*	*	-	-	-	-	-	-	-	-	-	*	*	*	*	*	-	-	-	-	*	*	*	*	*	-	-	-	-	-	-	*	-	*
G.osquidatum	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Necrophloeophagus flavus	*	*	*	-	*	*	*	*	*	-	-	*	*	-	-	*	-	*	*	*	*	*	*	*	-	*	-	*	*	*	*	*	-	-	-	-	*	-	-	-
Brachygeophilus truncorum	*	-	*	-	-	*	-	*	-	*	-	-	-	-	-	-	*	-	-	-	-	*	*	-	-	*	*	*	*	*	*	-	-	-	-	-	-	*	*	-
Crytops hortensis	*	*	*	*	-	*	-	-	*	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*	-
C.parisi	-	-	-	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithobius variegatus	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	-	*	-	*	*	-	*	*	-	-	*	*	*	*	-	*	-	*	-	*	*	*	*	*	*
Lithobius forficatus	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	-	*	*	*	*	*	*	*	*	*	*	*	*
Lithobius melanops	*	*	*	*	*	*	*	*	*	-	-	-	*	-	-	*	-	*	*	*	*	*	*	-	-	-	*	*	-	-	*	-	-	*	*	-	*	*	*	*
Lithobius borealis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	*	*	*	-	-	-	*	-	*	*	*	*	-
Lithobius crassipes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*	-	-	-	*	-	*	*	
Lithobius microps	-	*	*	*	*	*	*	*	-	*	-	*	*	-	-	-	*	*	-	*	*	*	*	*	-	-	*	*	-	-	-	-	-	*	-	*	*	*	-	
Lamyctes fuvicornis	*	-	*	*	*	-	-	-	-	-	-	*	-	-	-	-	*	-	-	*	-	*	-	-	*	-	-	-	-	-	-	*	-	-	-	-	*	-	-	

Bulletin of the British Myriapod Group 6 (1989)

THE MYRIAPODA OF GOWER

J G Blower

Department of Environmental Biology, The University, Manchester

Gower (S.Wales) is an interesting area for myriapods; it has a wide variety of habitats from acid grassland on the commons and on the uplands of Cefn Bryn and the Rhossili Down, to the limestone grasslands, scrub and woodlands extending right down to the sea shore. Only a few miles separate the Swansea conurbation from the quiet rural areas of the peninsula.

Ian Morgan's paper on the myriapods of South West Wales (Morgan, 1988) stimulated me to sort the records accumulated over a succession of annual field courses in September. In addition, an area of Park Woods has been sampled by Tullgren funnels, pitfall traps and by hand to research the life cycles of certain species of millipedes (Blower & Miller, 1974; Blower, 1979).

Records are summarised in Table 1 and Figure 1. These include 28 species of millipedes and 23 of centipedes. I have incorporated records from Morgan, 1988 and also the more recent records which he has kindly sent to me. In Table 1 Morgan's habitats are indicated by a lower case m at the head of each kilometre square. Full habitat data are lodged with the Biological Records Centre, Monks Wood Experimental Station, Abbots Ripton, Huntingdon. This paper summarises the data and gives notes on habitats and the rarer species.

THE SITES

In Figure 1 the number of species in each kilometre square are given, millipedes above, centipedes below. Some squares include more than one site (see list of squares and sites in Appendix 1). Five sites have yielded twenty or more species; Oxwich (26), Park Wood (nr. Llethrid)(24), Bishop's Wood, Caswell Bay (24), Horton Dingle (footpath to Slade)(22) or, if the whole length of the path is included in two adjacent squares (27). Finally, Ilston Cwm (20). All these sites are on limestone; as a result, there are fewer species of centipedes than of millipedes, but only just lower in Bishop's Wood (13:11). Next in the league table of good sites are Parc Cwm (19), Nicholaston (18) and Pennard (17); this last is dume heath and is exceptional in providing more species of centipedes than of millipedes (8:9). Two of the three best sites, Oxwich and Bishop's Wood are limestone woods extending right down to the spash zone of the shore. Llethrid probably owes its high position to its status as a research site.

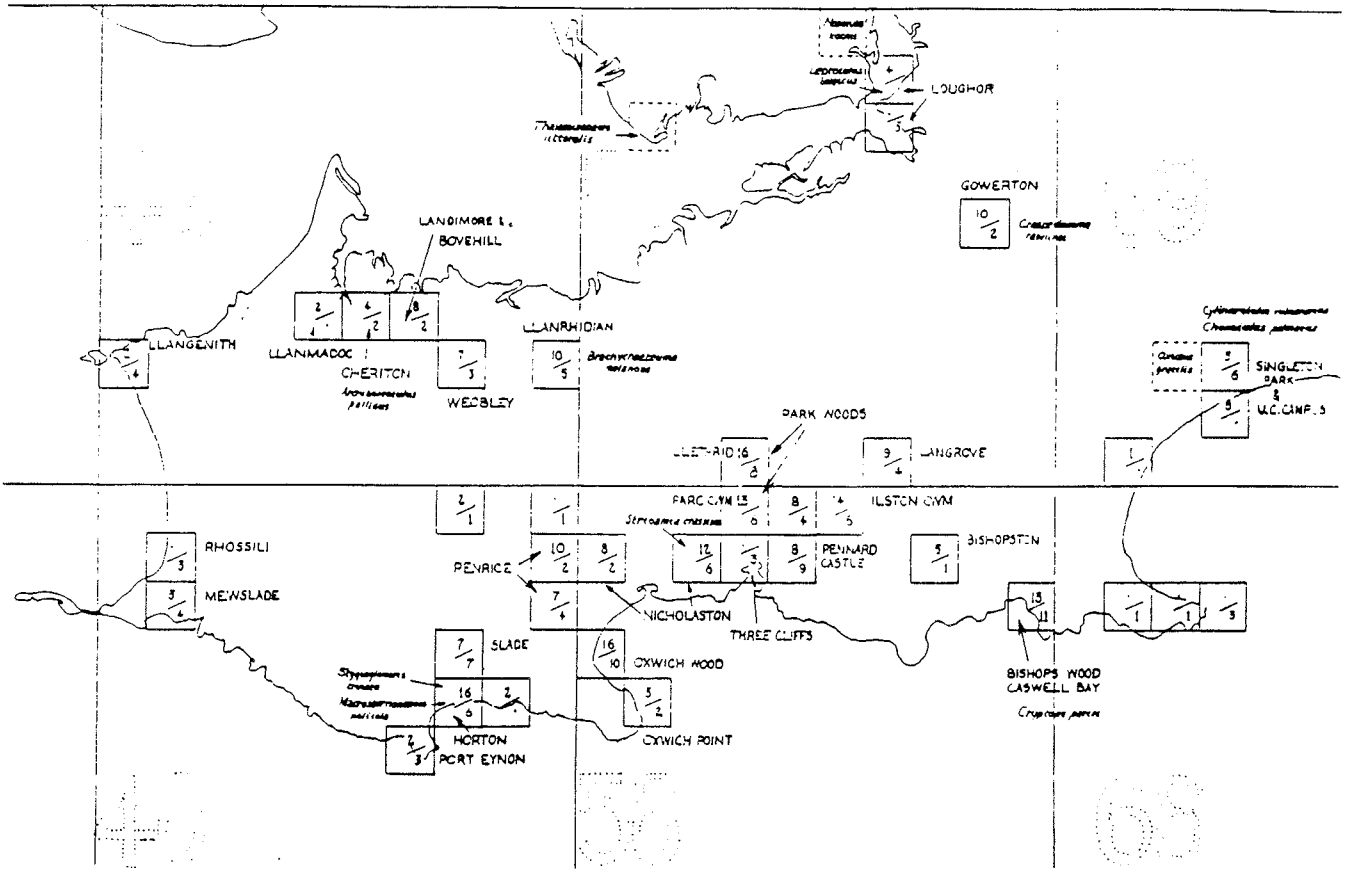

Figure 1

The six 10 Km squares of Gower are shown. The 1 Km squares which have been worked show the number of species of millipedes (above) and of centipedes (below) within them. The position of some of the rarer species is indicated.

Table 1

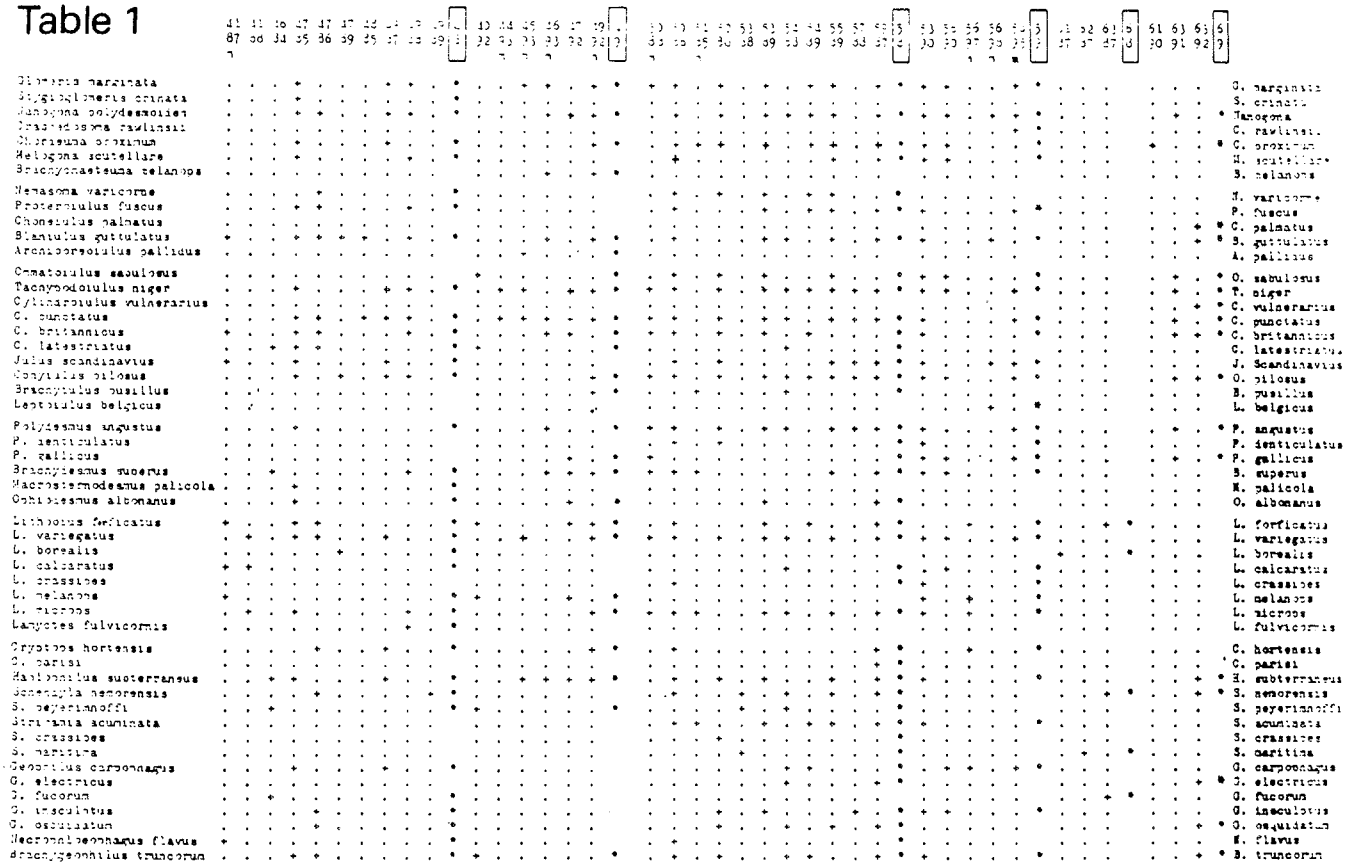

Table 1

Showing the presence or absence of species for each kilometre square. The 1 Km co-ordinates appear across the top, easting above, northing below (these are listed in Appendix 1 together with the sites therein). A sub-fix m below the grid reference denotes a square worked by I K Morgan. The boxed figures show the 10 Km square and the asterisks summarise the records within them. The Km and 10 Km squares are shown in Figure 1.

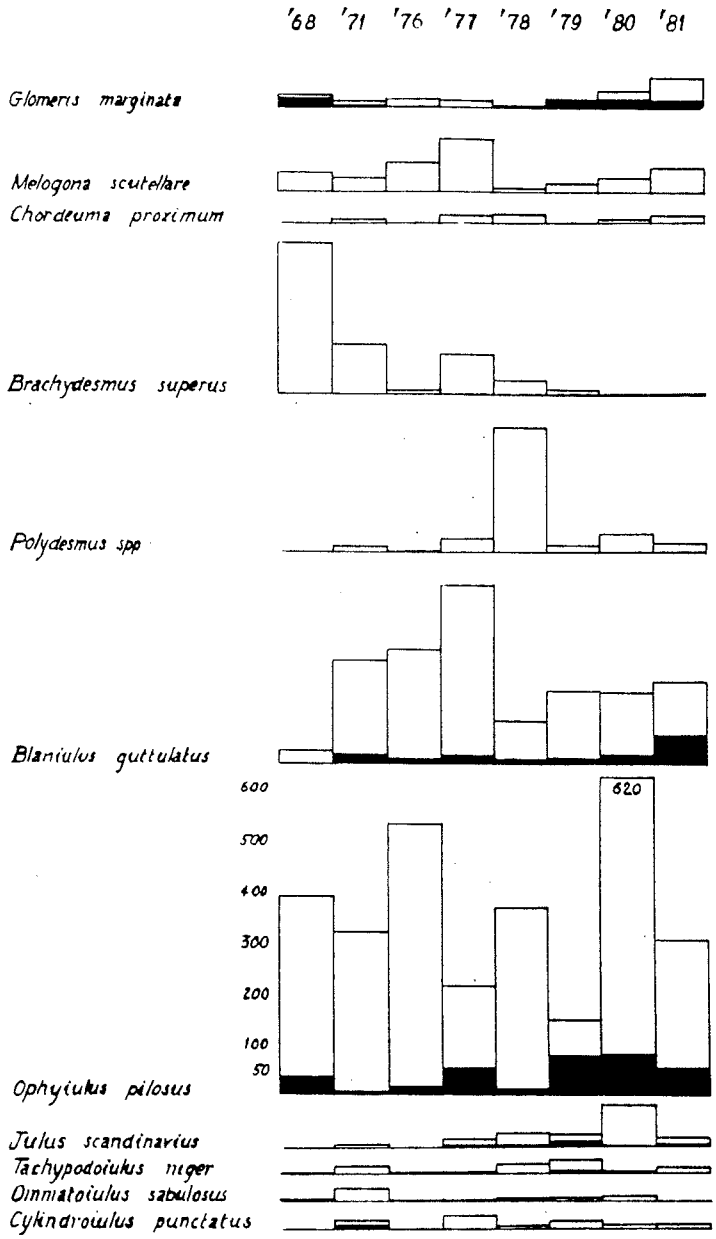

Figure 2

The mean overwintering densities per square meter at Park Wood (Llethrid), Gower, estimated from Tullgren funnel extractions of 20 units of 0.1 m^2 in September of the years shown. Adults within each species are indicated by the back section of each column. 1968-1977, from Blower, 1979; 1978-1981 are new data.

Oxwich

Mixed deciduous with oak (Quercus spp.) dominant. The wood is well provided with fallen trees which have remained where they fell, in various stages of decomposition. It is a curious feature of Oxwich that Cylindroiulus britannicus is often much more common than C.punctatus in dead wood. Nemasoma varicorne is only locally common and Proteroiulus fuscus is distinctly rare.

Llethrid (Park Wood)

At the northern end of Park Woods is a mixed deciduous plot which has been systematically sampled since 1968; initially samples were taken several times a year; laterly the samples have been taken once only, in September. The objective was to provide phenological data to clarify the life-histories of Ophyiulus pilosus (Blower & Miller, 1974), Melogona scutellare, Brachydesmus superus and Blaniulus guttulatus (Blower, 1979). The site is exceptional in carrying a mean overwintering density of nearly 800 individual millipedes per square metre, belonging to sixteen species. Figure 2 shows the annual change in density of ten of these sixteen; the Polydesmus spp. are mostly immature and not referable to a species, but adults of P.angustus, P. denticulatus and P. gallicus have occurred. Nanogona polydesmoides, Proteroiulus fuscus and Cylindroiulus britannicus are occasional visitors. This data from 1968-1977 was published in Blower (1979); the figures for 1978-81 are given here for the first time. One of the more interesting features of these time series was the decline in numbers of Brachydesmus superus in the seventies and early eighties this decline may have followed by dry summers of 76 and 77; Blower (1979) showed that most of the production of B.superus occurred in the summer months and this may mean that the species is vulnerable to dry summers since the soil at Llethrid is a shallow well-drained rendzina.

In contrast to the high density of millipedes there was only a modest mean of 22 centipedes per square metre and these belong to five species only: Lithobius variegatus, Haplophilus subterraneus, Geophilus insculptus, Strigamia acuminata and Brachygeophilus truncorum. In addition, Lithobius crassipes, L. melanops and L. microps have occurred just off the main sampling area. The frequencies of centipedes in the main samples are low and never more than 50% of the 20 units taken.

Bishop's Wood, Caswell Bay

Like Oxwich Wood, Bishop's extends right down to the shore. There are two main areas. At the shore end the wood is dominated by the Holm oak (Quercus ilex). Further inland, sycamore (Acer pseudoplatanus) dominates and the soil is a typical mull. Bishop's wood was one of the three sites from which Geophilus osquidatum was first recorded as British (Blower, 1961). From here also came the second British find of Chordeuma proximum in 1967 since when we have the feeling that this species has become much more common throughout Gower.

RARE AND NOTEWORTHY SPECIES

Seven species of millipedes are represented at only one site; two have been found in only two sites and another two confined to three sites. Six of these rare species were recorded first by Ian Morgan, four from the north and north east which we have neglected:

Polyxenus lagurus This species has not yet been recorded at a specific site, but Gillham (1977) records it 'on Gower cliffs'. Morgan (pers. comm.) suggests that careful searching under stones and mats of sea campion (Armeria maritima) on the super-littoral zone of the Gower cliffs is likely to reveal this species in the future.

Stygioglomeris crinata 3♀♀ ix/87

Macrosternodesmus palicola 2♀♀ and immatures ix/85. Both these species were found under well-embedded limestones at the abse of an only dry wall in the shade of hazel (Corylus avellena) in the Dingle at Horton; both occurred together in association with Ophiodesmus albonaus.

Choneiulus palmatus 2♂♂ ♀♀ and immatures ix/81 under a piece of wood on the site of a recently demolished hut (one time a biology lab.) on the campus of the University College.

Archiboreoiulus pallidus Under logs in a mixed deciduous wood at Cheriton (Morgan, 1988).

Cylindroiulus vulnerarius Numbers of adults and young were found in the soil of the azaelea bed in Singleton Park, immediately adjacent to the campus of University College in 1979, 1981, 1984 but not in 1986. This was the first Welsh record (and the third British). This blind julid occupied the topsoil which had been treated at some time with peat and a mulch of bark chippings; it was associated with Blaniulus guttulatus and Cylindroiulus britannicus.

Leptoiulus belgicus Common under the litter of Reynoutria japonica on grassland at Loughor on the North East fringe of Gower (Morgan, 1988).

Craspedosoma rawlinsi in an oak, hazel (Corylus avellena) and alder (Alnus glutinosa) wood (wet, acidic). NW of Cefn Gorwydd-Fawr, Gowerton 22.v.1985 (Morgan 1988) and in another patch of wet acidic woodland south of Gowerton in the same kilometre square 8.iv.89 (Morgan. pers. com.)

Brachychaeteuma melanops Under stones in a grazed ash wood, Landimore, under stones in grazed scrubby limestone grassland, Bovehill (both these in the same kilometre square) and under well-embedded stones in an ash wood north of Llanrhidian; all three records on the same day, 8.iv.89 (Morgan, pers. com.).

Brachyiulus pusillus A gynandromorph was found in September 1979 but the specimen was not given a specific habitat. More recently it was recorded under Festuca mats at Oxwich Point (Morgan, 1988), collected 12.ii.87. The following year I had a male under a stone at the base of Pennard Castel (ix.88). Thirdly, the species was found at Llanrhidian on the salt marsh near high water mark 8.iv.89 (Morgan, pers. comm.).

Polydesmus denticulatus This species so far has only been recorded from Oxwich, Nicholaston and Llethrid woods. Its rarity merely reflects the fact that adults of Polydesmus are rare, and underlines the need to find a method of recognising immature stadia - the only young diplopods not recognisable.

Ten species of centipede are here considered rare; three species are known only from a single site, five species are known from two sites only, and two are present in three sites, but one species from each of these categories has been found repeatedly in one of the sites.

Strigamia crassipes Nicholaston Wood, ix.86, immature, 51 podous

Necrophloeophagus flavus Mewslade 29.v.88 (Morgan, 1988)

Cryptops parisi Caswell Bay ix.84 and 86

Geophilus fucorum seurati First found in a limited area of stones in the

Enteromorpha zone close to the old lifeboat slipway in front of the YHA at Port Eynon, ix.73 (then the third British record) and found there, but not collected of late, in most subsequent years. There is also a record from mid-head, Mumbles viii.73 by Dr P E King.

Lithobius borealis from Stout Hall Wood, ♂ iii.59 and on the cliff path from Langland to Mumbles, iii.59. More recently it was found at Rhossili Moor (acidic heath), 12.x.88 (Morgan, pers. comm.) and on the dune heath by Pennard Castle, 16.ix.89 by Dr R R Askew.

L. crassipes Oxwich wood, ix 78 and 82.

Lamyctes fulvicornis Penrice, valley bottom ix.85 and Nicholaston, ix.86. A third record came from Ilson Cwm, ix.89 but this was too late to include in Table 1.

Schendula peyerimhoffi On the shore at Port Eynon, viii.83 (coll. P E King) Burry Holme, 23.ix.73 Coll. C.E.T.Nield. Three Cliffs Bay ix.81 and in several years following. The occupied habitat is a small area at high water neap, of stones covered with the orange yellow lichen.

Moving a yard or so out of this area one can still find Schendyla, but it is S. nemorensis. On one occasion, further upstream on the west bank of the Pill where the high spring tides reach the edge of North Hill Wood, there were two Schendyla under the same stone; one was S. peyerimhoffi the other was S. nemorensis, ix.85.

Geophilus electricus 1♀ Bishop's Wood 11.iv.61 Walltop, Singleton Park imm. ix.81 2oo North Hill Wood ix.85.

In volume 4 of this Bulletin I drew attention to the arboreal habit of some larger than usual individuals of Geophilus carpophagus. In 1985 two students found a male and two females 5 feet up a pine tree outside the Sea Beach Hotel at Horton. In September 1986 two females measuring 42 and 40 mm (57 and 55 segments respectively) were found exploring the garden wall of the same hotel at 9 o'clock in the evening. This form of G. carpophagus was described by Eason (1979); in my note in vol. 4 I omitted to quote a paper by Lewis (1985) on this same phenomenon.

In view of the occurrence of Lithobius pilicornis in Pembroke and adjacent Carmarthen (Morgan, 1988), I should stress that all larger lithobiids have been examined most carefully; to date, no individuals of L. pilicornis have been found in Gower. Finally I should mention that as recently as this year I collected two individual "Brachygeophilus truncorum" in their usual compact

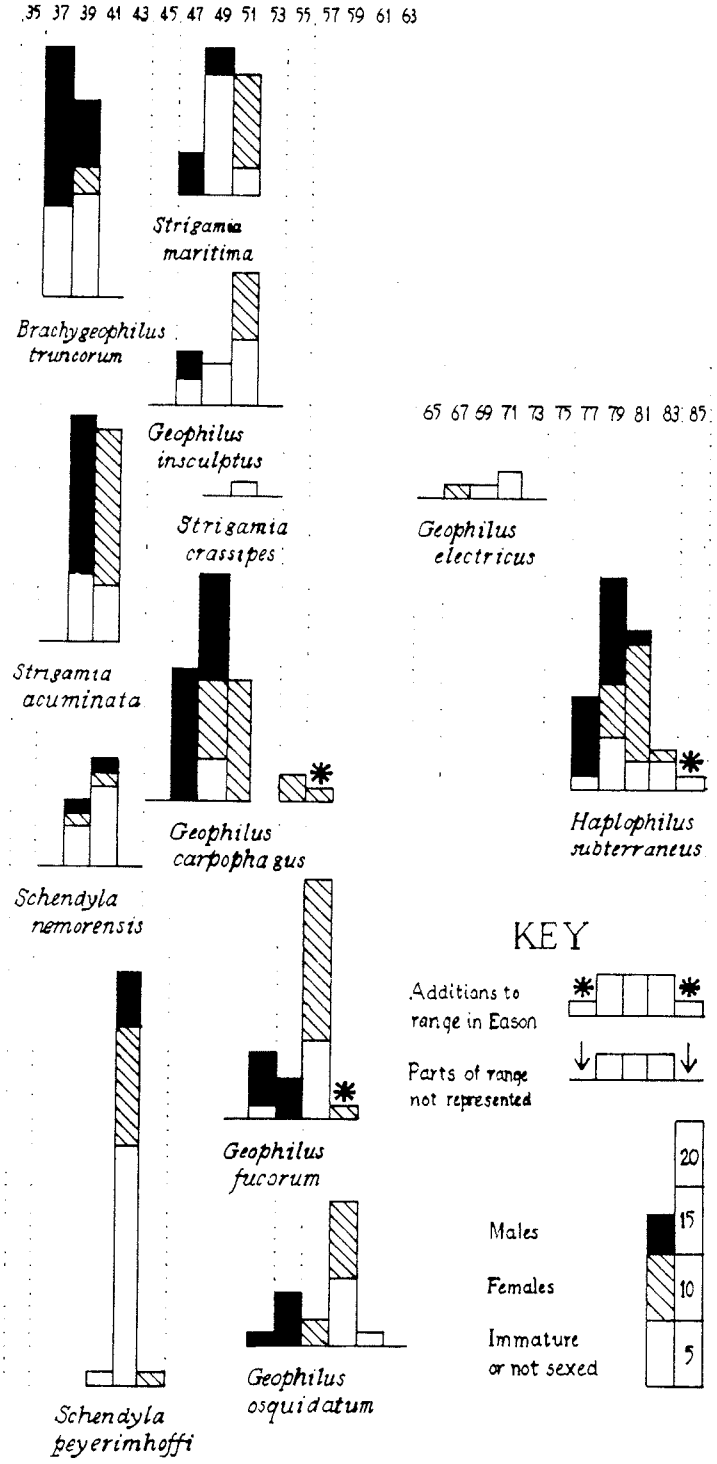

Figure 3

Frequencies of numbers of podous segments of Gower geophilomorphs compared with the national ranges given by Eason (1964).

resting attitude under the bark of a fallen branch in Ilston Cwm; on examination in the laboratory they both turned out to be Schendyla nemorensis; this last is known to be common in coastal regions; it is especially common in Gower in a very wide variety of habitats!

SEGMENTS NUMBERS IN GEOPHILOMORPHA

Figure 3 shows the frequency of numbers of podous segments within each species. Although the sample size is small (the figure includes 278 individuals which have been examined) it is perhaps useful towards establishing the possibility of regional variation. There are minor deviations from the overall distribution given in Eason (1964). Notable in Gower is the absence of any B. truncorum with 41 segments, and the limitation of S. nemorensis to either 39 or 41 segments. Although individual G.carpophagus mentioned in the previous section with 57 segments is not included in Eason (1964) it is included by Eason, 1979 and by Lewis, 1985.

CONCLUSION

Many of the Gower records have resulted from September field courses in faunistics where students become familiar with as many animals of all groups as possible. Our collecting has been restricted to a few sites in which the species diversity is greatest. Most of these sites are on base rich soils and acid sites have been neglected. This bias alone may account for the relative paucity of chilopod records. Ian Morgan has suggested to me that we have probably missed Craspedosoma rawlinsii, for example, since we have not sampled in the wet coalfield valley woods of Northeast Gower. Morgan also points out that the restriction of our collecting to September may limit the number of species we encounter.

Figure 1 shows the uneven coverage of Gower at the present date (all known records up to the end of 1988 are included). The summary will serve as a guide to just where and when our further collecting should be directed in order to increase our knowledge of the myriapods of Gower.

ACKNOWLEDGEMENT

My sincere thanks are due to Mr Ian K Morgan for the stimulus he has given to me, for the information he has provided to enable this summary to be as comprehensive as possible, and for his care and attention to detail in reading through a draft of this paper.

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Appendix: The Kilometre Squares and the Sites Included

41 87	m	Mewslade Bay	416873
41 88		Rhossili, footpath to shore	41588.
		Rhossili, path to Worm	416880
46 84		Port Eynon, shore by YHA	470848
		Port Eynon, above splash zone	47.84.
47 85		Horton, Seabeach Hotel	477856
		Horton, Dingle, footpath to Slade	479857
47 86		Dingle, further north	479860
47 89		Stout Hall Wood	47489.
48 85		Horton, shore path to Oxwich	48.85.
49 87		Penrice, old oaks near village	491879
49 88		Penrice, bottom	493883
40 92		Llangenith burrows	40.925
		Burry Holme	400925
	m	Three Chimneys	405926
44 93	m	Llanmadoc	446937
45 93	m	Cheriton	452932
46 93	m	Llandimore	463936
	m	Bovehill	463934
47 92		Weobley	47.927
49 90		Cefn Bryn, quarry	498901
49 92	m	Llanrhidian	491923 498924
50 88	m	Nicholaston Wood	50.88.
50 86		Oxwich Wood	50.86.
51 85	m	Oxwich point	512855
52 88		Nicholaston Wood	523883
53 88		Three cliffs Bay: west bank Pill by ford	53.883
		shingle bank	538880
		marsh by maze	538883
53 89		Parc Cwm, burial chamber	537897
		Redden Hill	536897
54 88		Pennard Castle, base of mound	544885
		North Hill Wood	542885
54 89		Wood by road to Parc Cwm	541894
		Wood at entry to Pennard Castle valley	545891
55 89		Wood near Langrove Inn	55.89.
		Ilston Cwm, poplar stand	55789.
57 88		Bishopston valley	57.88.
59 87		Bishop's Wood, Caswell Bay	59.87
53 90		North end Park Woods, near Llethrid	532908
56 90		Wood near Langrove Inn	56.90.
		Fairwood Common	568905
56 97	m	Loughor	563979
56 98	m	Loughor	568985
58 95	m	Gowerton	583956/7
61 87		Langland, path to Mumbles	61.87.
62 87		Mumbles / Oystermouth, sea wall	62.87.
63 87		Mumbles Head	63.87
61 91		Clyne Woods	61.91.
63 91		University College Campus, E car park	631918
63 92		University College campus hut site	630920
		Singleton Park, Azaelea bed	631922
		Wall top by Sibly Hall	631922

Bulletin of the British Myriapod Group 6

CENTIPEDES (CHILOPODA) FROM THE ISLE OF MAN

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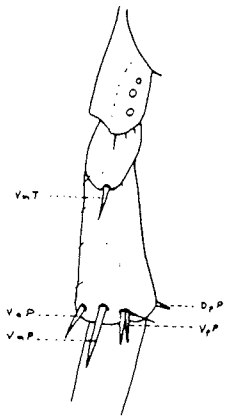
In the standard work by E H Eason, Centipedes of the British Isles (Eason, 1964), five species are recorded from the Isle of Man including the two littoral species Strigamia maritima and Geophilus fucorum seurati which were recorded by Gordon Blower (Blower, 1961) from Port St Mary. The other three species are Lithobius variegatus, L.forficatus and L.borealis. The record of L.borealis is taken from Randell Jackson (1914) who reports several adult specimens at Port Erin identified by Mr Ellingsen; the other two species from Gordon Blower's personal records.

The Provisional Atlas of Centipedes (Barber and Keay, 1988) includes seven species from the island. These were all the records in the data used to prepare that account and include, besides the Blower and Randell Jackson records Lithobius variegatus, L.forficatus, L.melanops and L.microps based on specimens collected by F A Turk 1952-63 and identified by A D Barber. We also note reference in Blower (1957) to Strigamia maritima feeding on Balanus balanoides (Linné) and Littorina saxatilis (Olivi) on the shore at Port Erin at night.

The Manx Natural History Journal, "Peregrine", (Garrad, 1948, 1972) contains references to Lithobius forficatus which it calls the "pill millipede" from Glen Roy, Cornaa, Andreas, Sulby, Calf of Man and Castle Rushen. There is also a record of Glomeris marginata, the actual pill millipede from St Johns. This confusion of the vernacular name is such that it is difficult to be sure exactly which species is recorded from where. These are not included in the present account in consequence.

In the Spring of 1989 D C Boyce and A P Fowles carried out a survey of selected sites of ecological interest (Boyce & Fowles, unpub) which added a number of species to the list for the island. We have also had access to Gordon Blower's personal records which were not available at the time when the data was processed for the Provisional Atlas. These date mostly from the years 1951-3. These new records are indicated (B & F) and (B) respectively in the account which follows. Where detailed dates are not given they are nevertheless included in the National Recording Scheme.

10km National Grid squares (from the 100km squares SC (24) and NX (35)) are given for each species; those from published records by Blower and Randell Jackson are given in parentheses unless there is a subsequent record from that square. New (i.e. unpublished) vice-county records are marked with an asterisk (*).



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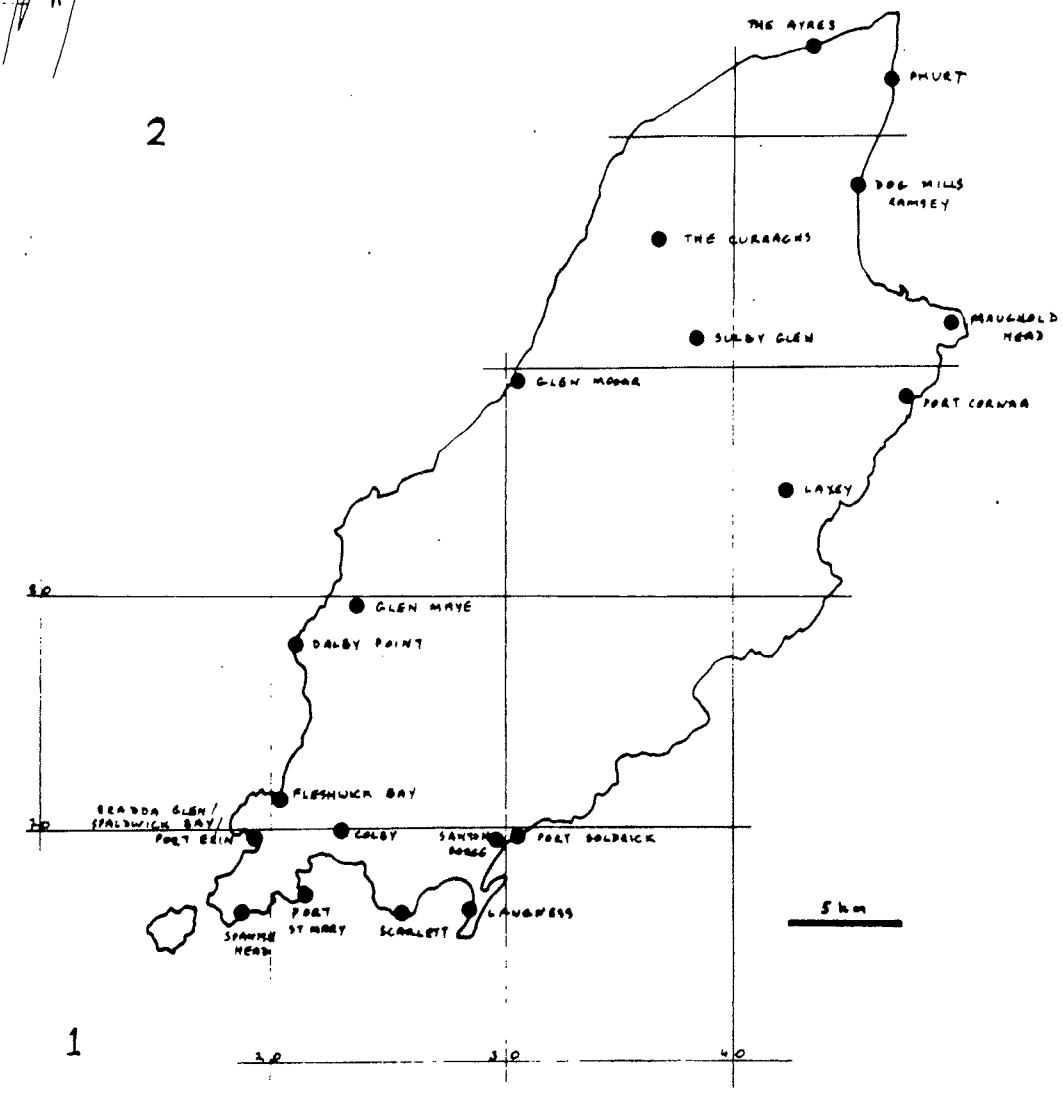

Figure 1: Map of Isle of Man to show main localities referred to in text.

Figure 2: Lithobius melanops ♂ from Scarlett; part of right 15th leg, ventral.

SPECIES LIST

Order GEOPHILOMORPHA

* Haplophilus subterraneus (Shaw)

A large yellow species collected from coastal grassland above a stone beach in a small cove at Fleshwick Bay (3.v.89) (B & F). Also from Port Erin, upper shore (31.iii.51)(B).

10Km squares : SC 16, 27

* Schendyla nemorensis (C L Koch)

A damaged female from Dalby Point (1.v.89). Also from the Ayres (4.v.89), Langness (2.v.89)(B & F); It has also been collected (B) between 1951 and 1953 from Moorland overlooking Fleshwick Bay Spaldrick Bay by Port Erin by road from Port Erin to Port St Mary, Port Erin (upper shore), Laey and Golf Links at Port Erin.

10Km squares : SC 16, 26, 27, 48, NX40

* Schendyla peyerimhoffi Brol. & Rib

A littoral centipede, recorded here from Langness, coastal grassland above salt marsh (2.v.89)

10Km square : SC 26

Strigamia maritima (Leach)

Recorded by Blower (1961) from Chapel Bay, Port St Mary and by Turk from Port Erin. Now recorded also from Glen Mooar (5.v.89), Phurst (30.iv.89), Cornaa (4.v.89), and Langness (2.v.89)(B & F), Gansey Point, Port St Mary (30.viii.69) and Port Erin (iii.53)(B).

10Km squares : SC 16, 26, 28, 48 NX40

* Geophilus carpophagus Leach

Recorded from Dalby Point (30.iv.89), Maughold Head (30.iv.89), Spanish Head (3.v.89) (B & F); Moor overlooking Fleshwick Bay (18.iii.51) and Golf Links at Port Erin (29.iii.53)(B).

10Km square : SC 16, 27, 49

* Geophilus electricus (Linné)

A female was collected by Gordon Blower from Spaldrick Bay near Port Erin (22.iii.51).

10Km square : SC 16

Geophilus fucorum seuati Brolemann

As indicated above, this was recorded by Blower (1961) from Port St Mary. It is widespread on S. and W. coasts of Britain.

10Km square : SC (26)

* Geophilus insculptus Attems

Recorded from Glen Mooar (5.v.89), Dalby Point (1.v.89), Glenmaye (1.v.89)(B & F); Fleshwick Bay (30.iii.52), Golf Links at Port Erin (29.iii.53). By the road from Port St Mary to Port Erin (23.iii.51) and between Fleshwick and Port Erin (18.iii.51)(B).

10Km square : SC 16, 26, 27, 28

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

Recorded from Soldrick (2.v.89), Cornaa (4.v.89), Langness (2.v.89)(B & F); Sulby Glen (viii.69), and between Port Erin and Calf Sound (18.iii.51)(B).

10Km squares : SC 16, 26, 36, 39, 48

* Brachygeophilus truncorum (Bergsoë & Meinert)

Recorded from the Ayres (4.v.89), Glen Mooar (5.v.89), Ballangh Curraghs (5.v.89) (B & F), Fleshwick Bay (30.iii.52) and Laxey (iii.53)(B).

10Km squares : SC 27, 28, 39, 48 NX 40

Order SCOLOPENDROMORPHA

* Cryptops hortensis Leach

A damaged specimen was collected from Ballaugh Curraghs (5.v.89), also from Fleshwick (3.v.89)(both B & F), Spaldrick Bay (22.iii.51, 2.iv.51) and Port Erin (31.iii.51)(B).

10Km squares : SC 16, 26, 39

Order LITHOBIOMORPHA

Lithobius variegatus Leach

Recorded by Eason (1964) and from Port Erin by F A Turk (ix.52). There are also records from Sulby Glen (iv.52), Port Cornaa (observed, 4.v.89)(Both B & F), Moor overlooking Fleshwick Bay (18.iii.51) Spaldrick Bay (2.iv.51)(B).

10Km squares : SC 16, 27, 39, 48

Lithobius forficatus (Linné)

The common large lithobiid of most parts of the British Isles, this was recorded by Eason (1964) and by Turk (ix.52, Port Erin). Further records are from Scarlett, Glen Mooar, Dalby Point, Santon Gorge, Soldrick, Dog Mills (Ramsey) Fleshwick (all B & F), Sulby Glen (B & F and B), Moor overlooking Fleshwick Bay, Spaldrick Bay, Port Erin, road between Port Erin and Port St Mary, Bradda Glen, road between Port Erin and Fleshwick (B).

10Km squares : SC 16, 26, 27, 28, 36, 39, 49 NX 40

Lithobius melanops Newport

A common species of coastal and urban habitats, this was collected from Port Erin by Turk (ix.52) from Scarlett (3.v.89) and Langness (2.v.89)(both B & F), and from beside the road from Port Erin to Port St Mary (23.iii.51)(B). One Scarlett specimen has an interesting double spine (Vpp) on one 15th leg (Fig.3).

10Km squares : SC 16, 26

Lithobius borealis Meinert

Apart from Randell Jackson's report we have only one record; Moorland overlooking Fleshwick Bay (18.iii.51)(B).

10Km squares : SC (16), 27

* Lithobius macilentus L.Koch

A female and a juvenile of this parthenogenetic (in Britain) species was collected from mixed deciduous valley woodland of a "pleasure glen" at Glen Maye (1.v.89)(B & F).

10Km square : SC 27

* Lithobius crassipes L Koch

Although not recorded in the most recent collection (B & F) it was collected by Gordon Blower from between Port Erin and Calf Sound (18.iii.51) Colby (1.iv.51) and beside the road from Port Erin to Fleshwick (29.iii.53).

10Km squares : SC 16, 27

Lithobius microps Meinert

Collected by F A Turk at Port Erin (ix.52), from coastal cliffs at Dogmills, Ramsey (30.iv.89, B & F), Spaldrick Bay (22.iii.51, 2.iv.51), Bradda Glen and by the road from Port Erin to Port St Mary (all B).

10Km squares : SC 16, 26, 47

DISCUSSION

This list more than doubles the number of centipede species known from the Isle of Man but in the light of the previous scarcity of records this is not surprising and most of those recorded are widespread in Britain and Ireland. Certain presences and absences however call for comment.

Haplophilus subterraneus is a species of the southern and western parts of Britain, becoming distinctly synanthropic in most northern sites. Schendyla peyerimhoffi is a littoral Atlantic species known from Wales, South West and Southern England, Brittany, Portugal and Morocco (Barber, 1987)so its presence is not unexpected; this does however represent its present most northly record. Lithobius macilentus is known from scattered woodland sites in Britain (except the South West) including Southern Scotland. It has not, as yet, been reported from Ireland.

Of the commoner species not yet recorded from the island are the two non-littoral Strigamia species which may be found by further collecting and Lithobius calcaratus C L Koch, generally regarded as an animal of dryish environments and not known from Ireland. Lamyctes fulvicornis Meinert is an autumnal species which will no doubt be found by collecting at an appropriate time of year. Other than these, the fauna resembles that of North Wales and Northern and Western England.

Lithobius crassipes and Lithobius borealis are typical smaller lithobiids of rural areas of Britain with the former tending to be more eastern and the latter tending to be western. More records will be needed to establish whether either of these is the dominant type in the Isle of Man. It is also possible that further species may be found by more prolonged search.

Acknowledgements

We would like to thank especially Mr J G Blower for allowing the use of his records in the preparation of this paper and I S Francis who assisted in the collection of specimens.

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MILLIPEDES ON THE MOVE: INVASION OF A HOUSE IN CHESHIRE BY TACHYPODOIULUS NIGER AND JULUS SCANDINAVIUS

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On 23rd September 1982 the Zoology department at the University of Manchester received a telephone call from a Mr Worth who lived on the edge of a fairly new estate at Appleton Thorn, Lymm, Cheshire. He had been experiencing problems of large numbers of millipedes marching into his house, either through the front door or a large picture window, and being careless enough to get squashed on the carpet. He was actually more interested in trying to stop the onslaught, but agreed to allow us to observe the invasion in action. So, on a warm, dry evening we arrived to find, as expected, hoards of Tachypodoiulus niger (Leach) tramping round the house and trundling along an adjoining fence. Mr Worth apologised that he had just swept the front doorstep and we therefore collected the sweepings. These contained 29 T.niger from stadium VII to stadium X with a predominance of stadium VIII (16). Both males and females were represented (17 females, 11 mature males and 1 intercalary male). Also present were 6 female Julus scandinavius Latzel (stadium X). Nineteen other animals were gathered from the ground around the house and these included 2 more J.scandinavius.

We then turned our attention to the fence beside the house. This was covered with millipedes out for their 9pm constitutional. In the space of about 10 metres we collected 122 T.niger, all but 8 ranging from stadia VII to X (66 females, 36 mature males, to immature males and 8 juveniles of stadium V). Again the dominating stadium was VIII (80 specimens). There were no intercalaries found here, and no J.scandinavius.

Having failed to convince the occupiers of the house that millipedes were wonderful animals we left them to continue their war against the invaders, and, for comparison, turned our attention to a more usual habitat nearby. A mere 10 minutes collecting on a bank beside the road close to the house produced a catch of 17 T.niger and 27 J.scandinavius. Females, mature and immature males were present for both species, but no intercalaries were found.

At the back and one side of the house was a field being cultivated for wheat. It is possible that the building of new houses had disturbed the habitat of the millipedes in some way. However, none of the other houses appeared to be as attractive to the millipedes, and all of the houses had been present for several years. T.niger is well known for its wandering habits (Fairhurst,1970) and such invasions have been recorded before notably by Scott (e.g., 1958, 1959). It is interesting to note that the invasion included a mixture of ages and sexes and a few J.scandinavius. It is fortunate that this was not on the same scale as invasions recorded for another Schizophylline millipede, Ommatoiulus moreleti Lucas. In Australia the abundance of this species had been known to cause train stoppages (P. Bailey pers.com.).

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MISCELLANEA

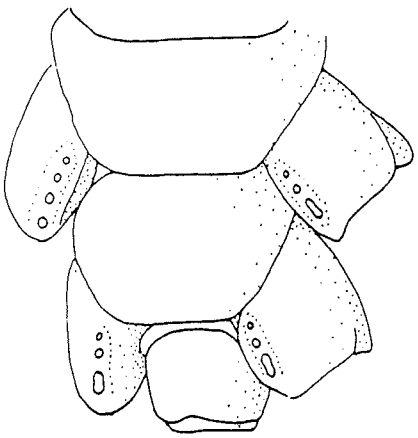
REDUCTION IN NUMBER OF COXAL PORES IN LITHOBIUS VARIEGATUS LEACH

During routine measurements of a sample of the Lithobius variegatus population from Lydeard Hill, Somerset on 10 March 1988 a fourth post larval stadium male, 17.5mm long, was taken with an abnormal number of coxal pores. Lydeard Hill is 1Km east of West Bagborough, Grid Reference ST 182 339.

Post larval stadium 4 Lithobius variegatus have five pores on the coxa of leg 12 and 4 on the coxa of each of legs 13, 14 and 15 (Eason, 1964). The Lydeard Hill specimen had 5.4.3.3. pores on the right hand side and 5.4.4.3 on the left (Fig.1). The reduction in pore number is due to the fusion of the strongly sclerotised rims of the two distal pores in each case (Fig.2). The ducts of the coxal organs remain separate within the unified pore.

There is no indication that there has been any previous damage and regeneration and it seems probable that this is a case of a developmental abnormality.

A case of an abnormally high number of coxal pores in a female Lithobius variegatus from the same population was ascribed by Lewis (1977) to regeneration.



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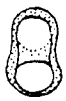

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Figure 1. Ventral view of posterior end of male Lithobius variegatus to show coxae of legs 14 and 15.

Figure 2. Fused coxal pores of right leg 15.

References

Eason, E.H. (1964). Centipedes of the British Isles. London; Warne.

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J G E LEWIS
TAUNTON SCHOOL, TAUNTON, SOMERSET

BRACHYGEOPHILUS TRUNCORUM (Bergsoe and Meinert) with 35 pairs of legs.

On 24 January 1989, four Brachygeophilus truncorum were collected from beneath the bark of logs and stumps in a very open thinned larch plantation at Lawford near Crowcombe. Somerset (Grid ref ST 126364, altitude 145m). Two were females with 39 pediferous segments. Two were males. One with 37 pediferous segments, the other with only 35. I have not hitherto collected a Brachygeophilus with fewer than 37. Eason (1964) gives 37-39 trunk segments for males and 39-41 for females.

References: Eason, E.H. (1964). Centipedes of the British Isles London; Warne.

J G E LEWIS

A YELLOW MUTANT OF LITHOBIUS VARIEGATUS LEACH

On 18 October 1988 whilst sampling a population of Lithobius variegatus under stones in Beech Wood at Lydeard Hill near Bishops Lydeard, Somerset (Grid ref. ST 183339. altitude 330m) a yellow specimen was collected by Miss Beccy Osborn.

The specimen was a male, body length 18mm with a coxal pore formula of 5.4.4.4. The head was yellowish brown (Pompeian yellow), the trunk brownish yellow (yellow ochre), the gut showing through as linoleum brown. The legs were yellow ochre, the posterior ones with pale brown bands. The purple pigment, lithobioviolin, appeared to be absent.

The specimen was kept alive until 25 October 1988 when it was preserved in 70 per cent ethanol. It showed no change in colour during that time.

J G E LEWIS

SOME YORKSHIRE RARITIES

DIPLOPODA

Macrosternodemus palicola, Brolemann. Described by Blower (1952) as being found in the adjacent counties of Northumberland, Durham, Cheshire and Lancashire, has

until recently eluded detection in Yorkshire. First record for Yorkshire from Pieces Holt, nr Maltby: 43(SK) 54-91-:VC 63: 7/5/84:W A Ely, from a garden in Riddlesden, nr Keighley: 44(SE)081425: VC 64: 3/10/85, 21/5/88, and 27/10/88: P Lee, a garden in Ryhill, Wakefield 44(SE)394156: VC 63: 7/5/88: P Lee and grounds of Ingleborough Hall, Clapham 34(SD)784693: VC 64: 3/2/87: P Lee.

Ophiodesmus albonanus (Latzel) presence in Yorkshire based on a single record by Bagnall from near Richmond 45(NZ)10: VC 65: in 1921 (Blower, 1952). Recent records: garden in Riddlesden, nr Keighley: 44(SE)083425: VC 64: 2/5/88: P Lee and ground of Lotherton Hall, Leeds 44(SE)450360: VC 64: 28/7/88: P Lee, D T Richardson.

Brachychaeteuma bagnalli, Verhoeff from Easingwold 44(SE)57: VC 62: April 1956 and August 1961 by J Gordon Blower. Recent records both by P Lee - How Stean Gorge, Lofthouse 44(SE)093734: VC 64: 7/6/86 and garden in Riddlesden, nr Keighley: VC 64: 27/10/88.

CHILOPODA

Clinopodes linearis (C L Koch) Presence in Yorkshire based on a single siting of a male at Sewerby 54(TA)0268: VC 61: by Bagnall in 1935 (Blower, 1955) and no other sitings have been made until recently. Under plank in walled garden at Norton Conyers 44(SE)318762: VC 65: 1/10/88: 2 oo : P Lee/D T Richardson.

References

Blower, Gordon 1952: British Millipedes with Special Reference to Yorkshire Species. Naturalist. 1952: 145-157

Blower, Gordon 1955: Yorkshire Centipedes: Naturalist: 1955: 137-156

P LEE, 20 Southlands Mount, Riddlesden, Keighley, West Yorkshire, BD20 5HB
D T RICHARDSON, 5 Calton Terrace, Skipton, North Yorkshire, BD23 2AY

A SECOND BRITISH SITE FOR PACHYMERIUM FERRUGINEUM (C L KOCH)

During a visit by the Orpington Field Club to Walberswick National Nature Reserve on the Suffolk coast on 20 May 1989, I took the opportunity to search the shingle bank for centipedes. Only one was found, at a depth of about 10cm on the sparsely vegetated landward slope of the bank. It proved to be Pachymerium ferrugineum, previously recorded in Britain only from a similar site at Cuckmere Haven in Sussex (Lewis 1960; Barber & Keay 1988)

The Walberswick specimen is a female, about 21mm in length, with 45 pairs of legs and 14 antennal articles. The site was at 62/4974 and the only vegetation in the immediate vicinity was sea pea, Lathyrus japonicus. No other invertebrates were found within the shingle in the immediate vicinity but the wolf spider Pardosa agricola was numerous on the surface and amphipods were abundant in the shingle on the seaward slope of the bank.

I am grateful to Mr Paul Hillyard of the British Museum (Natural History) for confirming the identification.

References

Barber A D and Keay A N 1988. Provisional atlas of the centipedes of the British Isles. Huntingdon; NERC

Lewis J G E 1960 Pachymerium ferrugineum (C L Koch 1835), a geophilomorph centipede new to Britain. Entomologist's.mon.Mag. 95:206-2076

G B CORBET, 27 Farnaby Road, Bromley, Kent, BR1 4BL

PACHYMERIUM FERRUGINEUM AGAIN

Whilst pitfall trapping on a shingle bank for coleoptera at Newton Bay, Isle of Wight (40/415918) on 7th/8th August 1989 Mr D Anslow collected 3 centipedes wich had been caught in the traps.

These centipedes proved to be:

Pachymerium ferrugineum
Lithobius forficatus
Lithobius melanops

The pitfall traps were placed near the top of the shingle bank amongst sparse vegetation (mostly grass) and were on the landward side of the bank. Very little other fauna was found in the traps.

The Pachymerium specimen is a male with 41 pairs of legs. Specimens from Europe have a range of leg counts as follows:

41-47 for Finland (Palmen)
43-47 for Denmark (Bergsoe and Meinert)
41-57 for France (Brolemann)
41-57 for Portugal (Machado)
53-63 for Canary Isles (Brolemann)
53-63 for the Sahara (Brolemann)
Pachumerium ferrugineum vosselerci from Jerusalem had 67-69 pairs.

It would appear then that the leg count increases the further south the species if found. The specimens found from Britain fall within the range of 41-45 pairs of legs and have all been collected at coastal sites.

A N KEAY

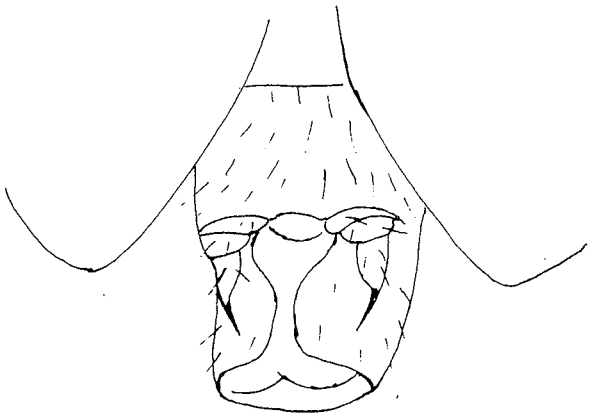
A GYNANDROMOPHIC SPECIMEN OF LITHOBIUS FORFICATUS (LINN.)

On the 12th April 1989 I collected a specimen of Lithobius forficatus from Southampton Docks (41/412119). It was found on a sparsely vegetated area of waste ground under a stone.

When checking the specimen at a later date I found that the specimen is gynandromorphic (it displays both male and female characteristics). The coxal -

pores (5,5,5,4) and the absence of setae on the second genital sternite suggest that it is immature and probably a pseudomaturus. The basal segment of the gonopod is normal and the only abnormality is the female claws on the distal segment.

Ted Eason has seen the specimen and comments that although it is relatively common for lithobids to be male on one side and female on the other he is not ware of any other recorded specimen which has a pair of apparently female claws on a male gonopod.



He also comments that some noxious chemical in the dock area may have induced this abnormality.

A N KEAY

MILLIPEDES ON BLACKBERRIES

In the middle of August last (13.viii.89) I picked a few wild blackberries from a hedgerow at Ivybridge. On washing them through a medium sized darkish brown millipede emerged which subsequently proved to be an immature Tachypodoiulus niger.

Gordon Blower tells me that he has many records of this species on blackberries and that he has on occasion found bird vomit of a black mess containing pieces of Tachypodoiulus. Presumably the birds had taken blackberries and accidentally included T.niger whose taste had caused them to regurgitate the remains.

A D BARBER

Bulletin of the British Myriapod Group 6

AUTHOR INDEX AND GENERAL INDEX FOR VOLUMES 1-5

The General Index is mainly a summary of the TITLES and the subject matter evident from these. There are three sections within the alphabetic sequence: CENTIPEDES, DISTRIBUTION and MILLIPEDES; these each are in alphabetic sequence; a space indicates the end of each of these three sections.

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