

THE BRITISH ISOPODA STUDY GROUP  
Newsletter of the Isopoda Survey Scheme

No. 15

May 1982

INTRODUCTION

The standard set by Newsletter No. 14 is difficult to achieve, but it is hoped that this number will be of interest. Two items are particularly important:

1. Additional records for inclusion in the Atlas of Woodlice of the British Isles will be gratefully accepted by Paul Harding up to the end of August 1982.
2. As from 1 September 1982, the non-marine Isopoda recording scheme and the British Isopoda Study Group will be co-ordinated by George Fussey, to whom all general correspondence should be sent.

Relevant addresses are given at the end of the Newsletter.

PROFESSOR H P MOON

15.1.1910-26.3.1982

It is with great personal regret that I have to report the death of Philip Moon. I am sure you would all like to join me in sending our condolences to his widow, Ruth, and their family. I had the privilege of collaborating with Philip for several years over the recording of Asellus, and BISG has benefited greatly from the many records of Asellus that he contributed. It was always a pleasure to visit him in Leicester and to be able to discuss freshwater fauna, and much else, in a gentle and relaxed atmosphere.

P.T.H.

BISG MEETING, CARDIFF - APRIL 1982

Alison Trew and Graham Oliver are to be congratulated on organising a successful and enjoyable weekend gathering in Cardiff. Sixteen people participated in several informal discussions, a lecture on Ligia by Rob. Willows, some rather damp fieldwork and a fascinating laboratory session including a demonstration of how to dissect woodlice I can hardly see and of the Scanning Electron Microscope. Despite the rain the Glamorganshire coast lived up to expectations, although we failed to beat Graham and Alison at their own game. En route to Cardiff four of us visited the Armadillidium pictum site in the Black Mountains. Much of our discussion time was taken up with the future of the recording scheme (see New Recording Card below) and plans for the Atlas of Woodlice (see below). It was good to see Declan Doogue at the meeting and hear his news of the Atlas of Irish Woodlice (see below).

P.T.H.

### MEETING IN 1983

Annual gatherings are clearly addictive. It was agreed in Cardiff that Douglas Richardson should attempt to find a venue for the 1983 meeting within easy reach of south Cumbria. Happily the British Myriapod Group had similar ideas, and Doug has been able to book accommodation in Lancaster for 15-17 April 1983. Details are enclosed.

P.T.H.

### A NEW RECORDING CARD

I have tried to summarise a rather lengthy discussion, in two sessions, concerning the format of the record card used by BISG which took place during the 1982 woodlouse weekend at Cardiff.

At the 1981 woodlouse weekend it was agreed that George Fussey should meet with Paul Harding and Colin Fairhurst (British Myriapod Group) to discuss the format of the record card, with a view to producing various suggestions for a new card to accommodate post-atlas records (i.e. post-August, 1982). George Fussey duly opened the discussion by circulating a provisional millipede card which encapsulated many of the suggestions made in discussions at Robin Hood's Bay and Monks Wood. In the discussion that ensued the following points were raised:

1. The educational value of the present card was recognised inasmuch as it directed individual recorders' attention to the systematic classification of habitats.
2. Despite the obvious merit of habitat identification to individuals, the collective value of all the data gathered by the scheme was as yet largely undetermined. It was agreed that a proper assessment of the worth of the habitat data would best be postponed until next year when a fuller analysis would be available. Nevertheless the problems of handling such a large data set, both logistical and analytical, were noted.
3. There was some feeling in the meeting that the habitat classification of the present card tended to be off-putting for new or potential recorders; it was seen as being long and over-elaborate and this led to both recorders and the scheme organiser spending a lot of time preparing simple data for the scheme which would be of (as yet) unknown value.
4. Quite apart from the value of habitat data was the question of whether there was a need for any more records at all, given the large data set already collected. The general feeling was that for many of the more widely recorded species ample data were now available and that no further habitat data were necessary. Many of the more restricted species, on the other hand, were not adequately covered by the present habitat scheme, and a more specialised habitat recording classification (perhaps organised as a sub-scheme in future years) might be required. Such developments might best be considered after the preparation of the atlas.

5. Finally, some reservations were voiced about the value of mere "dot-map" recording. In the light of the discussion the meeting recommended that a new card be produced to replace the present card (for which the original block had, in any case, been mislaid by the printer) with the following format specifications:

Card, 8" x 5", to be read from left to right along the long axis of the card. Printed on one side only with no habitat data categories. Front of card to include spaces for basic information such as locality, vice-county, grid ref., recorder/collector, determiner, compiler, date, altitude and source. Species list to be given as at present with the exception of most alien species and the addition of recently discovered species. Habitat information could always be written in on the reverse of the card by the recorder.

It is hoped that next year the meeting will be in a better position to decide on the sort of recording categories that might be put usefully on the reverse of the card, if at all. Various sub-schemes (e.g. littoral isopods) could well adapt the reverse of the card to their own needs. Clearly a new 'instructions to collectors' sheet would have to be drafted and issued.

Altogether the discussion helped to crystallise our thoughts on recording and served to frame in our minds the questions which need to be asked next year about the extent to which the original aims of the present scheme have been met. Clearly, the answers to these questions will determine the aims of the scheme subsequent to the publication of the atlas.

George Fussey

#### RECORDING PAST AND PRESENT, AND THE ATLAS

##### Recording

The present phase of recording ended in January 1982. I am very grateful to all those who contributed records from their field work in 1981 and those who managed to get their records to me by the deadline are to be congratulated! In Table 1 I have summarised the number of records of each species currently held on computer file. This shows an overall improvement of 3,274 records in 1981. Table 2 shows the vice-counties which are still poorly recorded. This is a substitute for the usual 10 km. square coverage map which, because of other commitments, I have been unable to produce for this newsletter.

We have an opportunity to improve our recording coverage in these poorly worked areas. I shall be able to accept additional records up to the end of August 1982. Please try to visit some of these poorly recorded counties this summer. Someone must feel a desire to go fishing in Selkirk or bathing on the Isle of Wight and then find a little time to record any passing woodlice.

TABLE 1

Number of individual records of each species currently held on computer file.  
Records received up to January 1982 only.

<i>Acaeroplastes melanurus</i>	1
<i>Androniscus dentiger</i>	664
<i>Armadillidium album</i>	44
<i>depressum</i>	111
<i>nasatum</i>	142
<i>pictum</i>	8
<i>pulchellum</i>	94
<i>vulgare</i>	1985
<i>Buddelundiella cataractae</i>	2
<i>Cylisticus convexus</i>	140
<i>Eluma purpurascens</i>	36
<i>Halophiloscia couchi</i>	39
<i>zosteriae</i>	5
<i>Haplophthalmus danicus</i>	157
<i>mengei</i>	266
<i>Ligia oceanica</i>	813
<i>Ligidium hypnorum</i>	116
<i>Metatrichoniscoides celticus</i>	7
<i>Metoponorthus cingendus</i>	334
<i>pruinus</i>	189
<i>Miktoniscus patiencei</i>	14
<i>Oniscus asellus</i>	6156
<i>Oritoniscus flavus</i>	50
<i>Philoscia muscorum</i>	3567
<i>Platyarthrus hoffmannseggi</i>	489
<i>Porcellio dilatatus</i>	52
<i>laevis</i>	35
<i>scaber</i>	5094
<i>spinicornis</i>	347
<i>Trachelipus rathkei</i>	77
<i>Trichoniscoides albidus</i>	19
<i>saeroeensis</i>	55
<i>sarsi</i>	10
<i>Trichoniscus pusillus</i> agg.	3504
f. <i>provisorius</i>	140
f. <i>pusillus</i>	120
<i>pygmaeus</i>	508
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TOTAL	25390
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TABLE 2

Poorly recorded vice-counties (less than 50 records)

<u>v.c. no.</u>	<u>v.c. name</u>	<u>no. of records</u>
10	Isle of Wight	10
18	South Essex	46
51	Flintshire	41
78	Peebleshire	23
79	Selkirkshire	1
80	Roxburghshire	28
81	Berwickshire	43
82	East Lothian	34
83	Midlothian	29
84	West Lothian	20
87	West Perthshire	38
90	Angus	46
91	Kincardine	12
100	Clyde Isles	10
102	South Eubudes	27
109	Caithness	47
H32	Monaghan	49
H37	Armagh	46

The Atlas

Plans for the atlas were described in Newsletter 14 and were discussed at some length in Cardiff. All the data received up to January 1982 have been analysed and draft maps have been prepared. Several people have been press-ganged into helping with writing the text and the format of the species accounts is being finalised at present. It is hoped that a first draft of the text will be completed by the end of this summer. The final maps will be run in the autumn and the whole Atlas should be ready for the printer by the end of the year. It is still our intention to get the Atlas published in time for the Zoological Society International Symposium on the Biology of Terrestrial Isopods (London, 7-8 July 1983).

P.T.H.

## ATLAS OF THE DISTRIBUTION OF WOODLICE IN IRELAND

The Irish Atlas (by Declan Doogue and Paul Harding) will be published this summer by the Irish Biological Records Centre at An Foras Forbartha in Dublin. It will contain a distribution map for each native or naturalised species recorded from Ireland and accounts of each species, an up-to-date checklist of Irish woodlice, general introductory text and a bibliography of the occurrence of woodlice in Ireland.

A complimentary copy of the Atlas will be sent to everyone who has contributed records of woodlice from Ireland. Anyone else wishing to receive a copy of the Irish Atlas (for which there will probably be a charge) is asked to contact Paul Harding, in writing please.

### FINDING *BUDDLUNDIELLA CATARACTAE* Verhoeff

by Tony Irwin

This tiny woodlouse was found by Dick Jones and myself in March this year at Snettisham, Norfolk. The site is a stable shingle bank on the sea coast, and *Buddelundiella* has so far been found only on that part of the bank which is thinly covered with *Poa bulbosa*. This is a local grass restricted to mainly coastal sites in southern England, although it is also known from a locality just south of Cardiff, in which city Graham Oliver discovered *Buddelundiella* new to Britain last year. (See Newsletter No. 14.) Armed with this information, Graham visited his local *Poa bulbosa* site in April this year and found *Buddelundiella*\* by hand-searching a humus layer in a pebble bank above a boulder beach.

Hand searching is rather unproductive in shingle, particularly as few of the *Buddelundiella* are more than 2 mm. long. By washing shingle through sieves we have collected large numbers of woodlice, the total estimate for the Snettisham site being over 20,000 per sq. metre of shingle (to 60 cm. depth). The most abundant species are *Buddelundiella cataractae* and *Trichoniscus pusillus* (each about 7,000 per sq. metre) with *Haplophthalmus mengei* not far behind. *T. pygmaeus*, *Armadillidium vulgare* and *Androniscus dentiger* are present in much lower numbers. The greatest concentration is found in the 10-20 cm. layer.

So the message is simple - find a couple of sieves (one at least 30 mesh), a bank of shingle (preferably with *Poa bulbosa*\*\*) and start recording *Buddelundiella*!

\* Graham reports that *Buddelundiella* occurred with *A. dentiger*, *A. nasatum*, *A. vulgare*, *H. mengei*, *O. asellus* and *T. pusillus*.

\*\* A rapid scan of records for *Poa bulbosa* in BRC revealed few with sufficient detail to pinpoint sites worth searching. Possible sites are: Lelant, Cornwall (10/546383), Porthkerry, Glamorgan (31/088666), Hayling Island, Hampshire (40/690994 and 40/710989), Sandwich Bay, Kent (61/3558), Bawdsey, Suffolk (62/332378). However, many possible sites exist along the east coast from Norfolk to Sussex.

P.T.H.

GENETICAL STUDIES OF AN *ARMADILLIDIUM VULGARE* POPULATION

by H W Howard

Further results for the Four Went Ways, Cambridge, population (for a discussion of its sex ratio, see Newsletter No. 14, page 11) have shown:

1. No significant changes have occurred in the past 35 or so years in the frequencies of red (about 5%) and of the two sex-limited to females, reduced pigmentation types (about 6%) (Howard, 1981, *Heredity*, 47, 135-137).
2. Of the first 20 investigated red females collected pregnant, 4 were homozygotes (rr) for recessive red and 16 were heterozygotes (R+) for the dominant gene; this suggests the following gene frequencies, R 0.019, r (black or grey) 0.87, and r 0.11. Thus, although recessive red animals were much rarer than heterozygous dominant reds, the recessive gene (r) has a much higher frequency in the population than its dominant allelomorph (R).
3. Some broods are the result of multiple matings (also known in *Porcellio scaber*, see Sassaman, 1978, *Heredity*, 41, 385-397). For example, brood 58/79 from black female A74 collected pregnant, 79 black: 5 red. On the other hand some broods appear to be from a single male parent, e.g. brood 54/79 from black female A54, collected pregnant, 27 red: 31 black (a very good fit to the expected 1:1 ratio from ++ x R+).
4. It has been known for several years that sperms can be stored for about a year. Females isolated from males after producing a brood usually have a brood in the next year from stored sperms (the genetical segregations may show that parthenogenesis does not occur). Storage of sperms for two years has now been demonstrated: - red female A61, pregnant when collected, in 1979 brood 44/79, 20 red: 25 black; isolated from males; in 1980 brood 1/80, 51 red: 49 black; and in 1981 brood 47/81, 6 red: 6 black. The small brood in 1981 may be due to lack of sperms; previously some females in their second year were observed to have brood pouches containing both young animals and undeveloped eggs as would be expected from a shortage of sperms. The storage of sperms from brood to brood might account for the broods showing multiple matings.

## COLOURATION AND SEX IN WOODLICE

by H W Howard

Differences between the colouration of mature males and females are common in terrestrial Isopods but are not mentioned in most descriptions by British authors. The difference is especially marked in *Armadillidium vulgare* in which Latreille in 1804 designated males as *Armadillo vulgare* and females as a distinct species, *A. variegatus*! They would now be var. *plumbeus* and var. *variegatus* or types A and B respectively.

In species where the sexes show a colour difference, males are deeper coloured than females, and females, in addition to being a lighter colour, may have a series of white or cream markings or be marbled or be partially non-pigmented.

In the genus *Armadillidium*, differences in the colour of the two sexes are recorded by Vandel for *A. depressum* and *A. nasatum* in addition to *A. vulgare* but not for *A. pictum*, *A. pulchellum* and *A. album*. The sex difference in colour is also marked in *Porcellio scaber* but not in *Oniscus asellus*.

There is, however, in *Armadillidium vulgare* a variety (*cooperi* or *collingei*) in which mature males are partially non-pigmented. If anyone should find such an animal, and it must be a mature male, I would be very pleased to have it for genetical work. So far all mature animals partially non-pigmented found by myself in the Cambridge district have always been females. (Dr H W Howard, 97a Glebe Road, Cambridge, CB1 4TE)

## RECORDING MARINE ISOPODA

We seem not to have heard much of Roger Lincoln and Joan Ellis recently, but on a visit to the BM (NH) last week both were observed in their natural habitat - the Spirit Building. Roger said that he would consider the possibility of publishing some maps of marine species in the near future but emphasised that the coverage was very patchy and reflected the distribution of recorders and marine labs. rather than species. Anyone interested in recording marine species is asked to contact Roger Lincoln.

## ADDRESSES

Mr G D Fussey, Biology Department, Repton School, Repton, Derby DE6 6FH.

Mr P T Harding, Biological Records Centre, Institute of Terrestrial Ecology, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs. PE17 2LS

Dr R J Lincoln, Crustacea Section, Department of Zoology, British Museum (Natural History), Cromwell Road, London SW7 5BD.

Newsletter Editor: Paul T Harding