

THE BRITISH ISOPODA STUDY GROUP

NEWSLETTER OF THE ISOPOD SURVEY SCHEME

No. 3

May 1970.

[Please keep this for future reference]

In this, the third issue of the Newsletter, we report recent developments, continue our series on habitats and give a provisional key to the family Armadillidiidae (Pillbugs).

1. PROGRESS OF THE SCHEME

Recruitment of recorders continues at a satisfactory pace, and we are particularly glad to welcome Professor H.P.Moon of Leicester University to the Survey. A large number of people have expressed interest and it is hoped that a fair proportion of these will become active recorders.

2. PUBLICITY

A short note about the scheme will shortly be published in CRUSTACEANA, an international journal devoted to the biology of the Crustacea, published in the Netherlands; and the British Arachnological Society has agreed to circulate our appeal for recorders with their next bulletin. Perhaps the main method of publicity at the moment is through contacts at schools, universities and colleges of education, and this is proving successful, as are the newsletters. In November we featured in the DAILY MIRROR, who sent a reporter hotfoot from Manchester to Leeds to investigate "widgers and pooters". The article was chiefly distinguished by its close proximity to a delicious photograph of Miss Brigitte Bardot!

3. COVERAGE

A map has now been drawn up showing areas of the British Isles where coverage is minimal or non-existent. It will be possible to reproduce this map in the next newsletter. Plans are afoot to encourage collectors to visit poorly worked areas (see below under Finance). A small donation has been made to an expedition from Leicester to collect isopods for us on Orkney.

4. FINANCE

We are very pleased to be able to announce that the John Spedan Lewis Trust has awarded us £100 towards our expenses this year. This very generous donation will enable us to develop the scheme in a vigorous way, at the same time giving us a measure of financial security.

We are also very grateful to the Shell Fund for Invertebrate Surveys for a grant of up to £50. This is to be used to defray expenses of field trips to those parts of Britain which have been neglected by collectors. We would like to hear from anyone prepared to do some intensive collecting in remote places, since, if we know in advance, we may be able to offer up to £10 towards expenses.

5. REVISION OF THE RECORD CARD

This is going ahead steadily, although there are still some problems to be sorted out before the card is printed on our behalf by the Nature Conservancy. The habitat classification has been greatly extended and revised, and will, we hope, be much more comprehensive and easier to use. The classification has already attracted attention both here and abroad, and we hope other survey schemes will follow our lead in this direction. Data collected will be transferred to 80 column punch cards (following a code printed on the recording card), and can then either be analysed by mechanical sorter or by computer. The needs of computer programming have been borne in mind in the design of the recording card.

6. LIAISON WITH THE PROPOSED MILLIPEDE SCHEME

The habitat classification of the new card is designed to satisfy the needs not only of the I.S.S. but also of the Millipede Survey Scheme now getting under way (details can be obtained from Dr. C.P. Fairhurst, Department of Biology, Keele University, N.Staffs.). Both schemes will use the same format and classification on their cards, with either isopod or millipede species listed.

7. TRICHONISCOIDES SAEROEENSIS - A CORRECTION

The locality given for this species in Newsletter 2 was quite incorrect. It is only known from a series of mines at Warton Crag, Lancs. and from two caves in Co. Clare, Eire, viz. Pollnagollum and St. Catherine's II cave. The species recorded in Gough's Cave in the Mendips was *T. sarsi*.

8. PUBLICATIONS

Reprints of a lecture on the 'Study of Woodlice' by S.L. Sutton to the British Entomological and Natural History Society are available on request from the author, Department of Zoology, The University, Leeds LS2 9JT.

9. HABITATS - 3

COLLECTING IN THE LITTORAL ZONE - Crevices.

A crevice can be taken to mean any small enclosed space that an isopod can crawl into and therefore includes - deep rocky crevices, chinks in the rock surface, empty barnacle tests, empty mollusc shells and borings, cracks and borings in wood, the underside of loose rocks and stones, and *Laminaria* holdfasts. Notes should be made as to which of these microhabitats the isopod is found in, and on which level of the littoral zone you are collecting - i.e. splash zone (supralittoral); eulittoral - upper, middle or lower; sublittoral. Some assessment of the degree of shore exposure should also be noted.

Old Red Sandstone, shale, slate, and limestone coasts are usually the most productive areas for collecting crevice dwelling isopods. If the isopod is obtained from a fairly deep rocky crevice details should be noted as to whether it came from the outer, central, or inner zones; what the nature of the rock is; what detritus, if any, is contained within the crevice (i.e. sand, mud, shingle, broken shell, algal etc.); whether any other organisms are present. When collecting under loose rocks and stones their stability should be noted, and also the nature of the substrate they are resting on. Notes should be made as to whether the animal appears to be associated with holes in the rock, the rock surface, or the substrate under the rock.

For collecting in these cryptic habitats a small crowbar and a hammer and chisel are essential. A large and a small pair of forceps, a paintbrush, a strong pointed probe (for opening barnacle tests), and an old knife are also useful. A hand-net should be carried to catch specimens that may have to be dislodged from awkward places.

In the supralittoral zone *Ligia oceanica* is often common in crevices and under loose rocks and debris, and in some areas it may be joined by certain woodlice i.e. *Trichoniscus pusillus*, *Androniscus dentiger*, *Philoscia muscorum*, *Halopphiloscia couchi*, *Porcellio scaber*, and *Armadillidium vulgare*.

Ligia may extend into the upper eulittoral zone. Other isopods are not common in this region but *Campecopea hirsuta* can be found on many shores in S.W. Britain inhabiting crevices and empty tests of *Balanus balanoides* and *Chthamalus stellatus*. The parasitic isopod *Hemioniscus balani*, is sometimes to be found in the mantle cavities of *B. balanoides* and *Elminius modestus*.

Sphaeroma serratum can often be found under rocks and stones, and in crevices in rocks and wooded pier piles of the middle and lower eulittoral zone. *Jaera hopeana* is occasionally to be found living ectocommensally on *S. serratum*. *Sphaeroma rugicauda* and *S. monodi* may be found under stones and in empty mollusc shells in more estuarine situations. In S.W. Britain *S. serratum* may also be found in empty *Balanus perforatus* tests but a more common inhabitant of these are adults of *Dynamene bidentata*; these

are also common in crevices and empty piddock borings, and may very occasionally turn up in *Laminaria* holdfasts. *Dynamene* occurs from the mid-eulittoral into the sublittoral, and is occasionally parasitised by the isopod *Ancyroniscus bonnieri*, which feeds on its hosts brood. Adults of *Gnathia maxillaris* are fairly common in crevices and empty *B.perforatus* tests between LWN and LWS, *G.dentata* is sometimes to be found in *Laminaria* holdfasts, and *Paragnathia formica* may occur under stones in more estuarine situations. *Cymodoce truncata* occasionally occurs in crevices at low water, and *Janira maculosa* may be found under stones at this level. *Jaera albifrons* is frequent under stones in estuaries, brackish pools, and on beaches with fresh water, and it may also occur in crevices. *Jaera nordmanni* has a similar habitat but extends up to the limit of tidal influences in estuaries. *Idotea granulosa* is occasionally to be found in mid and low level crevices but more frequently on algae, and *I.emarginata*, *I.neglecta*, *I.baltica*, *I.linearis*, and *I.pelagica* may also crop up in crevices and under stones on the lower levels of the shore.

Although not strictly crevice species, *Limnoria lignorum*, *L.quadrupunctata*, and *L.tripunctata* are often to be found burrowing in the wood of jetty and pier piles in sheltered localities, and occasionally pieces of wood containing them may be found wedged in crevices.

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10. NOTES ON SPECIES - 2

The Armadillidiidae

Difficulty has been experienced in identifying this family using Edney's key in which variable characters are used. The following key has been prepared using more reliable characters, many of which are described by Edney but not used. It will be noted that *A.opacum* (Koch) is not included, this is because there is little evidence for considering it a British species. The key is designed to be used with stersoscan photomicrographs or camera lucida drawings, but as these are difficult to reproduce in such a publication some simple diagrams are included. Further reference can be made to the following figures in Edney's Linn. Soc. Synopsis key.

- Fig. 28: For head sculpture terms except "post-scutellar cleft" for which see diag. 4. This feature is best seen with the head of the animal slightly tilted forwards.
- Fig. 30: Except c & d which erroneously shows post-scutellar clefts for *A.pictum* and *A.album*.
- Fig. 31: Except that in e & g a spine is shown on the outer corners of each exopodite, this can occur in any *Armadillidium* species.

KEY TO THE BRITISH SPECIES OF THE FAMILY ARMADILLIDIIDAE

Key to Genera

- 1 - Eye composed of a single large facet; head without post-scutellar carina (diag. 1)
telson truly triangular with a pointed apex. *Eluma*
- Eye compound (many facets); head with post-scutellar carina (diags. 2 & 3);
telson never truly triangular, without a pointed apex . . . *Armadillidium*.

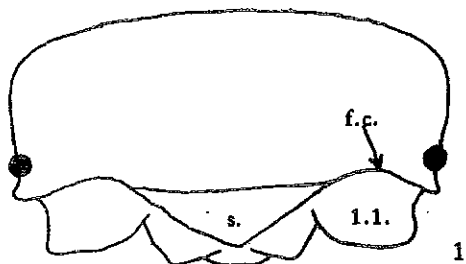
Genus *Eluma*

Single British species: *Eluma purpurascens* Budde-Lund.

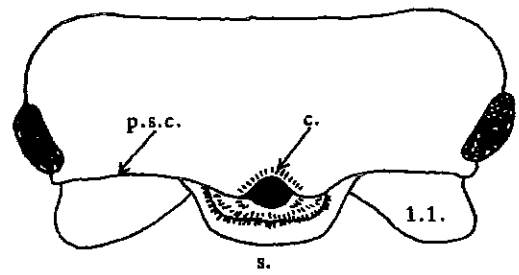
Key to Genus *Armadillidium*

- 1 - Head with frontal carina and post-scutellar carina (diags. 2 & 5); post-scutellar cleft absent 2
 - Head with post-scutellar carina only (diags. 3 & 6); post-scutellar cleft present (diag. 4). 4
- 2 - Dorsum distinctly spinulose; beach littoral habitats only . . . *album* Dollfus
 - Dorsum not spinulose, usually punctured or granular; very rarely on beached. . . 3
- 3 - Post-scutellar carina more pronounced than frontal carina; telson triangular with rounded apex. (diag. 5) *pictum* Brandt
 - Post-scutellar carina much less pronounced than frontal carina; telson trapezoidal with apical angles rounded. (diag. 2) . . . *pulchellum* (Zencker)
- 4 - Scutellum broad but not projecting above level of head (diag' 9); post-scutellar cleft partly obscured by scutellum; telson short and wide with broadly truncate apex. (diags. 3 & 6) *vulgare* (Latreille)
 - Scutellum broad and projecting slightly above level of head (diag. 8); post-scutellar cleft small but not obscured; telson with truncate apex. . . *depressum* Brandt
 - Scutellum narrow and projecting far above level of head (diag. 7); post-scutellar cleft large, forming a deep pit (diag. 4); telson long, narrow and with rounded apex. *nasatum* Budde-Lund

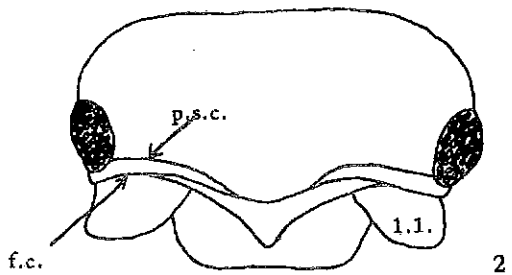
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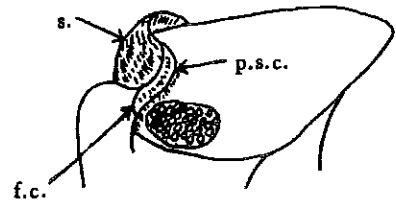
Eluma purpurascens
dorsal view of head (after Gruner 1966).



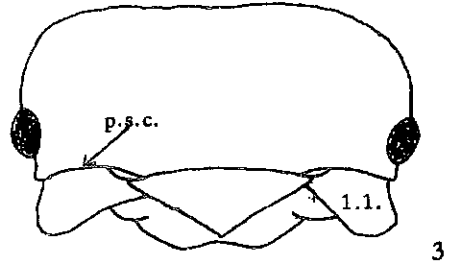
A. nasatum
dorsal view of head (after Gruner 1966).



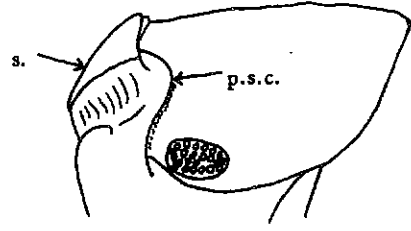
Armadillidium pulchellum
dorsal view of head (after Gruner 1966).



A. pictum
profile of head (after Vandel 1960).

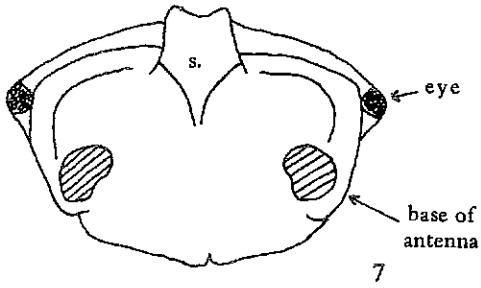


A. vulgare
dorsal view of head (after Gruner 1966).

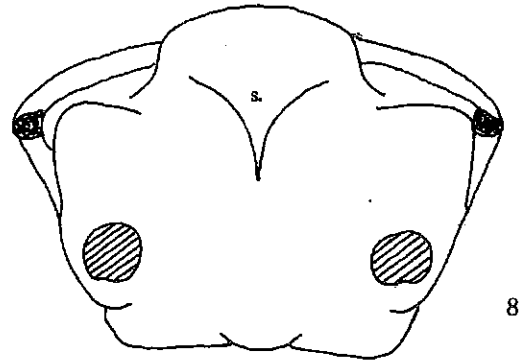


A. vulgare
profile of head (after Vandel 1960).

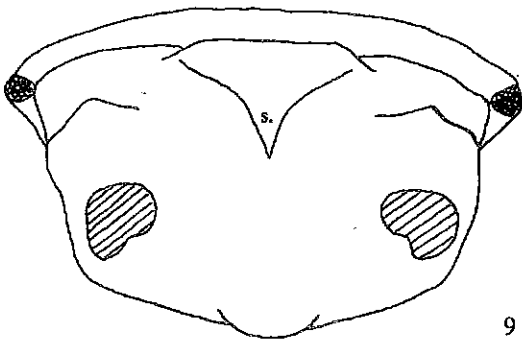
c. = post-scutellar cleft: s. = scutellum: l.l. = lateral lobe: f.c. = frontal carina:
p.s.c. = post-scutellar carina.



A. nasatum
frontal view of head (after Vandel 1962).



A. depressum
frontal view of head (after Vandel 1962).



A. vulgare
frontal view of head (after Vandel 1962).

s. = scutellum