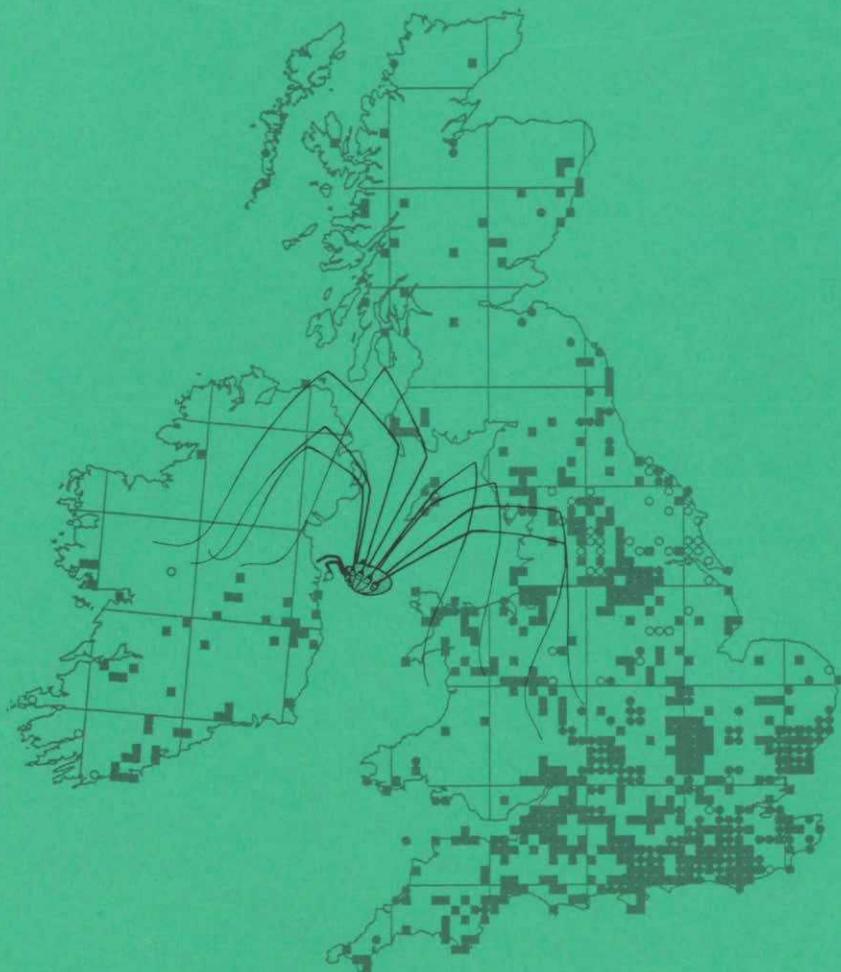


PROVISIONAL ATLAS OF THE
HARVEST-SPIDERS
(ARACHNIDA: OPILIONES)
OF THE BRITISH ISLES

REF
595.43

J H P SANKEY



BIOLOGICAL RECORDS CENTRE

Natural Environment Research Council

Printed in Great Britain by
Henry Ling Ltd at the Dorset Press, Dorchester, Dorset
© NERC Copyright 1988

Published in 1988 by
Institute of Terrestrial Ecology
Merlewood Research Station
GRANGE-OVER-SANDS
Cumbria LA11 6JU

ISBN 1 870393 10 4

The **Institute of Terrestrial Ecology (ITE)** was established in 1973, from the former Nature Conservancy's research stations and staff, joined later by the Institute of Tree Biology and the Culture Centre of Algae and Protozoa. ITE contributes to, and draws upon, the collective knowledge of the 14 sister institutes which make up the **Natural Environment Research Council**, spanning all the environmental sciences.

The Institute studies the factors determining the structure, composition and processes of land and freshwater systems, and of individual plant and animal species. It is developing a sounder scientific basis for predicting and modelling environmental trends arising from natural or man-made change. The results of this research are available to those responsible for the protection, management and wise use of our natural resources.

One quarter of ITE's work is research commissioned by customers, such as the Department of Environment, the European Economic Community, the Nature Conservancy Council and the Overseas Development Administration. The remainder is fundamental research supported by NERC.

ITE's expertise is widely used by international organizations in overseas projects and programmes of research.

The **Biological Records Centre** is operated by ITE, and receives financial support from the **Nature Conservancy Council**. It seeks to help naturalists and research biologists to co-ordinate their efforts in studying the occurrence of plants and animals in the British Isles, and to make the results of these studies available to others.

Biological Records Centre
Institute of Terrestrial Ecology
Monks Wood Experimental Station
Abbots Ripton
HUNTINGDON
Cams PE17 2LS

Mr J H P Sankey
3 Glenrose
Old London Road
Mickleham
DORKING
Surrey RH5 6BY

04873 (Abbots Ripton) 381

PROVISIONAL ATLAS
OF THE
HARVEST-SPIDERS (ARACHNIDA : OPILIONES)
OF THE BRITISH ISLES

By
J H P Sankey

INSTITUTE OF TERRESTRIAL ECOLOGY
LIBRARY SERVICE

EDINBURGH LABORATORIES
BUSH ESTATE, PENICUIK
MIDLOTHIAN EH26 0QB

BIOLOGICAL RECORDS CENTRE

Natural Environment Research Council
Institute of Terrestrial Ecology
Monks Wood Experimental Station
Huntingdon

1988

INSTITUTE OF
TERRESTRIAL
ECOLOGY
LIBRARY
SERVICE

5 DEC 1988

BUSH

88110442

REF
RAM

595.43

CONTENTS

| | Page |
|---|------|
| Foreword | 5 |
| Introduction | 7 |
| Checklist | 8 |
| Introduced species and unconfirmed records | 9 |
| Data set | 10 |
| Sources of records | 11 |
| Acknowledgements | 13 |
| References | 14 |
| Distribution maps | |
| Map 1 Coverage map | 16 |
| Map 2 <i>Nemastoma bimaculatum</i> | 18 |
| Map 3 <i>Mitostoma chrysomelas</i> | 19 |
| Map 4 <i>Trogulus tricarinatus</i> | 20 |
| Map 5 <i>Anelasmaocephalus cambridgei</i> | 21 |
| Map 6 <i>Sabacon viscayanum ramblaianum</i> | 22 |
| Map 7 <i>Homalenotus quadridentatus</i> | 23 |
| Map 8 <i>Oligolophus tridens</i> | 24 |
| Map 9 <i>Oligolophus hanseni</i> | 25 |
| Map 10 <i>Paroligolophus agrestis</i> | 26 |
| Map 11 <i>Paroligolophus meadii</i> | 27 |
| Map 12 <i>Lacinius ephippiatus</i> | 28 |
| Map 13 <i>Odiellus spinosus</i> | 29 |
| Map 14 <i>Mitopus morio</i> | 30 |
| Map 15 <i>Mitopus ericaeus</i> | 31 |
| Map 16 <i>Phalangium opilio</i> | 32 |
| Map 17 <i>Opilio parietinus</i> | 33 |
| Map 18 <i>Opilio saxatilis</i> | 34 |
| Map 19 <i>Megabunus diadema</i> | 35 |
| Map 20 <i>Rilaena triangularis</i> | 36 |
| Map 21 <i>Lophopilio palpinalis</i> | 37 |
| Map 22 <i>Dicranopalpus ramosus</i> | 38 |
| Map 23 <i>Leiobunum rotundum</i> | 39 |
| Map 24 <i>Leiobunum blackwalli</i> | 40 |
| Map 25 <i>Nelima gothica</i> | 41 |
| Species index | 42 |

FOREWORD

When a revised guide to the British harvest-spiders last appeared (Sankey & Savory 1974), the recording scheme benefitted greatly from the upsurge in interest. It is appropriate that this atlas should appear now, coinciding with the new synopsis (Hillyard & Sankey 1988), to provide a base-line from which a second upsurge can progress.

John Sankey's role in generating enthusiasm for the group cannot be overstated. He has identified countless thousands of specimens (including jar after evil-smelling jar of dismembered torsos from ecologists' pitfall traps). By leading courses for the Field Studies Council, he has encouraged naturalists to collect and identify harvest-spiders for themselves, providing the expertise which makes this atlas possible.

In addition to the efforts of individual collectors and recorders, it is pleasing to note the willing co-operation of many local biological records centres in the harvest-spider scheme.

The maps presented here provide a reliable picture of the broad distribution of most species. However, the addition of two species (Sabacon viscayanum ramblaianum and Mitopus ericaeus) to the British list in the last decade, and remarkable extensions of known range, such as the finding of Trogulus tricarinatus in Yorkshire, show that rapid progress is still being made. Future recording will surely produce equally exciting discoveries.

The information on habitat, seasonal occurrence and behaviour contained in the captions to the species maps is a distillation of John Sankey's own wide experience and of the many notes contained in the 6000 record cards received to date. The dual habitat preferences noted for several species (Paroligolophus meadii on heaths and in calcareous grasslands, Trogulus in beech litter and in grassland, and Dicranopalpus ramosus on planted evergreen shrub and on natural sand dunes, for instance) indicate scope for further biological, as well as purely distributional, recording.

Monks Wood Experimental Station
January 1988

Brian C Eversham
Biological Records Centre

INTRODUCTION

The harvestmen or harvest-spiders (Opiliones) are an order of the class Arachnida and are characterized, inter alia, by having abdomen and cephalothorax broadly united so that the body appears to be in one piece, lacking silk glands and often having conspicuously long legs, especially the second pair. The 23 British species represent 21% of the European fauna (about 110 species), and a small fraction of the 3500 or more so far recorded worldwide. All the native British species belong to the sub-order Palpatores, in which the claw on the pedipalp is small or absent. This sub-order is well represented in the Palaearctic region and our species represent six families.

The standard work on the British species is the Synopsis of the British fauna (New Series) no. 4 of the Linnean Society of London (Sankey & Savory 1974), which the present writer is currently revising in collaboration with Paul Hillyard of the British Museum (Natural History). The European harvestmen, including all British species except Mitopus ericaeus, are fully treated by Martens (1978), who also gives a comprehensive bibliography to that date. For details of the recently described M. ericaeus, the paper by Jennings (1982) should be consulted. The specific status of M. ericaeus has recently been questioned; for further details see Hillyard and Sankey (1988). The status of Sabacon viscayanum ramblaianum is discussed by Martens (1982), who reviews the species of this genus. For more recent changes in sub-family status, Shear (1982) gives details of the removal of the sub-families Sclerosomatinae and Leiobuninae from the Phalangiidae, and their being accorded family status; Dicranopalpus ramosus is also removed from the Phalangiidae (sub-family Oligolophinae) to the sub-family Gyantinae of the family Leiobunidae.

English names of plants follow Clapham et al. (1987).

Harvestmen occur in most terrestrial ecosystems. As there is no lipid layer in the integument, they are obliged to remain in relatively moist situations or places where moisture can be obtained. They are normally nocturnal. In their early stages, all species appear to live on or very near the ground in or on which the eggs are laid under stones, etc. Seven of the 23 species remain there for life. Others migrate upwards, some for nocturnal forays, others for longer periods, into rank vegetation or on to branches and trunks of trees and bushes. A few show a preference for urban places and, as adults, may occur on walls, fences, under window ledges and in gardens. Most species mature from about July onwards and those which live above ground usually perish at the onset of frost.

General trends of distribution can be detected, though it is clear from these maps that many lacunae exist. Some of the trends show a broad correlation with experiments carried out to establish the temperature and moisture preferences of certain species, for example Todd (1949); but perhaps the blank areas on the maps will encourage further search in this on-going scheme.

CHECKLIST

Order OPILIONES Sundevall 1833 : Sub-Order Palpatores Thorell 1876

Family **Nemastomatidae** Simon 1879

Nemastoma bimaculatum (Fabricius 1775)
Mitostoma chrysomelas (Hermann 1804)

Family **Trogulidae** Sundevall 1833

Trogulus tricarinatus (Linnaeus 1767)
Anelasmacephalus cambridgei (Westwood 1874)

Family **Sabaconidae** Dresco 1970

Sabacon viscayanum ramblaianum Martens 1983

Family **Scelerosomatidae** Shear 1982

Homalenotus quadridentatus (Cuvier 1795)

Family **Phalangiidae** Simon 1879

Sub-Family Oligolophinae Banks 1893

Oligolophus tridens (C L Koch 1836)
Oligolophus hansenii (Kraepelin 1896)
Paroligolophus agrestis (Meade 1855) = Oligolophus agrestis
Paroligolophus meadii (O Pickard-Cambridge 1890) = Oligolophus meadii
Lacinus ephippiatus (C L Koch 1835)
Odiellus spinosus (Bosc 1792) = Oligolophus spinosus
Mitopus morio (Fabricius 1799)
Mitopus ericaeus Jennings 1982

Sub-Family Phalangiinae Simon 1879

Phalangium opilio Linnaeus 1761
Opilio parietinus (Degeer 1778)
Opilio saxatilis C L Koch 1839
Megabunus diadema (Fabricius 1779)
Rilaena triangularis (Herbst 1799) = Platybunus triangularis
Lophopilio palpinalis (Herbst 1799) = Oligolophus palpinalis

Family **Leiobunidae** Suzuki 1976

Sub-Family Gyantinae Silhavy 1946

Dicranopalpus ramosus (Simon 1909) = Dicranopalpus caudatus

Sub-Family Leiobuninae Banks 1893

Leiobunum rotundum (Latreille 1798)
Leiobunum blackwalli Meade 1861
Nelima gothica Lohmander 1945 = Nelima silvatica

INTRODUCED SPECIES AND UNCONFIRMED RECORDS

Three taxa of harvest-spider reported from Britain are not included in the above checklist, and are not mapped.

Boeorix manducus Thorell, 1889 (Laniatores : Assamiidae)

This is probably a native of Burma, and has been found in a number of hot-houses at the Royal Botanic Gardens, Kew. The species is described and figured by Hillyard (1981).

Leiobunum tisciae Avram, 1968

This species was reported from 'between Leek and Stoke-on-Trent' in Martens (1978). Despite several attempts to re-find it, no further specimens have been taken, and it is therefore not placed on the British Opiliones list.

Leiobunum rotundum (Latreille, 1798): a form from Scotland

A form of L. rotundum of uncertain status is recorded from the wooded valleys of tributaries of the River North Esk, and from Den Finella, near Edzell, Angus. It was previously identified as Nelima fuscifrons (Simon) by the late C F Roewer (Sankey 1953), a taxon which is synonymized under L. rotundum by Martens (1978). Further specimens of leiobunids from riverine woodland in east Scotland would be most welcome.

DATA SET

The complete data set, from which the maps in this atlas were compiled, is held on computer file at the Biological Records Centre. It consists of a total of 11 244 records, each containing information on the location and date of the occurrence of the species concerned, and on the source of the record. Access to these data can be provided by the Biological Records Centre, with records being sorted by species and geographical location (eg vice-county or grid reference).

The data also exist, in manuscript form, on record cards held by the Biological Records Centre.

An analysis of the data by numbers and percentages of records and of 10-km squares for each species, is given in Table 1.

Table 1. Number of 10km squares (also expressed as percentage of total number of 10km squares in which harvest-spiders have been recorded) and number of records (also expressed as a percentage of total records). Species are ranked according to the number of 10km squares in which they have been recorded

| | 10km squares | | Records | |
|---------------------------------------|--------------|------------------|--------------|---------|
| | Number | % total coverage | Number | % total |
| <i>Mitopus morio</i> | 790 | 52.4 | 1436 | 12.8 |
| <i>Paroligolophus agrestis</i> | 778 | 51.6 | 1414 | 12.6 |
| <i>Nemastoma bimaculatum</i> | 753 | 49.9 | 1407 | 12.5 |
| <i>Leiobunum rotundum</i> | 677 | 44.9 | 1023 | 9.1 |
| <i>Phalangium opilio</i> | 613 | 40.6 | 952 | 8.5 |
| <i>Oligolophus tridens</i> | 500 | 33.2 | 703 | 6.2 |
| <i>Rilaena triangularis</i> | 441 | 29.2 | 798 | 7.1 |
| <i>Leiobunum blackwalli</i> | 437 | 29.0 | 605 | 5.4 |
| <i>Lacinius ephippiatus</i> | 277 | 18.4 | 396 | 3.5 |
| <i>Megabunus diadema</i> | 257 | 17.0 | 353 | 3.1 |
| <i>Opilio parietinus</i> | 237 | 15.7 | 325 | 2.9 |
| <i>Opilio saxatilis</i> | 235 | 15.6 | 329 | 2.9 |
| <i>Mitostoma chrysomelas</i> | 222 | 14.7 | 344 | 3.1 |
| <i>Lophopilio palpinalis</i> | 196 | 13.0 | 269 | 2.4 |
| <i>Oligolophus hanseni</i> | 113 | 7.5 | 155 | 1.4 |
| <i>Nelima gothica</i> | 104 | 6.9 | 141 | 1.2 |
| <i>Anelasmacephalus cambridgei</i> | 82 | 5.4 | 113 | 1.0 |
| <i>Homalenotus quadridentatus</i> | 68 | 4.5 | 101 | 0.9 |
| <i>Odiellus spinosus</i> | 68 | 4.5 | 100 | 0.9 |
| <i>Paroligolophus meadii</i> | 54 | 3.6 | 73 | 0.6 |
| <i>Dicranopalpus ramosus</i> | 51 | 3.4 | 96 | 0.8 |
| <i>Trogulus tricarinatus</i> | 30 | 2.0 | 52 | 0.5 |
| <i>Mitopus ericaeus</i> | 25 | 1.7 | 52 | 0.5 |
| <i>Sabacon viscayanum ramblaianum</i> | 3 | 0.2 | 7 | 0.1 |
| All species | 1508 | | 11244 | |

SOURCES OF RECORDS

Records have been compiled from a large number of sources and from many people.

Although much of the early literature is based on doubtful identifications and is difficult to interpret, records from a few outstanding authors have been abstracted, largely by C A Howes. In northern England, valuable early records come from W Falconer, J E Hull and A R Jackson. In Ireland, the contribution of G H Carpenter and D R Pack-Beresford deserves mention. The records of W S Bristowe range very widely, but his survey of off-shore islands has been particularly useful.

Modern records have largely come through the recording scheme, from active opilionologists and from specialists in other groups of invertebrates who have passed on harvest-spiders for identification.

The following individual recorders have contributed to the Opliones recording scheme:

| | | |
|-------------------------|------------------|------------------|
| Abbot, R H R | Crocker, J | Geddes, Mrs C |
| Adams, J | Cross, I | George, R S |
| Alexander, K N A | Crossley, R | Goddard, D G |
| Arnold, Mrs V | Cuthbertson, D R | Goodall, D W |
| Askew, R R | Daniels, R | Goodall, M A |
| Baldwin, Miss S I | Davey, S R | Goodier, R |
| Barber, A D | Davidson, M B | Greenwood, B D |
| Barnish, Ms D | Davies, L | Greenwood, E F |
| Bathe, G | Davis, B N K | Groome, R |
| Bell, A S | Dawson, J E | Guntrip, D W |
| Blatchley, Mrs I | Dawson, J G | Haes, E C M |
| Bloor, K P | Dawson, N | Halfpenny, G |
| Broadbent, E | Delaney, M J | Hancock, E G |
| Broadbent, J | Denman, D | Hancock, J |
| Brown, D G | Disney, R H L | Harding, P T |
| Bruce, C | Dolling, Mrs M H | Harris, J I |
| Buckley, J | Dony, Mrs C M | Hawley, R |
| Butterfield, J E L | Doogue, D | Hewitt, S M |
| Campbell, J M | Duffey, E | Hicks, P |
| Carruthers, S | Eccles, T E | Hider, M |
| Carter, H H | Elton, C | Hill, K |
| Catley, K | Ely, W A | Hillyard, P |
| Cawley, M | Emberson, R M | Hitch, Ms P A |
| Chatfield, J | Evans, I M | Hopkin, S P |
| Chinery, M | Eversham, B C | Hopkins, I J |
| Clarke, H N | Farino, Ms T | Horsfield, D |
| Clements, D | Felton, C | Hughes, K |
| Clemons, L | Felton, S | Hyman, P |
| Cloudsley-Thompson, J L | Finch, G L | Jackson, B |
| Cocks, W P | Finch, N A | Jackson, E |
| Cokendolpher, J C | Fincher, F | Jackson, N C S |
| Comont, J | Fogan, Mrs M J | Johnson, C |
| Cooper, A E | Forman, B | Jones, D |
| Cooper, P F | Poster, N H | Jones, P E |
| Corkhill, P | Francis, P M A | Jones, R |
| Coulson, J C | Fussey, G D | Jones, R E |
| Cowdon, D | Garrad, Ms L S | Jones-Walters, L |
| Cowley, J | Garside, A | Judd, S |

| | | |
|------------------|------------------|----------------|
| Kearns, H | Ormerod, P | Southern, R |
| Keay, A N | Owen, D | Streete, D |
| Kennedy, R J | Owen, J | Stroud, D |
| Kidd, L | Parker, A | Stroud, J |
| Kirby, P | Philp, B | Stubbs, A E |
| Lack, A | Philp, E G | Sutton, D |
| Lavery, A | Pressland, K O | Swann, P |
| Lee, P | Quilter, J H | Taplin, J |
| Leighton, R | Randall, A | Teagle, W G |
| Leney, F M | Rands, D G | Thomas, T F |
| Lewis, J | Rands, Mrs E B | Toplis, M |
| Lloyd-Evans, L | Rapp, W F | Turk, F A |
| Loxton, R G | Read, H | Turk, Mrs S M |
| Mackie, D W | Redgate, N D | Tynan, A M |
| Matthews, M J | Reid, A W | Usher, M B |
| Maude, D | Ribolla, D | Wallace, I D |
| Mawdesley, T | Richardson, D T | Warburton, C |
| McCann, A | Richardson, J | Ward, L K |
| McMillan, N F | Riley, T | Watt, K R |
| Meiklejohn, J W | Rowland, Mrs K M | Webb, N R |
| Merrett, C | Rundle, A J | Welch, R C |
| Merrett, P | Sander, J I | Weston, M R |
| Moran, S A | Sanderson, J M | Whatmough, G W |
| Mothersill, Ms C | Side, K C | Wheatley, V A |
| Mousley, J | Skidmore, P | Whiteley, D |
| Murgatroyd, J H | Slawson, G C | Wilkinson, D C |
| Murphy, D | Smith, A | Wilkinson, S A |
| Murphy, M D | Smith, C J | Williams, L |
| Nau, B S | Smith, F | Withers, P |
| Nellist, D R | Smithers, P | Yalden, D W |
| Norris, A | Softley, R A | |

A number of local biological records centres have made their data available to me, and where appropriate have enabled me to examine specimens in support of records:

Cornish Biological Records Unit, Redruth
 Bristol Region Environmental Records Centre
 Dorset Environmental Records Centre, Dorchester
 Wiltshire BRC, Devizes
 Hampshire BRC, Winchester
 Berkshire BRC, Reading
 Buckingham County Museum, Aylesbury
 City Museum, St Albans
 Isle of Wight BRC, Sandown
 Kent Biological Archives and Records Centre, Maidstone
 Oxfordshire Biological Recording Scheme, Woodstock
 North Herts BRC, Baldock
 Colchester and Essex Museum, Colchester
 Warwickshire BRC, Warwick
 Suffolk BRC, Ipswich
 Passmore Edwards Museum, Stratford, London
 Peterborough City Museum and Art Gallery
 Leicester BRC
 Staffordshire BRC, Stoke-on-Trent
 North West Biological Field Data Bank, Liverpool
 Clifton Park Museum, Rotherham

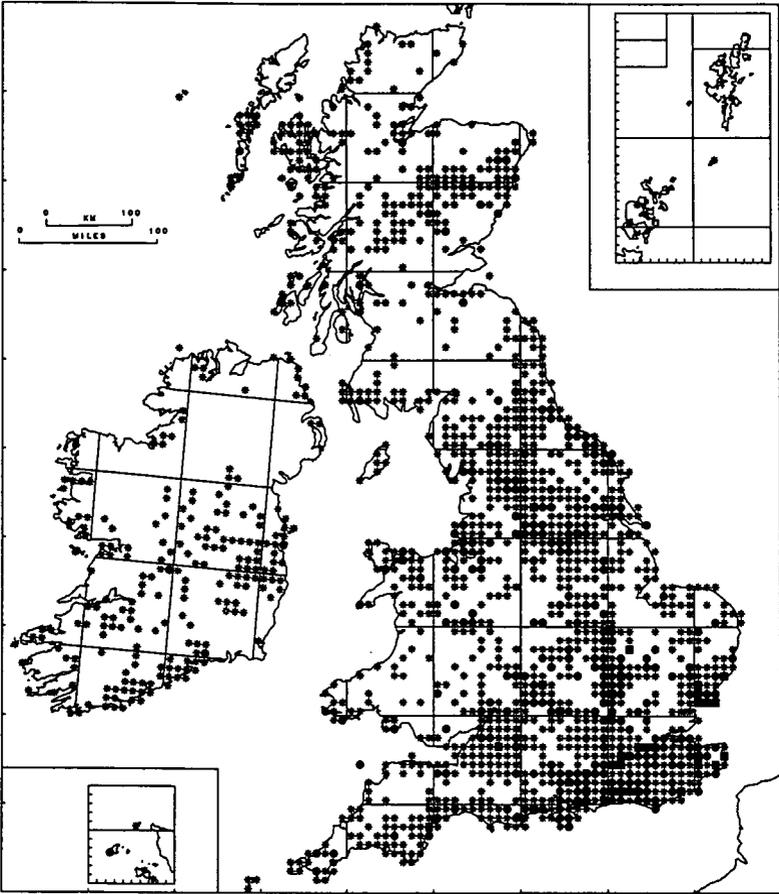
Biological Data Bank, West Yorkshire Region, Keighley
Derby Museum and Art Gallery
Shropshire BRC, Ludlow
Bolton Museum and Art Gallery
BRC, Doncaster Museum and Art Gallery
Hancock Museum, Newcastle upon Tyne
Falkirk Museums
Dundee Museum BRC
Renfrewshire BRC, Paisley
Montrose Museum and Art Gallery
Grampian BRC, University of Aberdeen
Inverness Museum and Art Gallery
Perth and Kinross Museum, Perth

ACKNOWLEDGEMENTS

I am most grateful to all the recorders listed above for their enthusiastic support to the Opiliones recording scheme, and to the museum curators and keepers of local biological records centres, who have made specimens and records available to the scheme. For several years, Colin A Howes (Doncaster Museum and Art Gallery) acted as Opiliones recorder for the British Arachnological Society. He has kindly made available all the records he accrued in this capacity, and the results of his own literature abstractions. Paul Hillyard, British Museum (Natural History), has accorded me much helpful and friendly discussion, and I am also grateful to Paul Harding and Brian Eversham for their continued help and encouragement in the scheme.

REFERENCES

- Clapham, A.R., Tutin, T.G. & Moore, D.M. 1987. Flora of the British Isles. 3rd ed. Cambridge: Cambridge University Press.
- Jennings, A.L. 1982. A new species of harvestman of the genus Mitopus in Britain. J. Zool., **198**, 1-14.
- Hillyard, P. 1981. Coleosoma floridanum Banks (Araneae : Theridiidae) and Boeorix manducus Thorell (Opiliones : Assamiidae): two tropical arachnids in botanical gardens. Secretary's Newsl., Br. Arachnol. Soc., no. 31, 3-4.
- Hillyard, P.D. & Sankey, J.H.P. 1988. Harvestmen. 2nd ed. Synopses of the British Fauna (New Series) no. 4. London: Brill for the Linnean Society.
- Martens, J. 1978. Weberknechte, Opiliones (Spinnentieren : Arachnida). Tierwelt Dtl., **64**, 1-464. Jena: Gustav Fischer.
- Martens, J. 1982. Europäische Arten der Gattung Sabacon Simon 1879. (Arachnida : Opiliones : Sabaconidae). Senckenberg. biol., **63**, 265-296.
- Sankey, J.H.P. 1953. Further records of British harvest-spiders, with a note on Nelima fuscifrons (Simon), possibly new to Britain. Entomologist, **86**, 116-117.
- Sankey, J.H.P. & Savory, T. 1974. British harvestmen Arachnida : Opiliones. Synopses of the British Fauna (New Series) no. 4. London: Academic Press for the Linnean Society.
- Shear, W.A. 1982. Opiliones. In: Synopsis and classification of living organisms, edited by S.P. Parker, vol. 2, 104-110. New York: McGraw-Hill.
- Todd, V. 1949. The habits and ecology of the British harvestmen (Arachnida : Opiliones), with special reference to those of the Oxford district. J. Anim. Ecol., **18**, 209-229.



Map 1 Coverage map

Map 1 Coverage map

- * = 1-7 species recorded
- = 8-15 species recorded
- = 16 or more species recorded

Although many unrecorded areas remain, especially in Ireland, general patterns are clear. There is a decrease in the diversity of the British harvest-spider fauna northward. From the species maps, this is to be expected, as several species are predominantly southern in range, whereas only two (Oligolophus hanseni and the recently described Mitopus ericaeus) are more frequent in northern Britain than in the south.

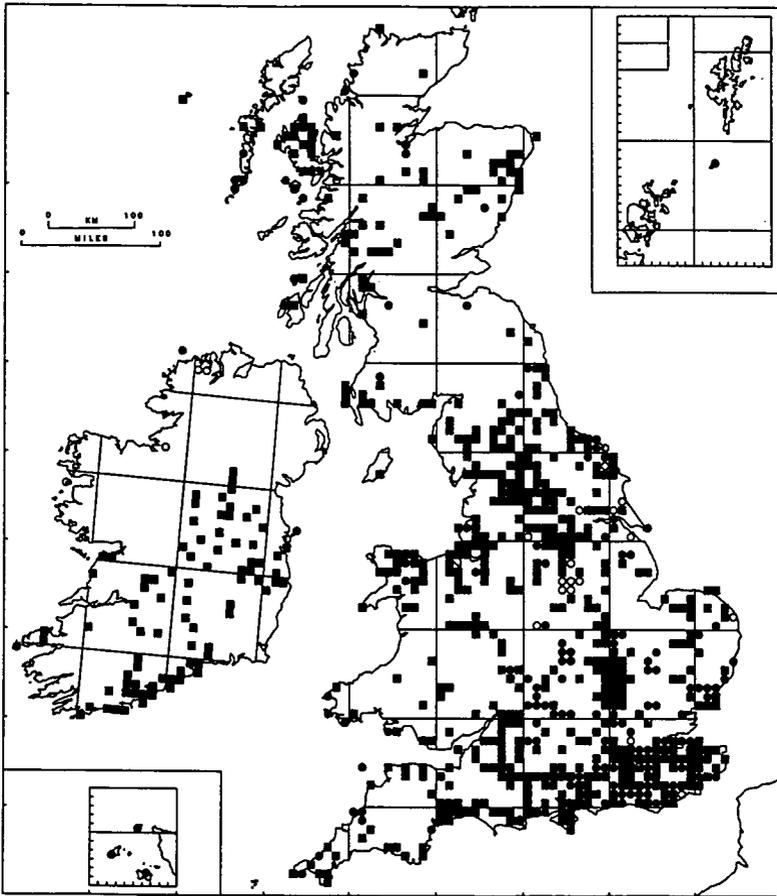
The distribution of squares in which high numbers of species have been recorded is interesting. In the south of England, these squares lie mainly on calcareous soils, the chalk of the North and South Downs being apparent. The reason may be that several species, such as the trogulids and Homalenotus are most often found there. Indeed, it is only in sites where calcareous grassland and woodland meet that over 20 species of harvest-spider are regularly found.

The few squares in the north which exceed 15 species are nearly all areas of mature sand dunes or lowland sandy heath, where outlying populations of such species as Paroligolophus meadii, Opilio saxatilis and Nelima gothica have been found.

Maps 2-25 Species maps

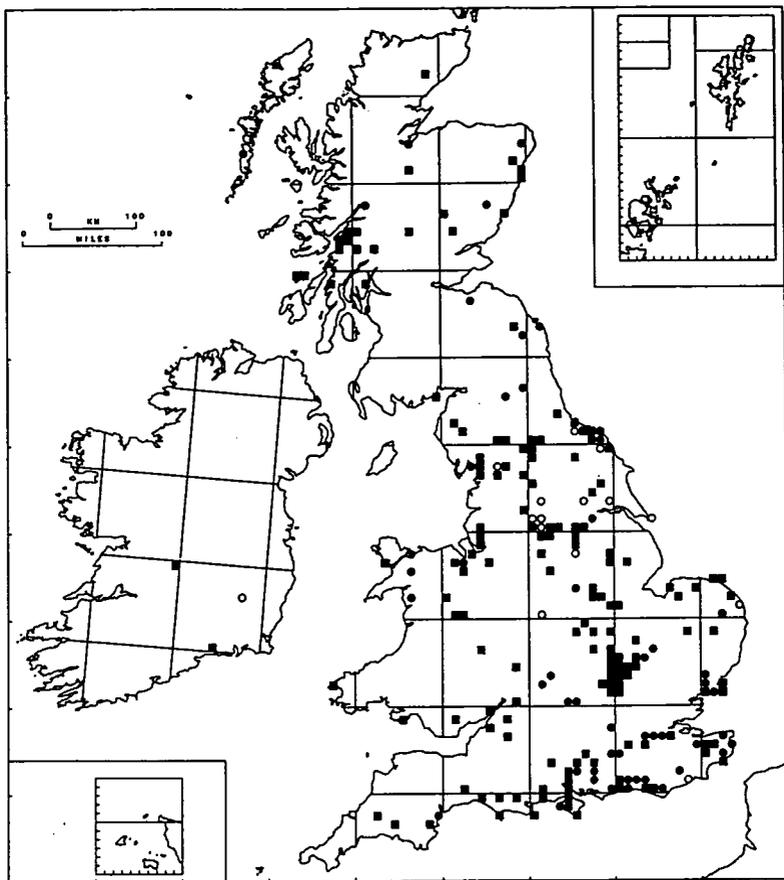
The three symbols show the date of the most recent record of a species from a 10km square:

- = up to 1929
- = 1930-1969
- = 1970-1985



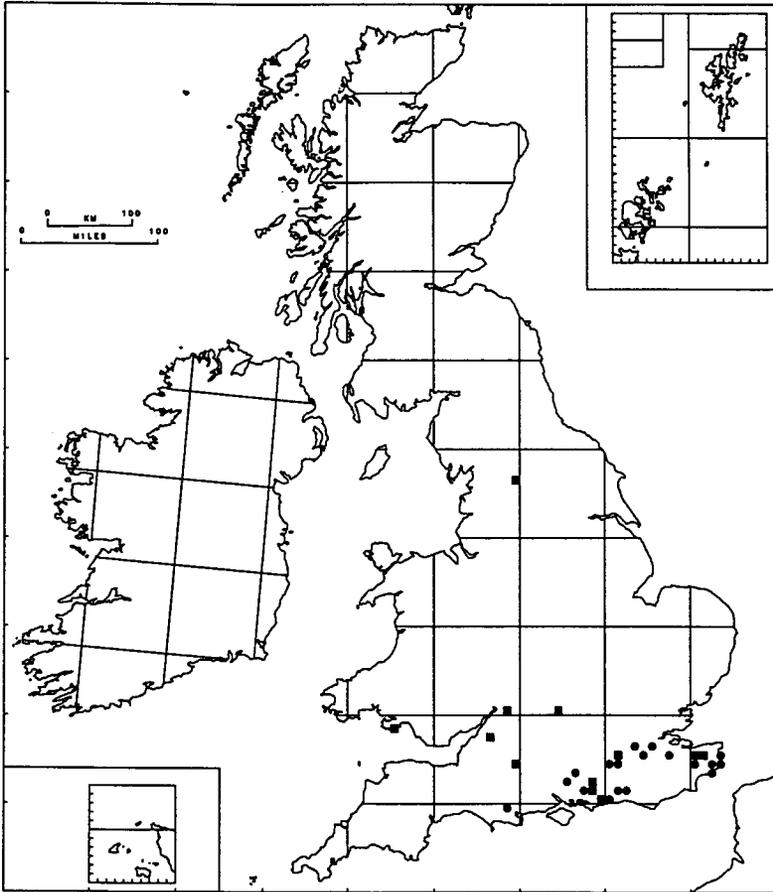
Map 2 *Nemastoma bimaculatum* (Fabricius, 1775)

Entirely ground living. Widespread and common in deciduous woodland litter, in loose moss, and also in rank grassland. Especially common on limestone soils. Also under logs, stones, etc. in gardens and cultivated areas. Adults have been recorded in all months. Known from Scandinavia, Lofoten Islands and in Iceland and Faeroes, but unrecorded east of western Germany and France.



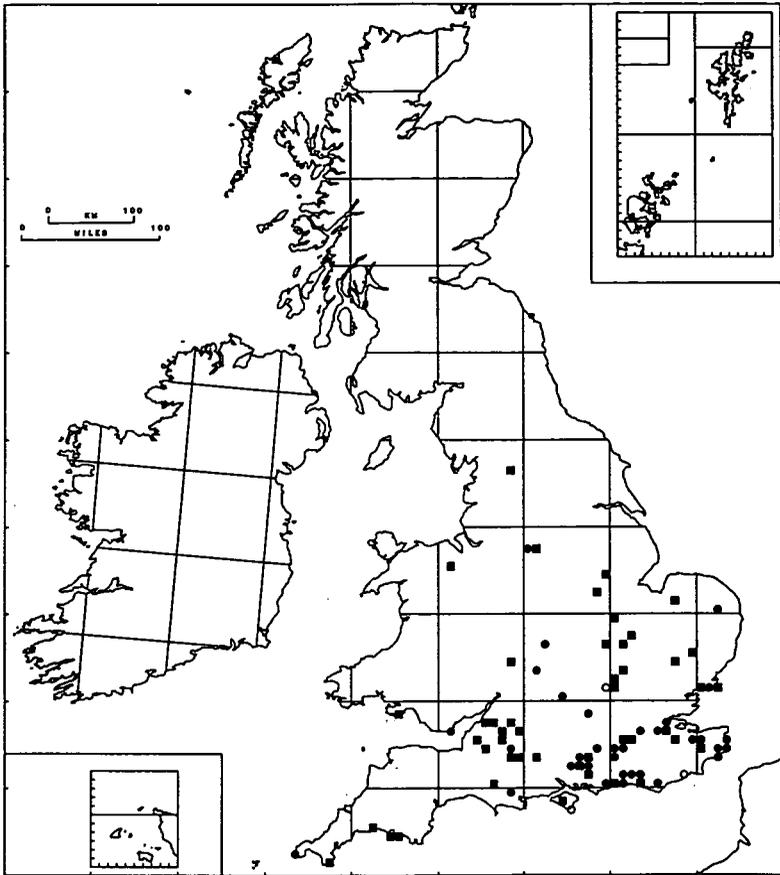
Map 3 *Mitostoma chrysomelas* (Hermann, 1804)

Entirely ground living, mainly in rank grassland and rough vegetation such as nettle beds; under pieces of rock and wood. Widespread but less common than *N. bimaculatum*. Adults have been recorded in all months except February and March. Its known distribution abroad includes most of Europe (except Iberia) and in Lithuania and the Ukraine.



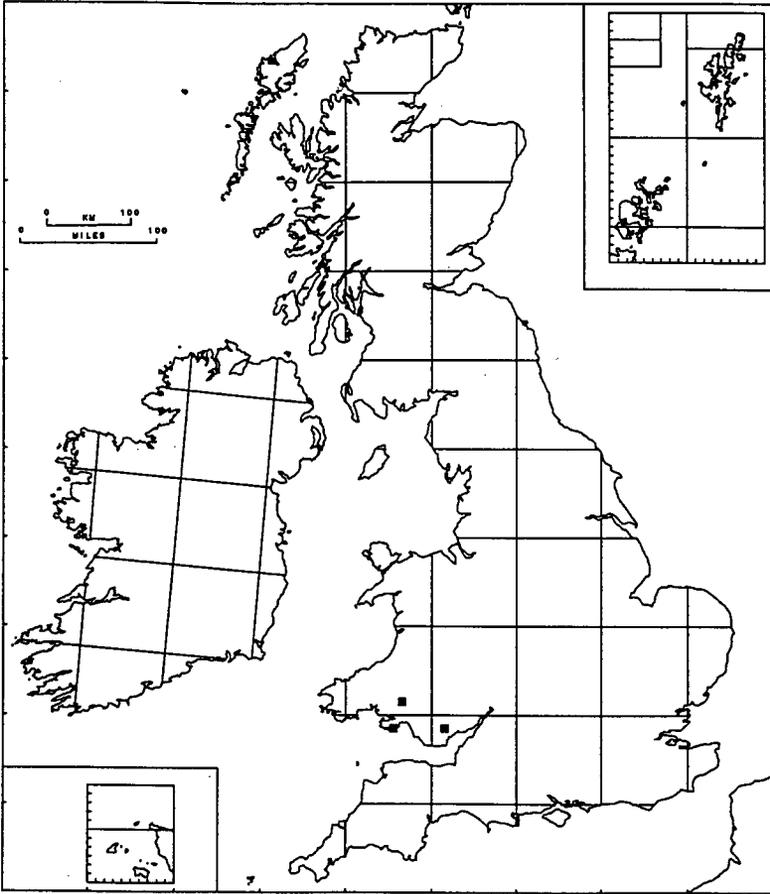
Map 4 *Trogulus tricarinatus* (Linnaeus, 1767)

Entirely ground living and recorded in Britain only from limestone soils, especially on chalk. A woodland species, often in beech woods with a fairly well-developed field layer with loose moss, but also in scrub and grassland and under stones, pieces of wood, etc, in chalk quarries and elsewhere. This species is probably very under-recorded. It is known from central Europe south-eastwards to the Black Sea, but is unrecorded from Iberia, southern Italy and Scandinavia.



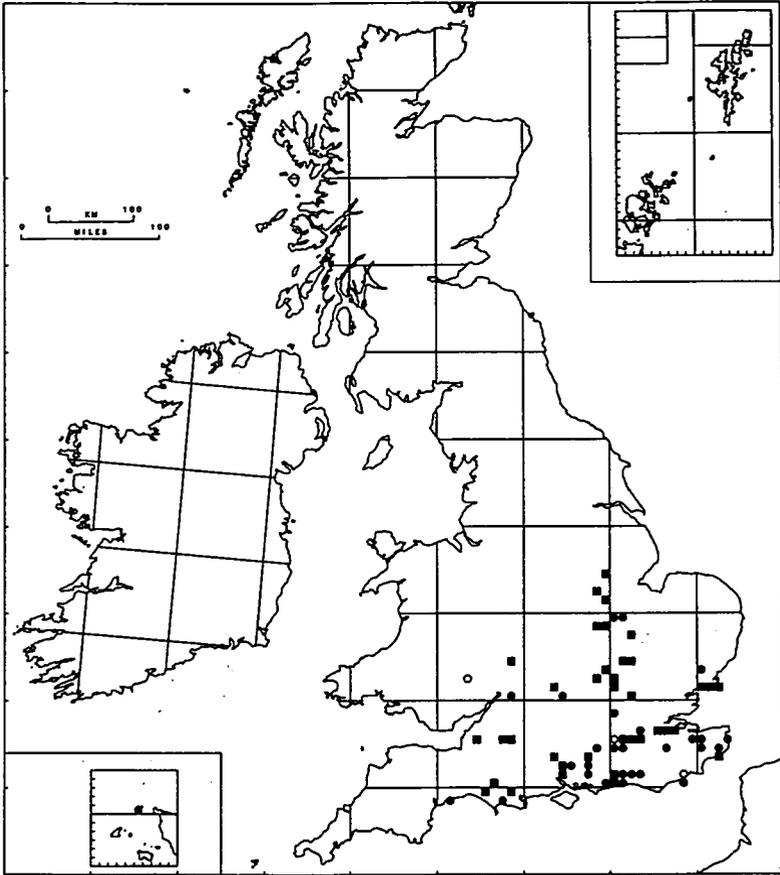
Map 5 *Anelasmaocephalus cambridgei* (Westwood, 1874)

Found in mixed deciduous litter and under moss, mainly in woods on limestone soils; also under logs and stones and is sometimes frequent in well-developed chalk grassland. Entirely ground living. Adults have been recorded in all months. Essentially a western European species, but not recorded south of northern Spain or east of Switzerland and the river Elbe, or in Scandinavia.



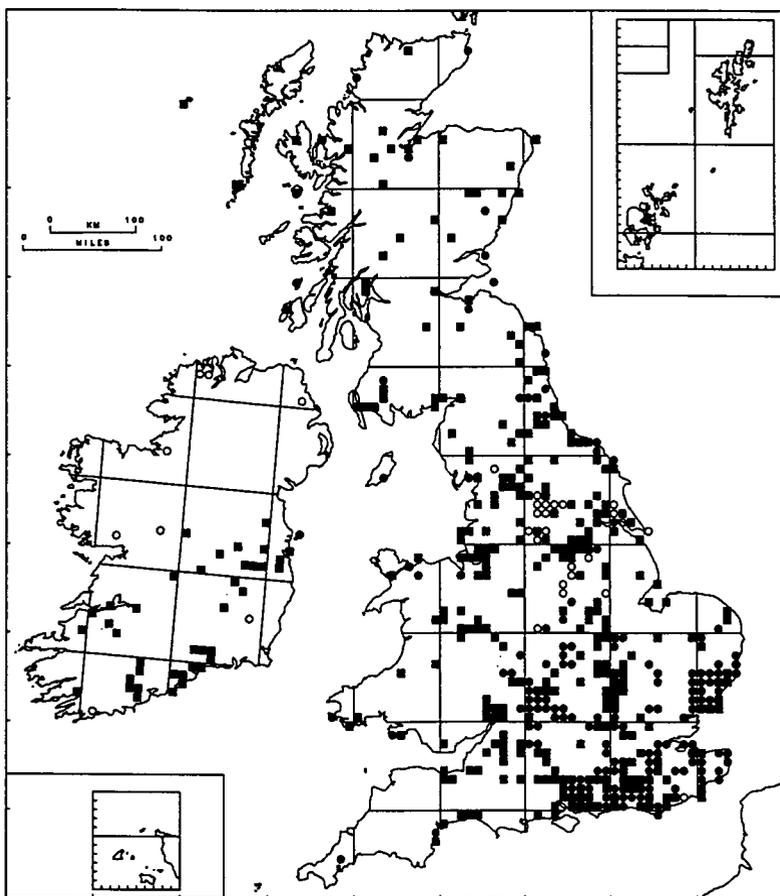
Map 6 Sabacon viscayanum ramblaianum Martens, 1983

A ground living species of damp woodlands, in litter and under logs. It is known only from five localities in south Wales, but search would probably reveal other locations. Adults have been recorded in September and October. Abroad it is recorded from disjunct localities in the region of the Pyrenees.



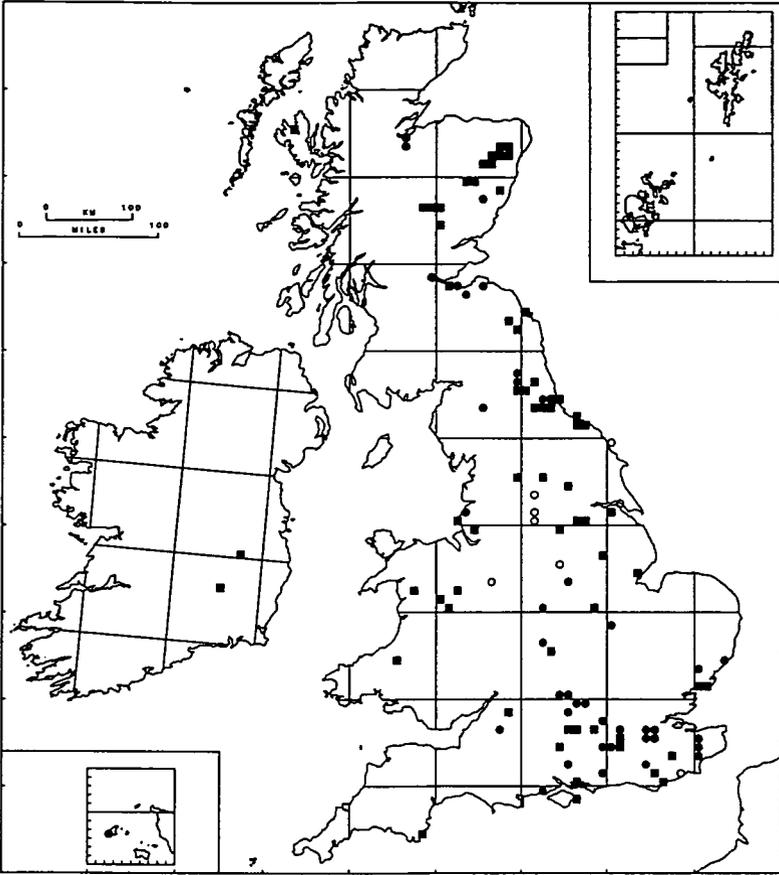
Map 7 Homalenotus quadridentatus (Cuvier, 1795)

A ground living species; most records are from limestone soils, especially on chalk. Fairly common in beech and other deciduous woodlands, grassy scrub and open chalk grassland; also in loose moss and under stones, etc. Adults have been recorded in all months. Known from western Europe, Holland southwards and in Iberia and the Azores. Not recorded east of Switzerland.



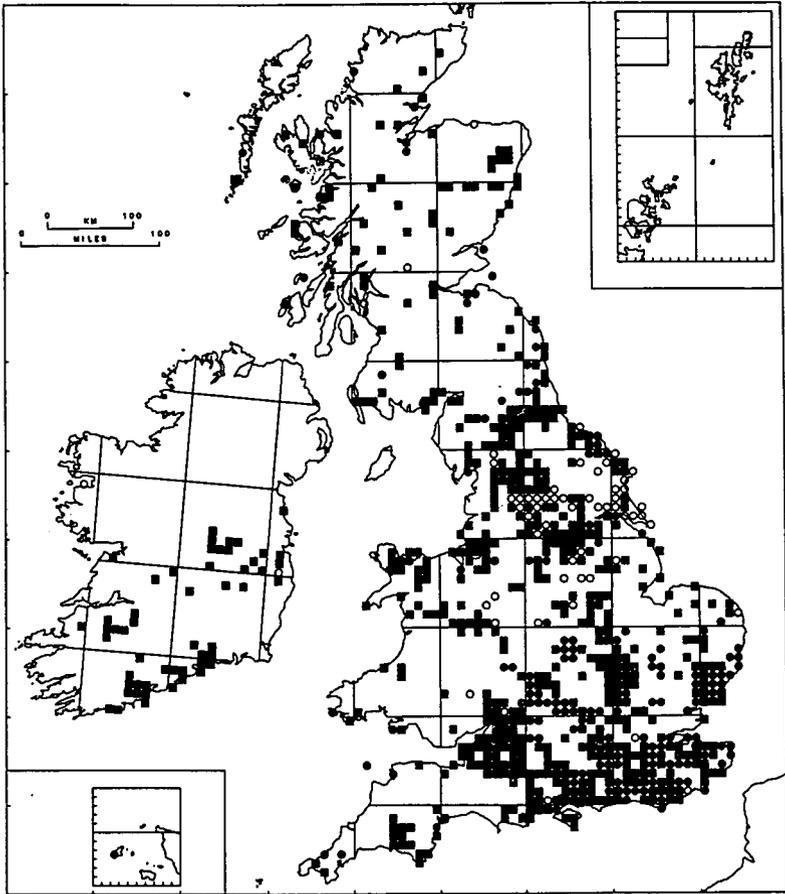
Map 8 *Oligolophus tridens* (C L Koch, 1836)

Widespread and common almost everywhere, especially in woodland field layers; less common in open grassland, heaths and dunes. This species also ascends low branches of trees and bushes; the young stages are ground living. Adults occur from the end of July to about December. It is widespread in central Europe; recorded from Scandinavia, Finland and Iceland and eastwards to Russia: it is not recorded from Greece or Iberia. Introduced into North America.



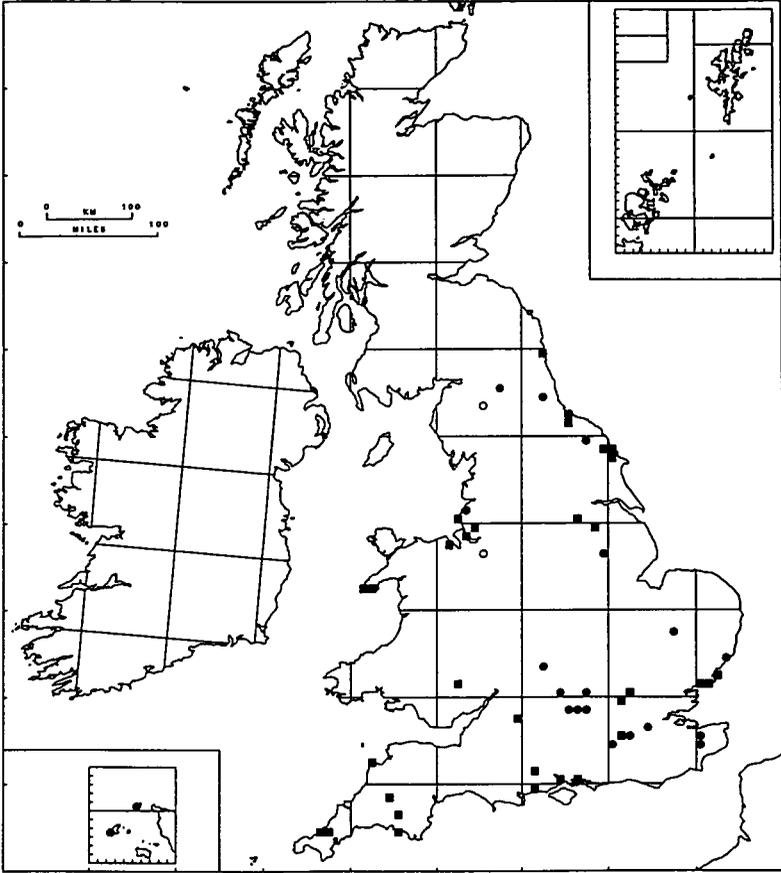
Map 9 Oligolophus hanseni (Kraepelin, 1896)

A widespread but uncommon species occurring as adults on branches of trees, often in association with Paroligolophus agrestis, and on bushes. It shows a preference for Scots pine and appears to be commoner in the north of Britain. The young stages live on the ground. Adults are recorded from August to December. Recorded abroad from north Spain to south Scandinavia and to eastern Europe.



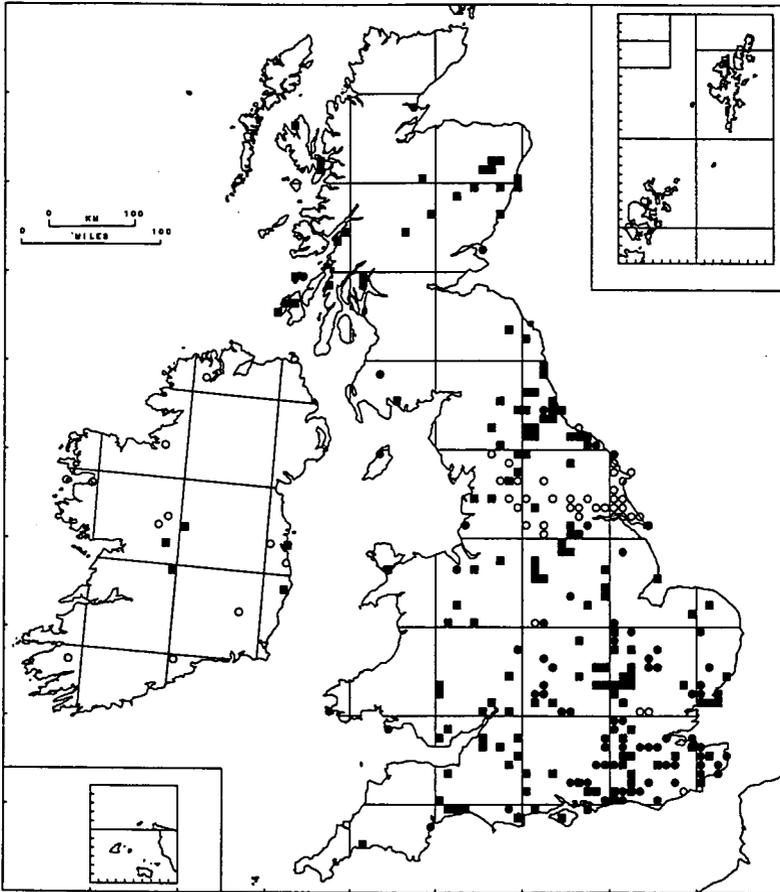
Map 10 *Paroligolophus agrestis* (Meade, 1855)

A widespread and often abundant species in woods, scrub, grassland, marshes, mature dunes and heathland edges; also in cultivated places and in gardens and parks. Young occur on the ground; adults climb amongst low vegetation and up to several metres on branches of deciduous and coniferous trees. Adults appear from July onwards; specimens have been recorded surviving until early February in sheltered places. Recorded from many places in Europe: central Spain to Scandinavia and eastwards to Poland. Introduced into North America.



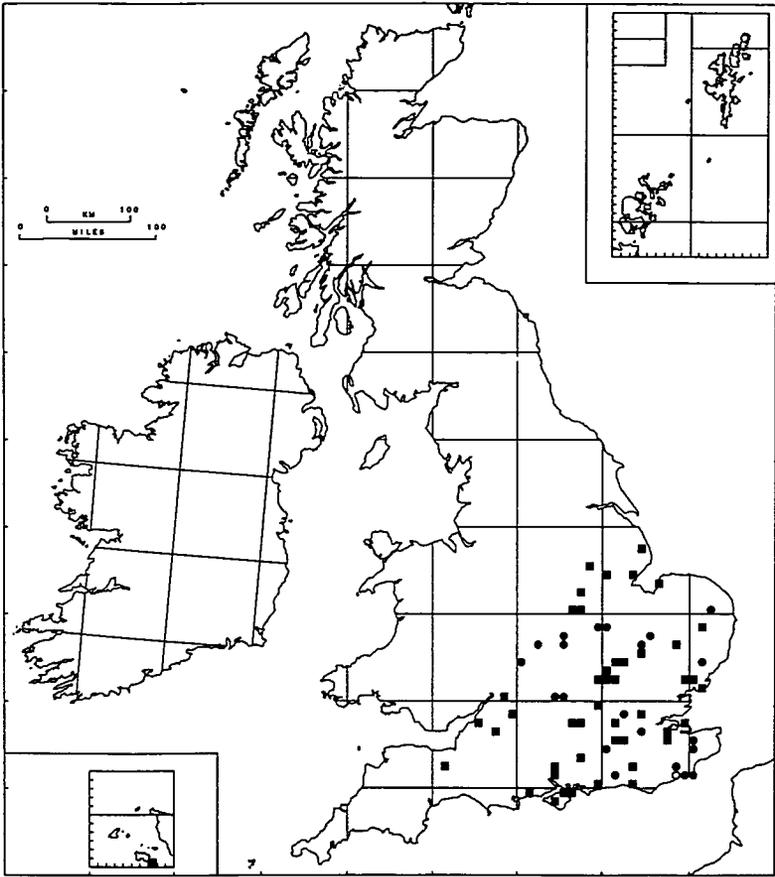
Map 11 *Paroligolophus meadii* (O Pickard-Cambridge, 1890)

This small species appears to be local and difficult to find, but fairly widespread. It lives on the ground in dryish places such as dunes, heaths (not usually in large stands of ling) and chalk grassland; also woodland edges and hedgebanks. Adults have been recorded from mid-July to December. On the continent, recorded only from north Spain and the west coast of France.



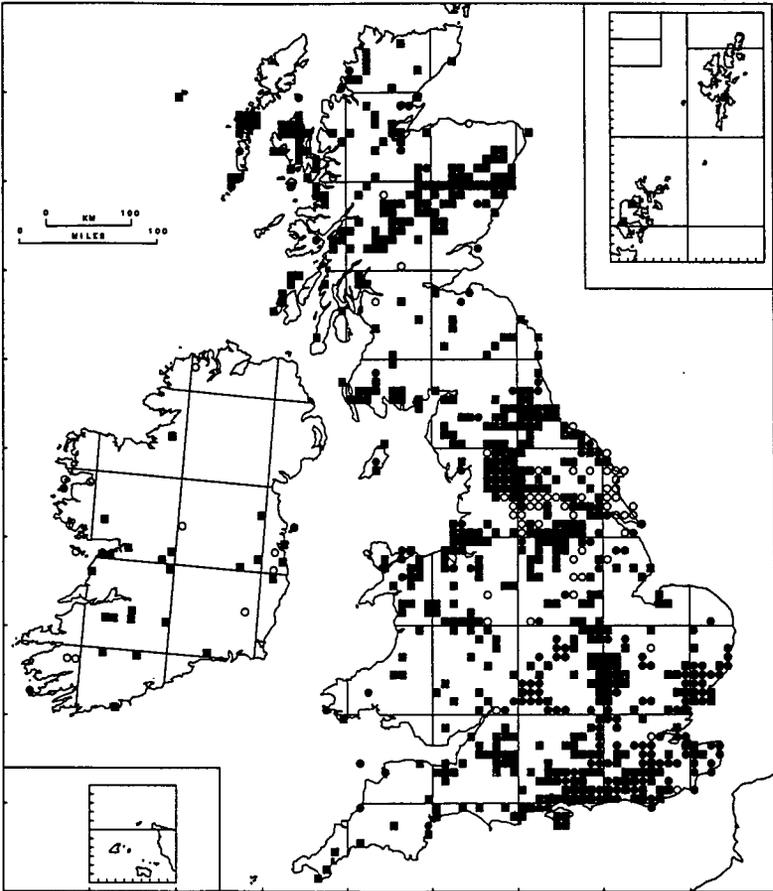
Map 12 *Lacinius ephippiatus* (C L Koch, 1835)

An inhabitant of low vegetation in woods, marshy places and moorlands. This species appears to avoid cultivated areas. Mature from May to September. The young stages live on the ground. Recorded over much of Europe eastwards to Rumania, but not from Iberia.



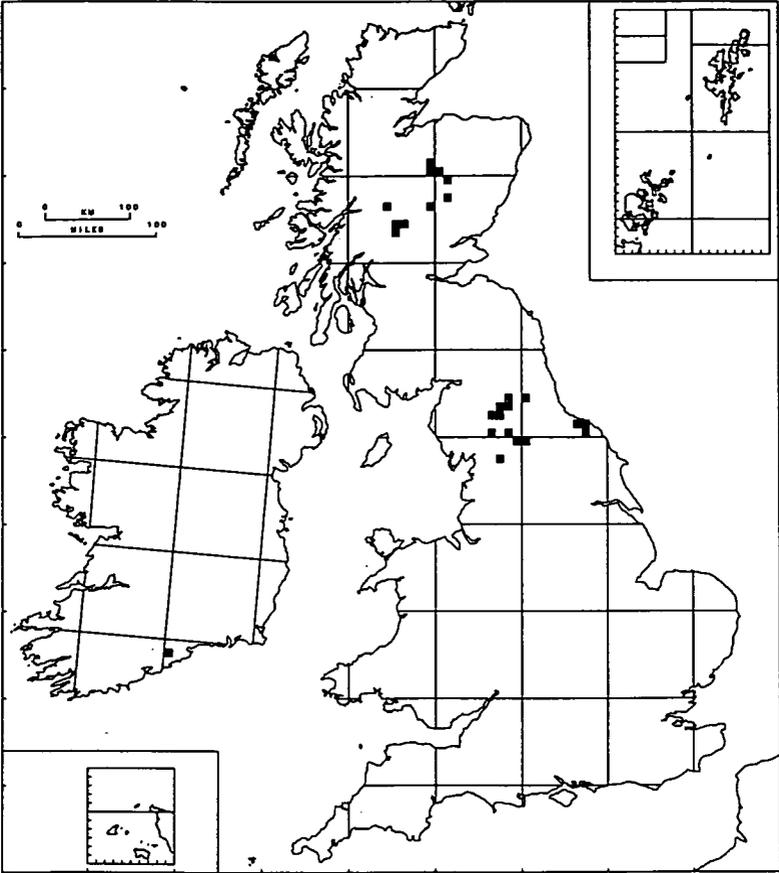
Map 13 *Odiellus spinosus* (Bosc, 1792)

The largest British harvestman. Inhabits relatively dry and warm places, especially on walls, fences, and under window ledges in urban situations. Occasionally on bushes and sometimes on the ground; it may be taken in pitfall traps in gardens. Adults appear from July to the frosts. This warmth-loving species is not recorded on the continent north of Holland. It is known from north Spain, France, Corsica and Italy.



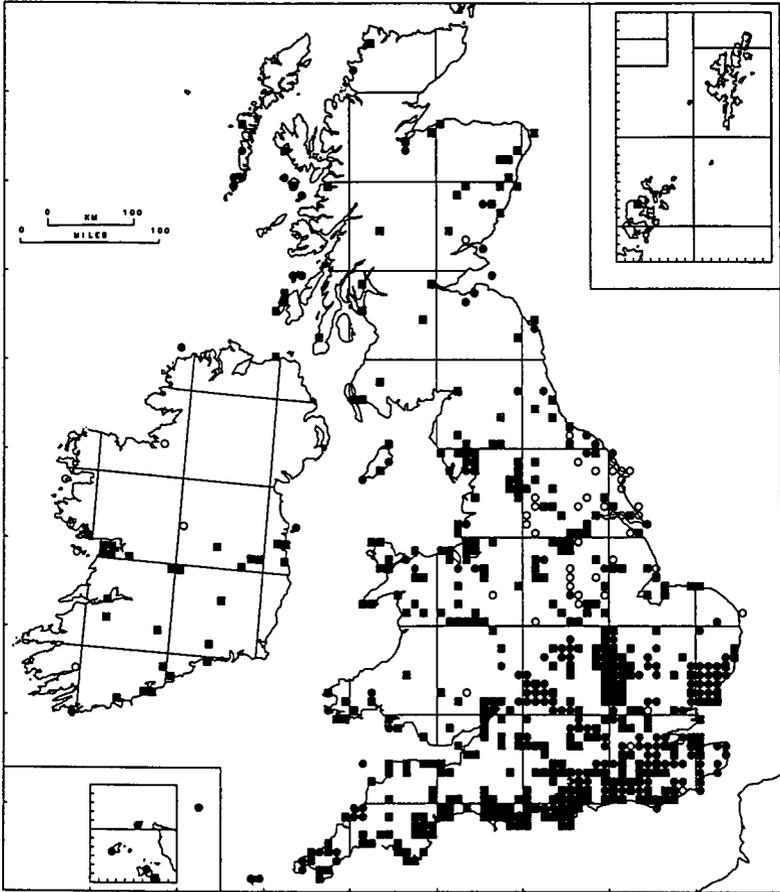
Map 14 Mitopus morio (Fabricius, 1799)

One of our most abundant species, maturing from about the end of July onwards to the frosts. Though mainly a woodland species, occurring on branches up to several metres, it is also present in rank vegetation such as nettle beds and hedgebanks; it may occur in considerable numbers on moorland and damp meadows and is often found in pitfall traps. Widespread throughout Europe and north Africa; Greenland, Iceland, Spitzbergen, often in mountains; eastwards through Asia north of the Himalayas into Japan; also in North America.



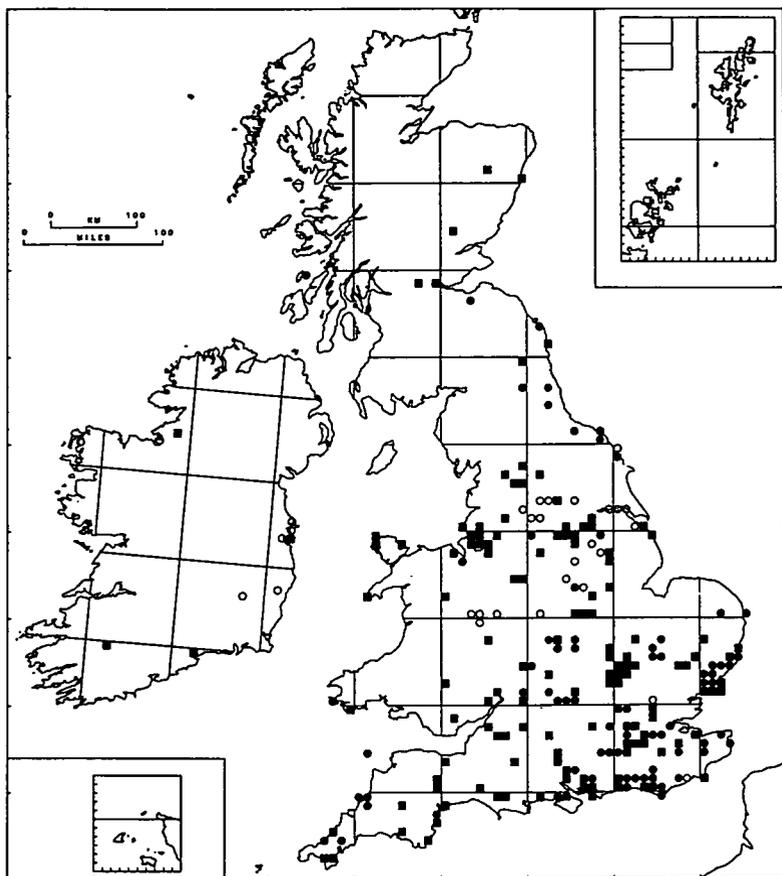
Map 15 Mitopus ericaeus Jennings 1982

A harvestman of moorlands above about 250 metres in northern England and Scotland, but possibly also at lower altitudes in Ireland; it occurs chiefly amongst heather. The distribution of this recently described species is uncertain owing to confusion with M. morio. The discovery of apparently intermediate specimens has caused its specific status to be questioned. (See Hillyard and Sankey (1988) for further details.) It is said to mature before M. morio - July to August. A report from the Pyrenees is unconfirmed.



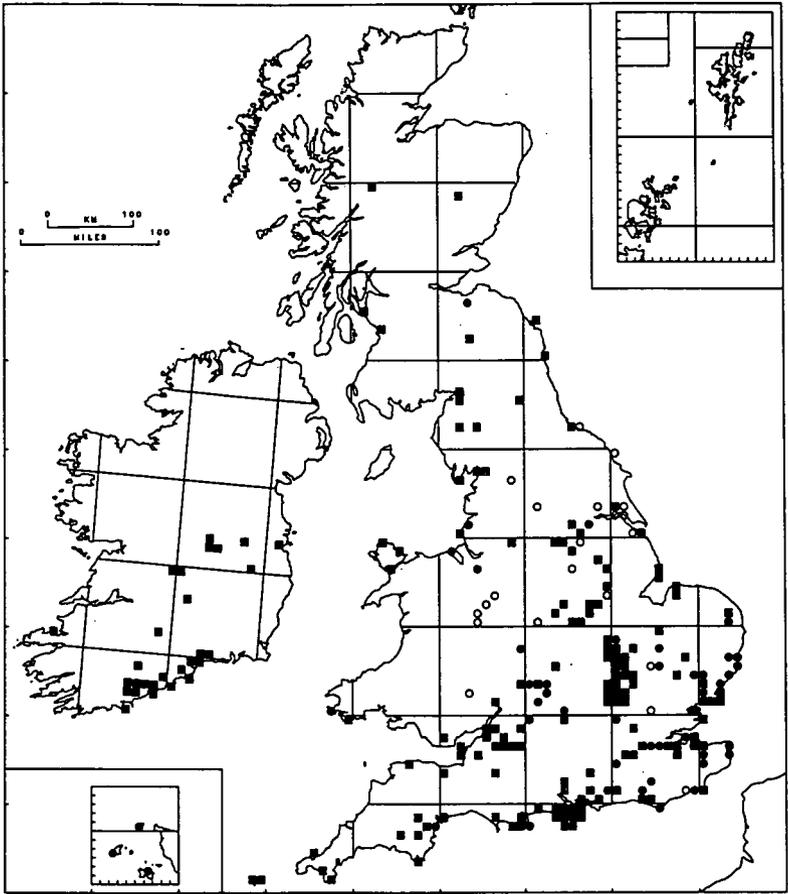
Map 16 Phalangium opilio Linnaeus, 1758

Adults occur in many situations; on trees, bushes and in rank vegetation in cultivated areas, as well as in dunes, heaths, moorlands, marshes and in deciduous and open coniferous woodlands. The young stages live on the ground. It is a widespread and common species, and matures from about mid-June to the end of November. Widely distributed in the Palaearctic region but unrecorded in many areas and absent from northern Scandinavia; present in North America; introduced into New Zealand.



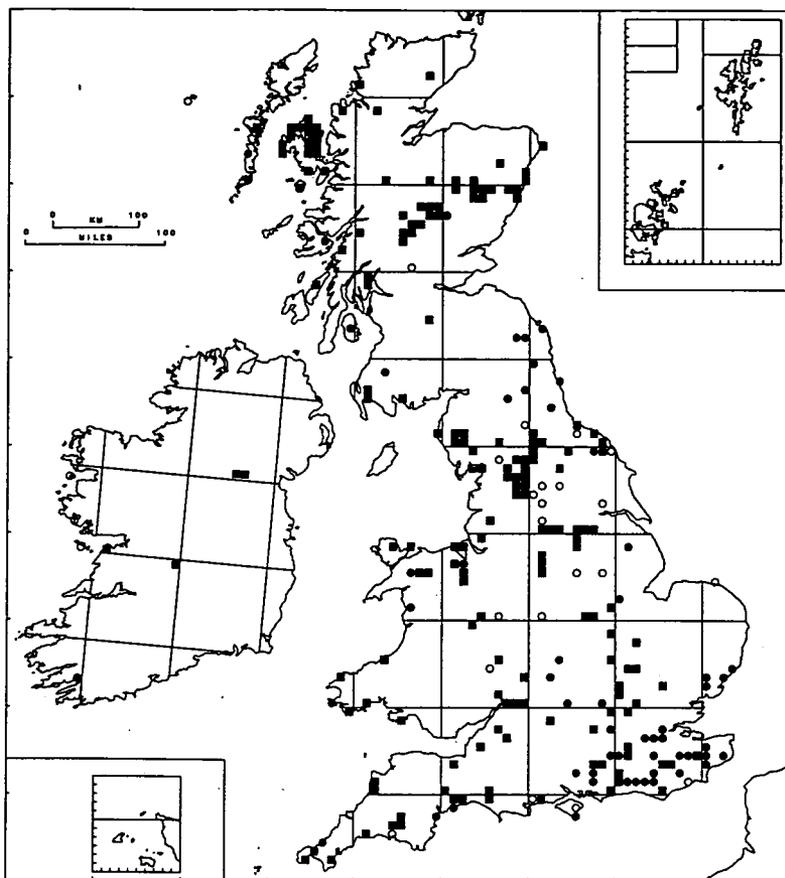
Map 17 *Opilio parietinus* (Degeer, 1778)

Especially frequent in urban areas; on shady walls, tree trunks, low branches and in rank vegetation. Widespread and fairly common, at least in the south. The young live on the ground and adults appear from about mid-July to the frosts. Distributed abroad mainly in the western Palaearctic and extending to Russia. It is recorded from North America and Tasmania.



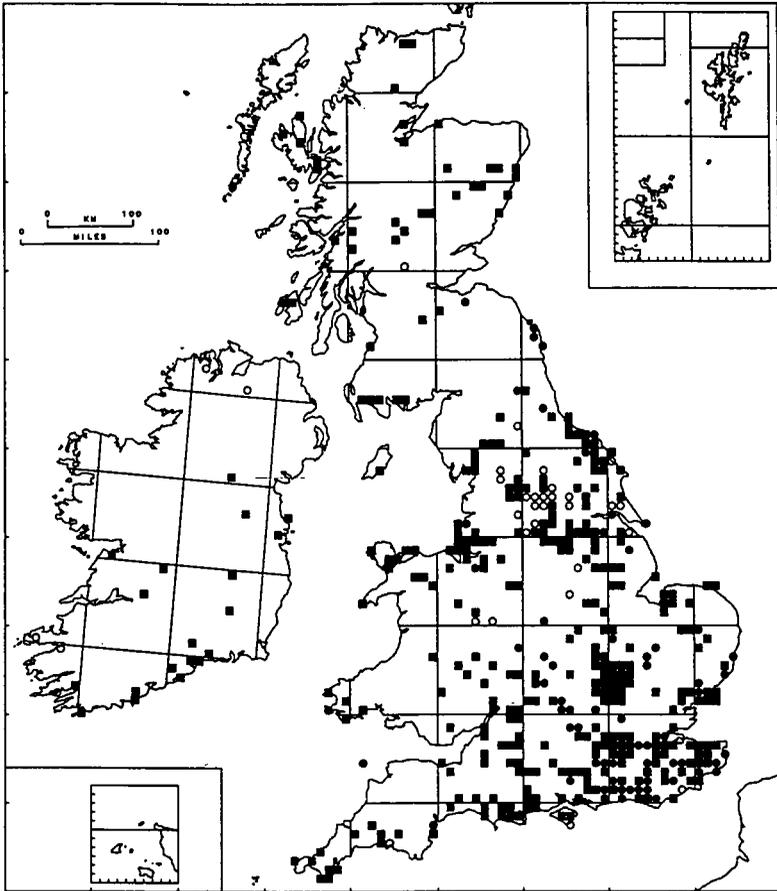
Map 18 Opilio saxatilis C L Koch, 1839

Mainly ground living and in dryish places such as well-vegetated sand dunes, chalk grassland, heath and woodland edges; sometimes in gardens. Under loose pieces of wood and other debris. It is widespread but somewhat local in the south, very local in northern England, and with very few confirmed Scottish records. Adults occur chiefly in August and September and the young inhabit the ground. Recorded from the European Mediterranean region to southern Sweden and may be introduced into some areas.



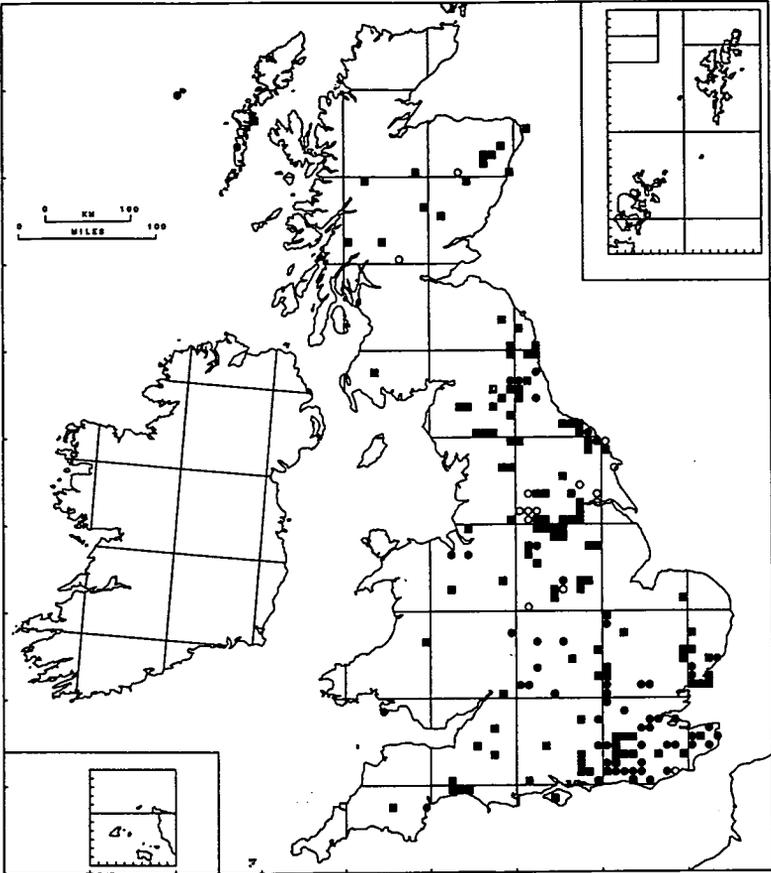
Map 19 *Megabunus diadema* (Fabricius, 1779)

This unmistakable and beautiful species occurs typically in damp woodland in the field layer, but can sometimes be found on lichen-covered tree trunks, against which it is admirably camouflaged. It appears to be commoner in the west of Britain possibly because of more widespread woodland. Adults are recorded from April to December. Males are very rare and reproduction often appears to be by parthenogenesis. The ground-living young stages occur during the winter months. This species has a markedly western Atlantic distribution; it is recorded from the Pyrenees, parts of the western seaboard of France and Norway, and from the Faeroes and southern Iceland.



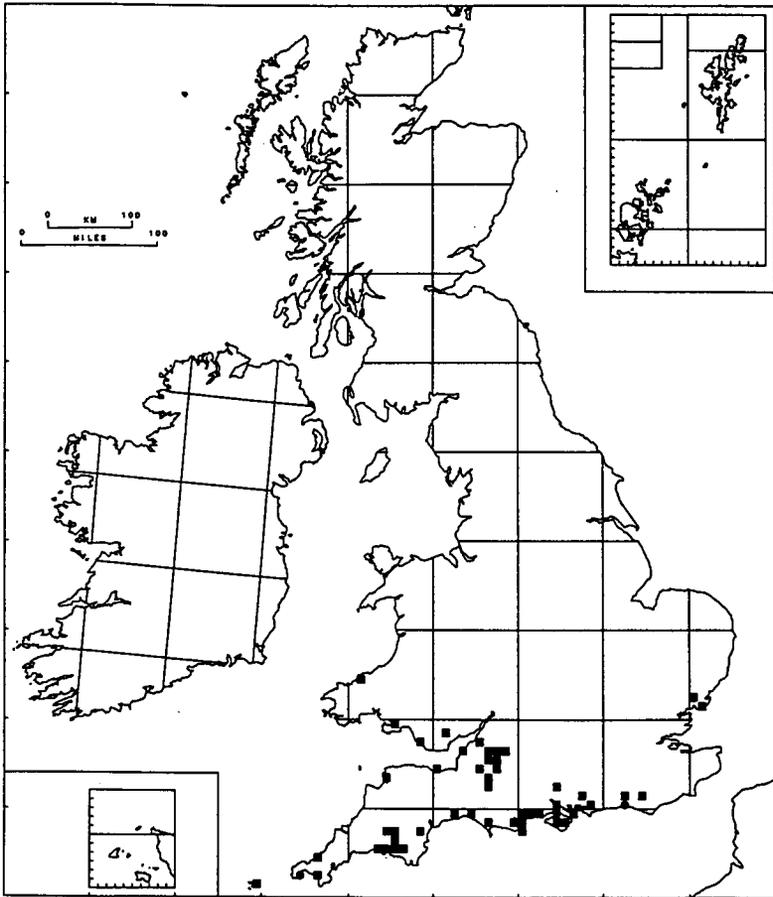
Map 20 *Rilaena triangularis* (Herbst, 1799)

A species of open and semi-open woodlands and scrub, occurring as adults on bushes, low tree branches and among rank vegetation, from about the end of April to mid-August. The young stages are ground living and can be found in the winter months. This species is recorded from most of Europe but not from Iberia or the extreme north; eastwards it is known from Moscow but its south-eastern limit is undetermined. Introduced into North America.



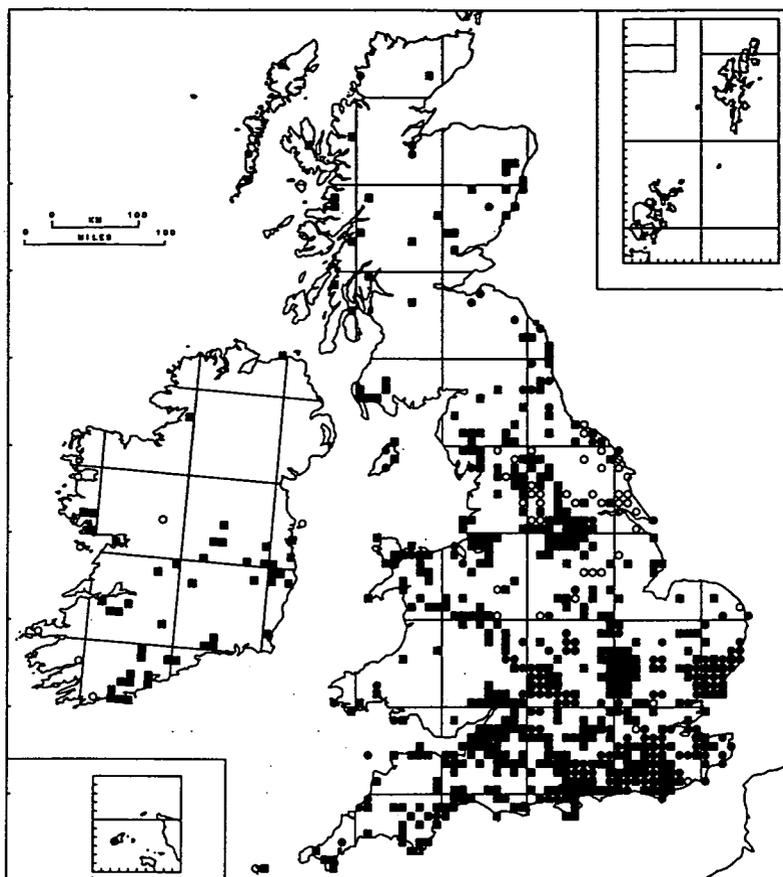
Map 21 Lophopilio palpinalis (Herbst, 1779)

Occurring mainly in the field layer and in loose moss and leaf litter of more open deciduous or mixed woodlands; less frequently in rank grass and under scrub. It is unrecorded from Ireland. Adults have been recorded from about mid-July to the frosts. Known from abroad mainly in central Europe eastwards to Lithuania and Bulgaria.



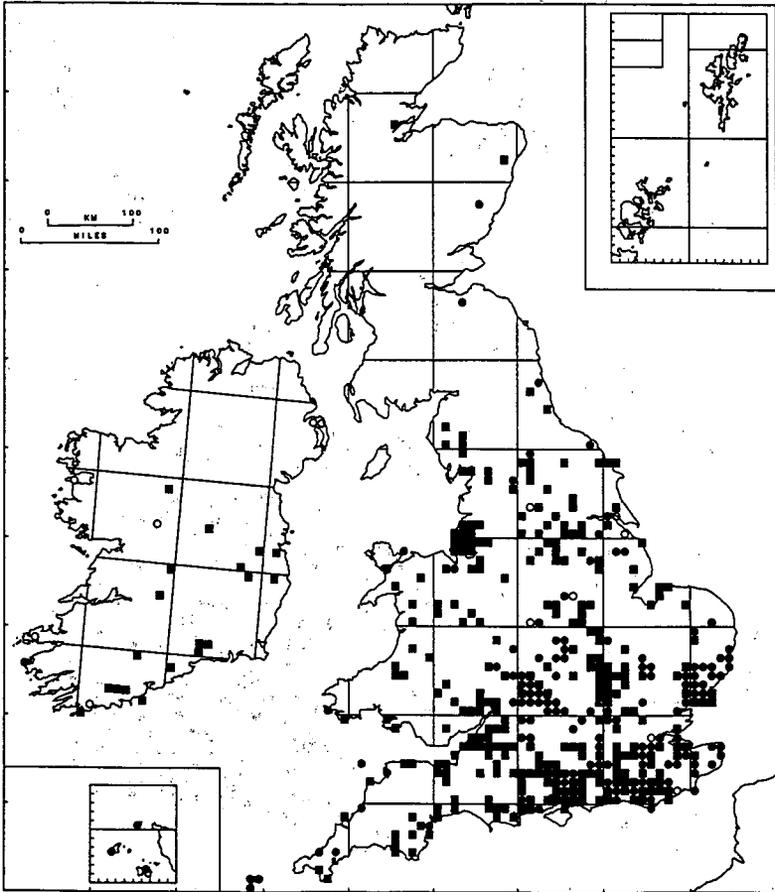
Map 22 *Dicranopalpus ramosus* (Simon, 1909)

This unmistakable harvestman is often associated with man, sitting on house walls even on the sunny side by day; found on fences, tree trunks and in hedgerows, and on branches of trees on wood borders and in parkland; has also been found in the middle of towns and once or twice in houses. Its frequent proximity to and on exotic trees and bushes has led D G Brown to suggest that its transport to and spread in this country may have been through the distribution of horticultural produce. It occurs especially on holm oaks in or near parkland. However, it has also been recorded from sand dunes and coastal land-slips. The young live on or near the ground, and adults are mature from about the end of July to the end of the year. Abroad, it has been recorded from north Africa, Iberia and France.



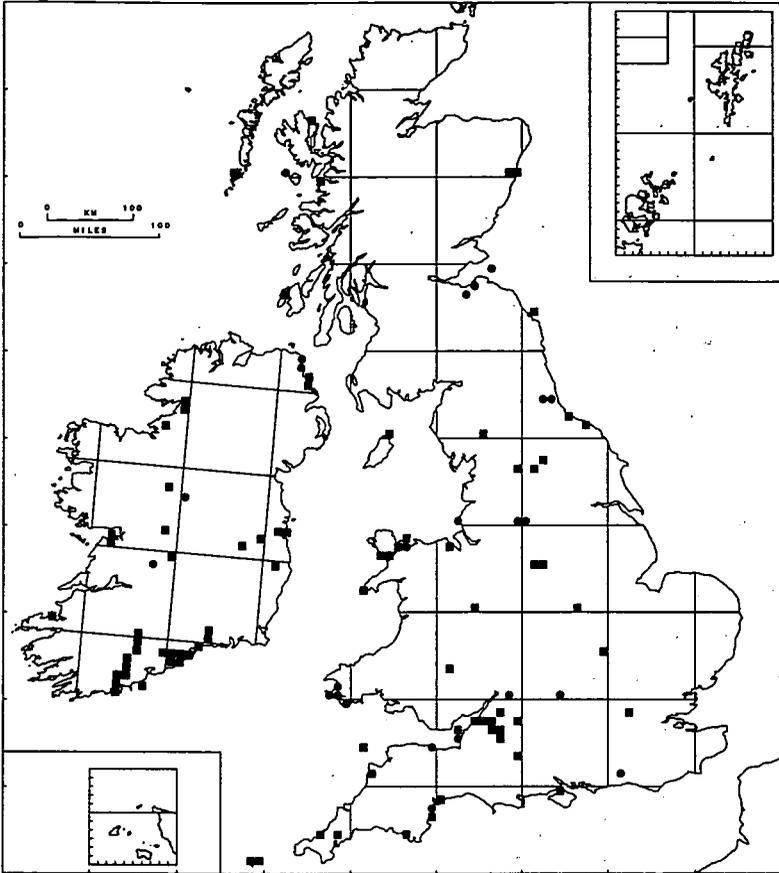
Map 23 Leibobnum rotundum (Latreille, 1798)

The commonest of our small-bodied and long-legged harvestmen, maturing from the end of July to about the end of November. Widespread and common on bushes, branches of trees and in rank vegetation; hedgebanks, ditchbanks and in marshy places; occasionally on fences, walls (sometimes six or more together), tree trunks (usually on the north side), and in cultivated areas. It is uncommon in open grassland and areas of bell-heather and ling. The young live on the ground. Known from most of Europe including Iberia (and the Canary Islands), north Africa, Scandinavia, not recorded from Finland but present in western Russia; also Hungary, Rumania, Yugoslavia and Italy.



Map 24 Leioabunum blackwalli Meade, 1861

This species inhabits low vegetation, hedges, and branches of trees fairly low down, and occurs mainly in woods and shrubby places; it is usually uncommon in cultivated areas. The young stages occur on the ground and adults can be found from about the end of July to the frosts. It is less common than L. rotundum. Its distribution abroad includes most of western Europe from Portugal to western Russia, but not round the Mediterranean, and it has not been recorded from Norway, Finland, Hungary or Austria.



Map 25 *Nelima gothica* Lohmander, 1945

A harvestman of rank grassland and other vegetation, hedgebanks and ditchbanks, also recorded from gardens, it sometimes occurs under old pieces of wood or other material left on the ground, and appears not to ascend very high in any vegetation. The young are ground living. The London record, from next to the main railway line from Bristol (where this species is fairly common), suggests that it may have travelled as eggs in mud, or as small specimens caught up in vegetation, from the west country. Its distribution in Britain suggests a preference for a moist ecosystem. Recorded from Iberia to Sweden and Poland; it is probably under-recorded.

SPECIES INDEX

(Page numbers in **bold type** refer to maps)

| | |
|--|----------------------------|
| <i>Anelasmocephalus cambridgei</i> | 8, 10, 21 |
| <i>Boeorix manducus</i> | 9 |
| <i>Dicranopalpus ramosus</i> | 5, 7, 8, 10, 38 |
| <i>Dicranopalpus caudatus</i> see <i>Dicranopalpus ramosus</i> | |
| <i>Homalenotus quadridentatus</i> | 8, 10, 17, 23 |
| <i>Lacinius ephippiatus</i> | 8, 10, 28 |
| <i>Leiobunum blackwalli</i> | 8, 10, 40 |
| <i>Leiobunum rotundum</i> | 8, 9, 10, 39, 40 |
| <i>Leiobunum tisciae</i> | 9 |
| <i>Lophopilio palpinalis</i> | 8, 10, 37 |
| <i>Megabunus diadema</i> | 8, 10, 35 |
| <i>Mitopus ericaeus</i> | 5, 7, 8, 10, 17, 31 |
| <i>Mitopus morio</i> | 8, 10, 30, 31 |
| <i>Mitostoma chrysomelas</i> | 8, 10, 19 |
| <i>Nelima fuscifrons</i> | 9 |
| <i>Nelima gothica</i> | 8, 10, 17, 41 |
| <i>Nelima silvatica</i> see <i>Nelima gothica</i> | |
| <i>Nemastoma bimaculatum</i> | 8, 10, 18, 19 |
| <i>Nemastoma chrysomelas</i> see <i>Mitostoma chrysomelas</i> | |
| <i>Nemastoma lugubre</i> see <i>Nemastoma bimaculatum</i> | |
| <i>Odiellus palpinalis</i> see <i>Lophopilio palpinalis</i> | |
| <i>Odiellus spinosus</i> | 8, 10, 29 |
| <i>Oligolophus agrestis</i> see <i>Paroligolophus agrestis</i> | |
| <i>Oligolophus hansenii</i> | 8, 10, 17, 25 |
| <i>Oligolophus meadii</i> see <i>Paroligolophus meadii</i> | |
| <i>Oligolophus palpinalis</i> see <i>Lophopilio palpinalis</i> | |
| <i>Oligolophus spinosus</i> see <i>Odiellus spinosus</i> | |
| <i>Oligolophus tridens</i> | 8, 10, 24 |
| <i>Opilio parietinus</i> | 8, 10, 33 |
| <i>Opilio saxatilis</i> | 8, 10, 17, 34 |
| <i>Paroligolophus agrestis</i> | 8, 10, 25, 26 |
| <i>Paroligolophus meadii</i> | 5, 8, 10, 17, 27 |
| <i>Phalangium opilio</i> | 8, 10, 32 |
| <i>Platybunus triangularis</i> see <i>Rilaena triangularis</i> | |
| <i>Rilaena triangularis</i> | 8, 10, 36 |
| <i>Sabacon viscayanum ramblaianum</i> | 5, 7, 8, 10, 22 |
| <i>Trogulus tricarinatus</i> | 5, 8, 10, 20 |

