

A PRELIMINARY LIST OF THE MYRIAPODS OF ORKNEY

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INTRODUCTION

The Orkney Islands are a group of about 70, mostly fairly low lying, islands between 58° 41' and 59° 24' N and 2° 22' and 3° 26' W separated from the Scottish mainland by the Pentland Firth, about 10 km at its narrowest. The highest point, Ward of Hoy on Hoy is 477m and no island other than Hoy has land over 270m. The highest point on Mainland is Ward Hill 268m. Less than 20 of the islands are inhabited.

The largest island is Mainland, linked to the southern isles of Burray and South Ronaldsay by the wartime Churchill Barriers and their roads. Lamb Holm (Laman) and Glimps Holm (Glimsholm), lying between Mainland and Burray are linked with them and to each other by these barriers. Other southern isles are Hoy, Flotta, and Graemsay. Shapinsay and Stronsay lie to the west of Mainland. Northern isles include, Rousay, Egilsay, Eday, Westray, Papa Westray, Sanday and North Ronaldsay. The climate is mild (mean daily temperatures vary by only 9.6 ° C between January and July) but windy. Average rainfall is about 890 - 1020mm p.a. (Berry, 1985)

Land Cover of Scotland Data (quoted in Orkney Local Biodiversity Action Plan Forum, 1997) shows land cover to be 55% improved grassland, 15% heather moorland, 11% peatland, 3.3% freshwater, 1.1% marsh, 1.5% dune. Woodland cover is insignificant but significantly adds to the biodiversity where it occurs. Berriedale Wood on Hoy is the most northerly natural woodland in Britain; other small areas of woodland are minor areas e.g. of aspen or represent plantations of broadleaves including sycamore, wych elm, alder, beech, ash, etc. These latter are likely to be significant in the occurrence of myriapods. Coniferous plantations represent a total of only 0.1km² mostly experimental (unsuccessful) plantations from the 1950s on Hoy.

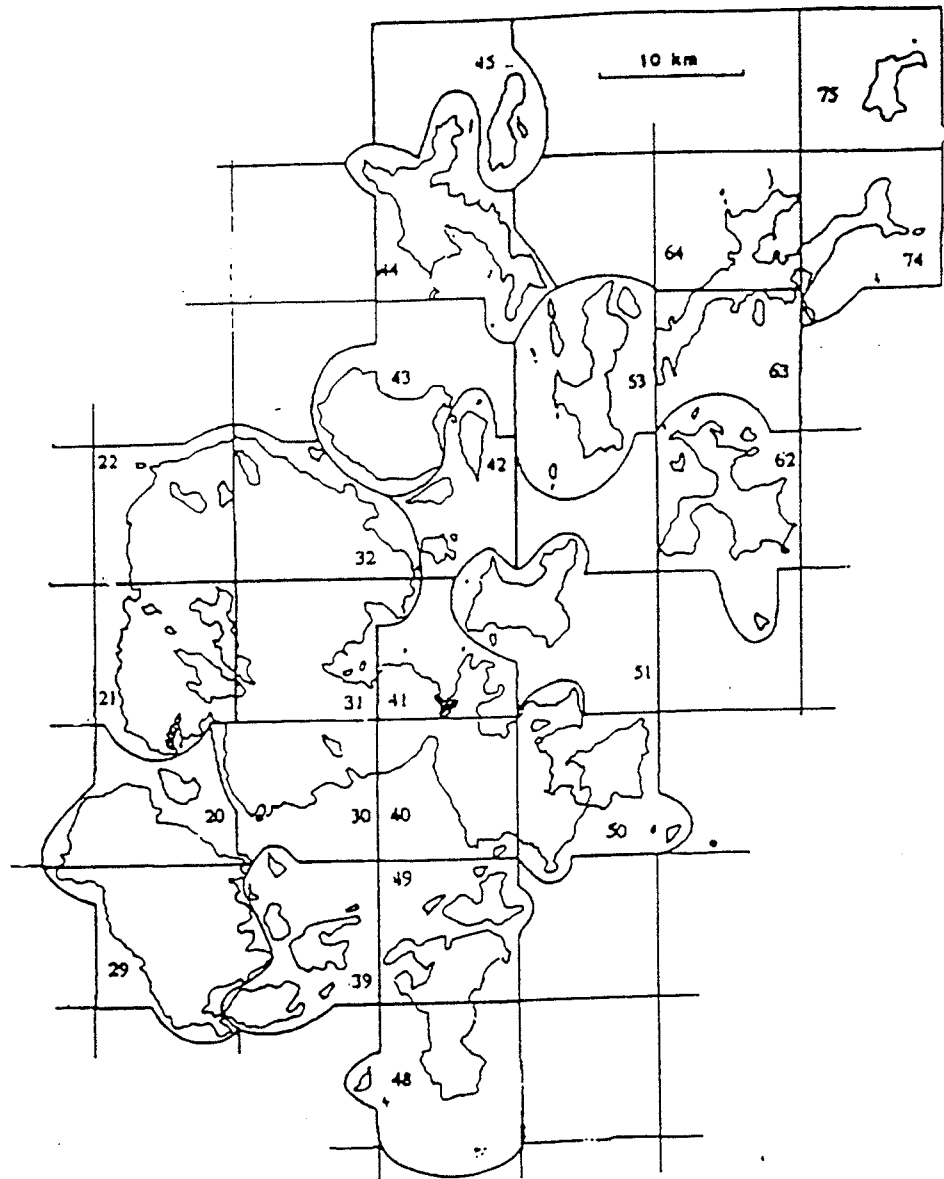
Orkney has been subject to human settlement over a long period of time and is well known for its archaeological remains. Very much under Scandinavian influence and for a period under the Norwegian crown, Kirkwall is closer to Oslo than it is to London. The relative isolation, topography land-use climate factors and the influence of the various settlements gives Orkney its current fauna and flora. An account of its natural history is given by Berry (1985).

Biological recording of the islands has been co-ordinated by the Orkney Biological Records Centre. The unit of recording used is the so called "islandised square" (Orkney Local Biodiversity Action Plan Forum, op.cit.) as being more appropriate than the conventional 10km National Grid square used on mainland Britain which, for instance, causes the small island of Papa Westray, only 7km by 2.5km, to lie in four different recording squares (44, 45, 54, 55). In the islandised system this island along

Map 1

ORKNEY SHOWING ISLANDISED SQUARES

- 29, 20 Hoy & Graemsay
- 21, 22, 30, 31 West Mainland
- 39 South Isles West including Longhope
- 49 South Ronaldsay & Burray
- 48 South Ronaldsay
- 40 Holm & St.Ola (Mainland)
- 41 St.Ola (N) (Mainland)
- 42 Egilsay, Wyre, Gairsay
- 43 Rousay
- 44 Westray
- 45 Papa Westray
- 50 East Mainland
- 51 Shapsinsay
- 53 Eday, etc.
- 62 Stronsay, etc.
- 63, 64, 74 Sanday
- 75 North Ronaldsay



with its Holm is assigned to square 45 where the largest part lies. (See Map 1). The islandised records for myriapods are shown in Table 1.

Myriapod records from Orkney seem to date only from 1978 when D.B.Britt recorded three millipede species (*Nanogona polydesmoides*, *Archiboreoiulus pallidus* and *Polydesmus angustus*) from Mainland and Hoy. Subsequently P.T.Harding collected one millipede (*Cylindroiulus latestriatus*) and two centipedes (*Strigamia maritima* and *Lithobius forficatus*) from Mainland in 1981. C.P.Rawcliffe (1986) and G.B.Corbet (1994) added species from Mainland, South Ronaldsay and Rousay. The present author visited the islands in 1995 and additionally collected on Papa Westray. The total numbers of species so far is only 9 diplopods and 9 chilopods. All collections have been made during August or September. No doubt work by others or earlier in the year would yield a greater number of species.

A comparison with Shetland and Northern Scotland is shown in Table 2.

RECORDS OF SPECIES

DIPLOPODA

Nanogona polydesmoides

This was collected at Ogil Burn on Hoy, Tratlund on Rousay and at two sites on Mainland (Loch of Stenness, Quoyberstane), one a garden. Likely to be fairly widespread.

Archiboreoiulus pallidus

The familiar spotted snake millipede, *Blaniulus guttulatus* does not occur this far north. There are two mainland records of *A.pallidus*, Binscarth Wood and a coastal site at Tingwall where it was numerous in rock crevices beside a stream.

Boreoiulus tenuis

Collected by G.B.Corbet at Hurtiso on Mainland.

Proteroiulus fuscus

The only record of this is from sycamore woodland at Orphir. The lack of woodland on the islands will clearly restrict the occurrence of this and other typically woodland species.

Cylindroiulus latestriatus

This species, which often favours maritime sites, is a common animal in Orkney and is recorded from Mainland (Aikerness, Yesnaby, Orphir, Skipi Geo, Bay of Skail, Skara Brae, Brough of Birsay), Lamb Holm, Glimps Holm, South Ronaldsay (Widewall), Hoy (Hurliness) and Papa Westray. It is likely to be found on all of the islands.

Cylindroiulus punctatus

Like *Proteroiulus fuscus*, a woodland species which is probably one of the commonest millipedes in much of Britain, this is restricted in Orkney by lack of appropriate habitats. Recorded from three sites on Mainland (Binscarth Wood, woodland at Orphir and a garden at Quoyberstane).

Brachydesmus superus

This smallish polydesmid is actually recorded only from Binscarth Wood on Mainland (twice). It might be expected to be much more common so is possibly overlooked.

Polydesmus angustus

This polydesmid, common over much of Britain, is recorded here from Mainland (Stromness Harbour, Loch of Stenness and Binscarth Wood) and from Hoy (Ogil Burn and roadside near Dwarfie Stane).

Polydesmus inconstans

Recorded twice from Mainland (Wideford Hill and Dounby Click Mill).

CHILOPODA

Strigamia maritima

This littoral species of centipede is probably common all round the coastlines of the islands. Actually recorded from Mainland (Stromness, Finstown, Orphir, Sandi Sand, Yesnaby and Brough of Birsay) and from Rousay (Knowe of Burrian).

Geophilus carpophagus

This species favours a variety of habitats in various parts of Britain including woodland and moorland. It has actually been recorded only from Widewall where two females were found. Possibly searching at a different time of year would yield more specimens. It has, however, not been recorded from Shetland or Caithness.

Geophilus oligopus (*Geophilus insculptus*)

Recorded from three sites on Mainland, one a garden (Binscarth Wood, Tingwall and Quoyberstane). Possibly more easily found earlier in the year.

Brachygeophilus truncorum

Although commonly a woodland species, this is also an animal of moorland and grassland. Recorded from three sites on Mainland (Grit Ness, Orphir, Skipi Geo) and two on Papa Westray (North Hill and Machair) it is probably widespread in the islands.

Lithobius forficatus

The large common lithobiid, recorded from 11 sites on Mainland, four on Hoy, three on Papa Westray, two on Rousay, two on South Ronaldsay, Lamb Holm and Glimps Holm. The locations included both urban and rural sites.

Lithobius melanops.

A species associated with both human activity and coastal sites. Recorded from Mainland (Binscarth Wood, Skipi Geo, Orphir, Sandi Sand and Quoyberstane), South Ronaldsay (Burwick), Burray Northfield), Hoy (Rackwick) and Papa Westray.

Lithobius borealis

The only records so far of this species are from Hoy (Betty Corrigal's Grave and Rackwick). It is commonly associated with moorland.

Lithobius crassipes

Seven records from Mainland (Wideford Hill, Dounby, Evie, Orphir, Skipi Geo, Sandi Sand and Tingwall) together with specimens from South Ronaldsay (Windwick), Rousay (Knowe of Burrian) and Papa Westray (Machair area).

In eastern areas of Britain *L. crassipes* is the typical small *Lithobius* of many areas including moorland whereas *L. borealis* seems to be more western. The fact that *L. crassipes* was not found on Hoy but *L. borealis* was and the latter species was not found on mainland nor on the moorland of Papa Westray (North Hill) which is a "typical" habitat for it is interesting. In Shetland (Barber, 1986) *L. borealis* was found on Mainland, Unst, Bressay, Fetlar and ? Yell whereas *L. crassipes* was not recorded. There appear to be no records of *L. borealis* from Caithness.

Lamyctes fulvicornis

This species, which is typically found in late summer and autumn is recorded from Mainland (Wideford Hill, Skipi Geo), Rousay (Hunclett), Hoy (Dwarfie Stane) and Papa Westray (North Hill NR).

DISCUSSION

Reference has already been made to the interesting occurrence of the two smaller species of *Lithobius*. There is little unpredictable in our list of species; it is a very limited one compared with southern Britain and indeed with Southern Scotland. Undoubtedly this is, in part, due to the small amount of collecting and the season when this was done and we might, for instance on the basis of comparison with other areas (Table 2) expect, in due course to find others such as *Polydesmus denticulatus* and *Schendyla nemorensis*.

Two relatively large iulid millipedes, *Ophiulus pilosus* and *Ommatoiulus sabulosus*

are recorded from Caithness and Sutherland but from neither Orkney nor Shetland so far and could possibly be found. The conspicuous variegated centipede, *Lithobius variegatus* was not seen and, given its characteristics and the presence of suitable habitats, together with its apparent absence in Shetland, Caithness and Sutherland, it is probably not present although found in the Outer Hebrides (VC110). It often has a marked westerly distribution.

The geophilomorph *Geophilus proximus* is known only from a single female from Unst, Shetland. This is the sole British record. It could possibly be found in Orkney.

ACKNOWLEDGEMENTS

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Charles Rawcliffe and Gordon Corbet both kindly made their records available, Dick Jones gave me an updated millipede list and Paul Harding of Biological Records Centre a print-out from their records.

REFERENCES

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TABLE 1

ISLANDISED SQUARE RECORDS FOR MYRIAPODS

	Mainland	South Ronaldsay & Burray	Rousay	Hoy	Papa Westray
DIPLOPODA					
<i>Nanogona polydesmoides</i>	21,41		42		
<i>Archiboreoiulus pallidus</i>	31				
<i>Boreoiulus tenuis</i>	50				
<i>Proteroiulus fuscus</i>	30				
<i>Cylindroiulus latestriatus</i>	21,22,30,32,40	49		29	45
<i>Cylindroiulus punctatus</i>	30,31,32				
<i>Brachydesmus superus</i>	31				
<i>Polydesmus angustus</i>	21,31			20	
<i>Polydesmus inconstans</i>	32,41				
CHILOPODA					
<i>Strigamia maritima</i>	21, 22, 30, 31,50	49			
<i>Geophilus carpophagus</i>		49			
<i>Geophilus oligopus</i>	31,41	48			
<i>Brachygeophilus truncorum</i>	22,30,32			29	45
<i>Lithobius forficatus</i>	21,22,30,32,40,41,50	48,49	43	20,29	45
<i>Lithobius melanops</i>	22,30,31,41,50	48,49		29	
<i>Lithobius borealis</i>				29	
<i>Lamyctes fulvicornis</i>	22,41		43	20,29	45

TABLE 2

OCCURRENCE OF SPECIES IN NORTHERN SCOTLAND & ISLANDS

Species	Caithness	Sutherland	Orkney	Shetland	Outer Hebrides
DIPLOPODA					
VC	109	107/108	111	112	110
<i>N. polydesmoides</i>	x	x	x	x	x
<i>A. pallidus</i>			x		
<i>B. tenuis</i>			x	x	
<i>P. fuscus</i>	x	x	x	x	
<i>C. latestriatus</i>	x	x	x	x	x
<i>C. punctatus</i>	x	x	x	x	x
<i>O. pilosus</i>	x	x			x
<i>O. sabulosus</i>	x	x			
<i>B. superus</i>	x	x	x		x
<i>P. angustus</i>	x	x	x		x
<i>P. denticulatus</i>				x	
<i>P. inconstans</i>	x	x	x	x	x
Total recorded species of diplopod					
	8	8	9	7	6

Total diplopod species recorded for VCs 107, 108, 109, 111, 112 = 12

CHILOPODA

VC	109	107/108	111	112	110
<i>S. nemorensis</i>		x		x	x
<i>S. maritima</i>		x	x	x	x
<i>G. carpophagus</i>		x	x		x
<i>G. oligopus</i>		x	x	x	
<i>G. proximus</i>				x	
<i>B. truncorum</i>	x	x	x	x	x
<i>L. variegatus</i>		x			x
<i>L. forficatus</i>	x	x	x	x	x
<i>L. melanops</i>	x	x	x	x	x
<i>L. borealis</i>		x	x	x	x
<i>L. crassipes</i>	x	x	x		
<i>L. fulvicornis</i>		x	x	x	x
Total recorded species of chilopod					
	4	11	9	9	9

Total chilopod species recorded for VCs 107, 108, 109, 111, 112 = 12