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MYRIAPODS OF THE ISLES OF SCILLY

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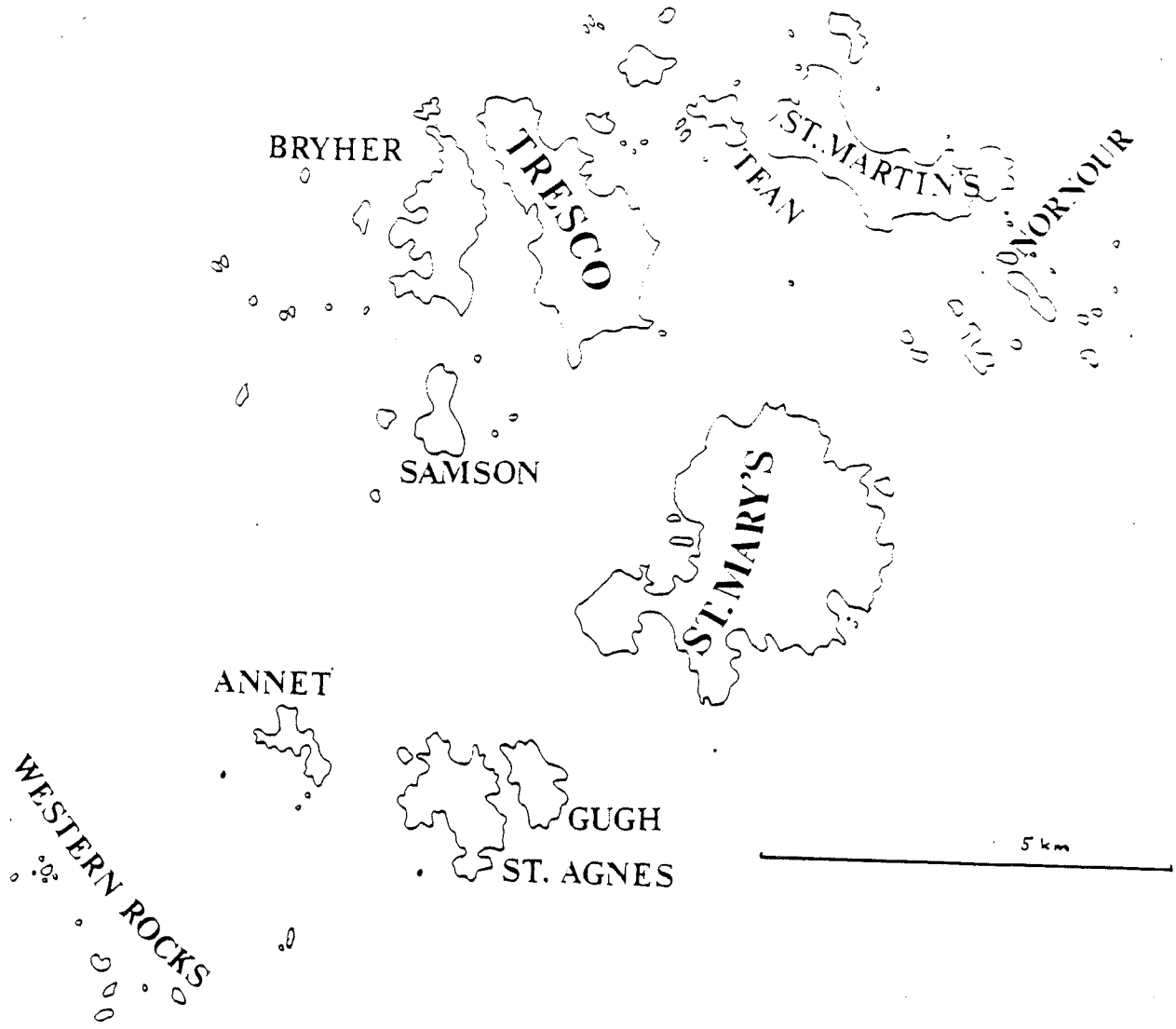
The Isles of Scilly are an archipelago lying 27 miles (43 km) W.S.W. of Land's End, Cornwall.

Today five major islands are inhabited, St. Marys, Tresco, St. Martins, Bryher and St. Agnes, with a population of just over 2,000, the majority inhabiting St. Marys. Some 40 other smaller islands are vegetated and uninhabited, although several were inhabited in the past. There are over 100 additional rocks and reefs. The total exposed land surface at H.W.N.T. is approximately 1,600 hectares (3,900 acres).

The islands are composed entirely of granite which is overlain by blown sand alluvium and head deposits.

The rise and fall of the sea level due to the advances and retreats of the ice during the Ice Age has meant that the islands have at times been all part of one large super-island and at other times been almost completely submerged. The islands were probably last connected to the mainland during the Mid-Pleistocene and the ice sheet reached Scilly on at least one occasion (Scourse 1986). During the ice advances the climate must have been extremely unsuitable for many of the species found on the islands at present.

The rise in sea level after the last advance probably split St. Agnes and Annet away from the rest of the super-island during the Bronze Age (c. 1700 BC) and the continuing rise fragmented the reamining super-island into the present islands. This was a gradual process and was probably not completed until the Middle Ages (Fowler & Thomas, 1979).



Map 1. The Scilly Isles

The climate today is very mild, far milder than the mainland. A high humidity is maintained by regular rainfall and sea fogs; snow is virtually unknown and frosts rarely exceed five days a year. For 350 days a year the air temperature is in excess of 5°C. Lousley (1971) gives a comprehensive summary of the climatic conditions.

The major habitats are limited. Obviously the coastal environment is well represented with bare granite cliffs, shingle and boulder beaches, sandy beaches and dunes. Many of the smaller rocks have little or no vegetation but are still capable of providing refuge for invertebrates such as the false scorpion Neobisium maritimum (Leach) and the centipede Hydroschendyla submarina (Grube).

There are large areas of Western Maritime Heath on all the larger islands and some areas are dominated by a combination of bracken (Pteridium aquilinum (L.)) Annet is unusual, being almost entirely covered with tall mounds of thrift (Armeria maritima (Mill.)). The extensive cultivated areas comprise small fields bounded by stone walls and often with shelter belts of the introduced shrub Pittosporum crassifolium Soland ex Putterl.

In 1835 Adam Smith commenced building his ornamental gardens at Tresco Abbey. This led to the importing of many exotic plants from all over the world, especially the Southern Hemisphere, although records of exotic plants acquired from passing ships being grown on the islands go back to 1650 (Lousley, 1971).

The invertebrate fauna of the islands is depauperate compared to that of the mainland, but also includes exotic species. At the maximum extent of the ice advance the fauna must have been small. Some species may have arrived naturally from warmer refugia to the south, but in the absence of proof of such refugia it seems likely that many species now present owe their introduction to human agency. This method of arrival has been proposed as the most likely explanation for the presence of the Scilly shrew (Crocidura suaveolens (Pallas)) on the islands (Corbet 1961) and invertebrates could have been similarly transported. For example the origin of several exotic species can be traced to Australasia, e.g. Geoplana sanguinea (Moseley), a terrestrial flatworm; Argonemertes dendyi (Dakin), a terrestrial nemertine; and Talitroides sylvaticus (Haswell), a terrestrial crustacean; whilst

Kontikia andersoni Jones, another flatworm, is probably from the Indo-Pacific region. These species can only have been transported by man, presumably with plants for the Tresco gardens. It is not inconceivable that undescribed species of centipedes collected on Scilly originate from as far afield.

In theory the arrival of some species could be roughly dated to the stages of break up of the super-island by examining the distribution of the species at present. For example, any species not found on all of the islands is likely to be a post-medieval arrival. Those found on all islands may well be native or imported as far back as the Bronze Age. However, this apparently simple picture would have been clouded by subsequent inter-island introductions and local extinctions. Much more collecting will be needed before the theory can be tested.

This paper is based on collections made in the autumn of 1982, 1983 and 1984 and the spring of 1985 and 1986. Most specimens were collected by the authors but additional material was collected by A.J. Stones and R. Image. We have included additional records extracted from B.R.C. which are of material collected by F.A. Turk in the 1940s and subsequently examined by A.D. Barber and E.H. Eason.

CENTIPEDES

Twenty species of centipede have been collected from the Isles of Scilly.

GEOPHILOMORPHA

Brachygeophilus truncorum (Bergsoë & Meinert) Collected from St. Marys, Tresco and St. Agnes and most commonly found in areas where there are trees.

Geophilus carpophagus Leach. Common, often abundant, e.g. under cow dung on Wingletang Down, St. Agnes in autumn 1984.

Geophilus fucorum seurati Brolemann. Not easily found but has been collected from coarse granite sand at the top of the beach (but below the high water mark) at Porth Hellick, St. Marys on several occasions and from a similar site on St. Agnes. In 1986 it was discovered under stones on the beach at Old Grimsby, Tresco, again below the high water mark, and under stones above the high water mark on Tean.

Geophilus osquidatum Brolemann. Collected from Gugh, Annet, Tean and Nornour, which are all uninhabited.

Geophilus pusillifrater Verhoeff. This species is difficult to collect but appears not to be uncommon. It is most easily found in cracks in the coastal rock or occasionally under large stones embedded in the soil and in exposed head deposits. All specimens have been from the splash zone, as was a specimen collected from Porthgwarra, Cornwall in 1982. Lewis (1961) found this species at a coastal site in Sussex. It has been collected from St. Marys, St. Martins and Nornour.

Haplophilus subterraneus (Shaw). Common on the inhabited islands and also found on Tean. Turk collected it from Samson.

Henia brevis (Silvestri). A single specimen was collected from Tresco in 1984. Turk collected it from St. Marys.

Hydroschendyla submarina (Grube). Common, often abundant. Easily collected from cracks in the coastal rock below the high tide mark. Probably occurs on all islands and large rocks and so far collected from seven.

Schendyla nemorensis (C.L. Koch). Very common especially under rocks and stones embedded in coastal grassland.

Schendyla peyerimhoffi Brolemann & Ribaut. Collected from St. Marys, Annet and Nornour from cracks in the coastal rock. A specimen collected by Turk from the rock Mincarlo in 1946 has been identified as this species by Eason.

Strigamia maritima (Leach). Commonly found around the tide line on most islands in similar situations to H. submarina and under stones. It is more often found above the high water mark than that species.

Two small species of geophilid have been collected which appear to be new to science and which we hope to describe fully soon. Species A is small with 37 pairs of legs. The head and forcipules are superficially very similar to Pachymerium ferrugineum (C.L. Koch) but the posterior end has only 3 to 5 coxal pores. Further specimens of the species have been collected from

the Isle of Wight by A.N. Keay so it may well be found elsewhere in southern Britain. It is not uncommon on Scilly.

Species B is also small with 45 pairs of legs. It may well be an undescribed species of Arenophilus. It has been collected from Tresco by us and Turk found it on St. Marys.

SCOLOPENDROMORPHA

Cryptops hortensis Leach. Common on most of the inhabited islands and Annet.

LITHOBIOMORPHA

Lithobius borealis Meinert. Less widespread than L. melanops, it occurs on several islands.

Lithobius calcaratus C.L. Koch. A single male was collected from a sandy area on Gugh in 1985.

Lithobius forficatus (L.). So far collected only from St. Marys, Tresco and St. Agnes.

Lithobius melanops Newport. Common and widespread but so far not collected from Tresco.

Lithobius microps Meinert. Not uncommon on some islands.

Lithobius variegatus Leach. Very common. Found on all the islands visited except Bryher.

MILLIPEDES

Thirteen species of millipede have been collected from the islands.

PENICILLATA-POLYXENIDA

Polyxenus lagurus (L.). Surprisingly this species has not proved easy to find. It has been collected from under driftwood stacked on maritime heath on St. Marys and is abundant on Annet, again under driftwood.

HELMINTHOMORPHA-JULIDA

Thalassisobates littoralis (Silvestri). This halophile species has been collected on a number of occasions. It was first collected in 1984 from soil filled cracks in a low granite cliff on the Garrison, St. Marys and has been found there subsequently. The cracks also contained Strigamia maritima and Schendyla nemorensis and were situated above the black lichen zone, but within the splash zone. In 1986 it was also collected from under stones on Nornour, again above the black lichen zone but within the splash zone. Searching similar habitats elsewhere has so far failed to find it but it undoubtedly occurs on other islands.

Proteroiulus fuscus (Am Stein). Where conifers occur this is commonly found under bark, but it is also found on several islands which are completely lacking in trees. In these situations it is easily collected from under stones and driftwood. It has not yet been found on St. Agnes or Bryher.

Choneiulus palmatus (Nemec). This species has a patchy distribution amongst the islands. It has been collected from under stones and driftwood.

Blaniulus guttulatus (Fabricus). Common on the inhabited islands but absent from all the uninhabited ones visited except Tean. A thorough search was made for it on Annet where P. fuscus and C. palmatus are common but it could not be found.

Cylindroiulus vulnerarius (Berlese). This species was collected in 1986 from just above the high tide mark at Old Grimsby, Tresco.

Cylindroiulus punctatus (Leach). Found only on the inhabited islands of St. Marys, Tresco and St. Martins where there are trees.

Cylindroiulus latestraiatus (Curtis). Abundant, the commonest species on the islands.

Cylindroiulus britannicus (Verhoeff). A single male was collected from the rubbish tip on St. Marys in 1984.

Table 1. Diplopoda from the Scillies, by islands.

● Collected R.E.Jones and P. Pratley

T Collected F.A.Turk

	St. Mary's	Tresco	St. Martin's	Bryher	St. Agnes	Gugh	Annet	Tean	Little Ganilly	Nornour
Blaniulus guttulatus	●	●	●		●			●		
Brachydesmus superus	●	●								
Brachyiulus pusillus	●	●								
Choneiulus palmatus	●	●	●				●			
Cylindroiulus britannicus	●									
C. latestriatus	●	●	●	●	●	●	●	●		●
C. punctatus	●	●	●							
C. vulnerarius		●								
Thalassisobates littoralis	●									●
Polydesmus angustus	●									
P. denticulatus		●								
Polyxenus lagurus	●						●		T	
Proteroiulus fuscus	●	●	●			●	●	●	T	

Table 2.

Chilopoda from the Scillies, by islands.

	St. Mary's	Tresco	St. Martin's	Bryher	St. Agnes	Gugh	Annet	Tean	Samson	St. Helen's	Great Ganilly	Nornour	Mincarlo
Brachygeophilus truncorum	●	●			●								
Cryptops hortensis	●	●	●	T	●		●						
Geophilus carpophagus	●	●	●	T	●		●	●				●	T
G. fucorum serauti	●	●			●			●					
G. osquidatum						●	●	●				●	
G. pusillifrater	●		●									●	
Haplophilus subterraneus	●	●	●	●	●			●	T				
Henia brevis	T	●											
Hydroschendyla submarina	●	●		●	●		●	●				●	
Lithobius borealis	●	T	●			●	●				T		
L. calcaratus						●							
L. forficatus	●	●			●								
L. melanops	●		●	●	T	●	●	●	T	T		●	
L. microps	●	●		●	T				T	T			
L. variegatus	●	●	●		●	●	●	●	T	T		●	
Schendyla nemorensis	●	●	T	●	●	●	●	●	T	T		●	
S. peyerimhoffi	●						●					●	T
Strigamia maritima	●	●	●	●	●	●		●	T				
"Arenophilus" sp. nov. ?		●											
"Pachymerium" sp. nov. ?	●	●											

Brachyiulus pusillus (Leach). Collected from St. Marys and Tresco. Not common.

HELMINTHOMORPHA-POLYDESMIDA

Polydesmus angustus Latzel. Collected only from the Higher Moors area of St. Marys.

Polydesmus denticulatus C.L. Koch. A single specimen was collected from Tresco gardens in 1985.

Brachydesmus superus Latzel. Found only on St. Marys and Tresco.

Acknowledgements

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