

**POLYDESMUS BARBERII LATZEL AND ANTHOGONA BRITANNICA MAURIÈS IN DEVON.**

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**INTRODUCTION**

Survey work for molluscs in Devon has resulted in the discovery of *Polydesmus barberi* Latzel, a species of millipede new to the British Isles (British Myriapod Group Newsletter 23 1995) and the identification of several new localities for *Anthogona britannica* Mauriès first described from Slapton Ley Nature Reserve in 1993 (Bolton & Jones, 1996).

Since the late 1980's staff in the natural history section of the Royal Albert Memorial Museum in Exeter, Devon, have been undertaking a systematic survey of terrestrial and freshwater molluscs in Devon. The objective is to determine species distribution at the 2 x 2km scale by means of on-site observation and by sampling. On-site surveys have varied according to habitat as well as considerations such as time and access, but normally include examination of a broad spectrum of representative physical and biotic features, such as rock exposures, both natural and artefact, the undersides of stones and rocks, standing and fallen trees and a variety of dumped rubbish. Terrestrial sampling is by collection of leaf debris, plant remains and inorganic material. Samples of around 10 litres are dried in a wind tunnel then sieved into several fractions for examination by the naked eye or under a lens or binocular microscope.

On the 24th February 1995, DEB and Geoff Musker visited Central Park in the Pennycomequick area of Plymouth (NGR20 476 564). Searching independently both encountered several specimens of a moderately large millipede unusually conspicuous on account of their apparent lack of pigment, contrasting them against the dark humic litter. Individuals were found in a variety of locations, most abundantly under debris of bricks and concrete on a moderate slope under mixed conifers, where *Hedera helix* was the dominant ground flora. Further searches revealed specimens in other parts of the park and the adjacent cemetery. Associated species were the millipedes *Brachydesmus superus* Latzel, *Polydesmus angustus* Latzel, *Ophiulus pilosus* (Newport) and *Nanogona polydesmoides* (Leach) and centipedes *Lithobius microps* Meinert, *Haplophilus subterraneus* (Shaw), *Cryptops parisii* Brolemann and *Brachygeophilus truncorum* (Bergso and Meinert). A visit to Weston Mill Cemetery, Plymouth (NGR20 457 575) on the same day resulted in the discovery of another population with the associated millipede *Polyxenus lagurus* (Linne) and centipedes *Lithobius forficatus* (Linne), *Schendyla nemorensis* (CL Koch) and *H. subterraneus*.

Most, if not all, specimens collected were found to be mature but not attributable to any described in Blower (1985). Specimens of males and females were passed to R.E. Jones who identified them as *P. barberi*.

DEB and GM returned to Central Park on 6th April 1995 to participate in a video recording by Westcountry TV for a news item announcing the discovery of *P.*

*barberii*. Specimens were as abundant as during the first visit and some were found under the first piece of debris that was turned over. They were easily found in a variety of situations including the undersides of large boulders, chosen for photogenic reasons rather than for the practicality of turning then replacing them.

Further finds of *P. barberii* were made on the 3rd November when several immature specimens were found at Kingswear Cemetery, South Devon, SX 889 519, during a visit by DEB, GM and George Beccaloni. The microsite was a small pile of detached mosses and lichens raked together upon a grave. No other specimens were found at this location.

DEB again encountered mature specimens on 1st December 1995 during a search of a roadside wood above the head of Old Mill Creek, in the parish of Dittisham NGR20 853 521. This site lies across the Dart estuary from Kingswear. Specimens were located at the interface between the previous seasons rotted leaf litter and freshly fallen leaves of hazel (*Corylus avellana*), ash (*Fraxinus excelsior*) and oak (*Quercus* spp.). *Mercurialis perennis*, *Cryosplenium oppositifolium* and *Phyllitis scolopendrium* were representative of the ground flora remaining in leaf. Further searches and sampling of roadsides and woodland showed that the species was present in four tetrads centred upon Old Mill Creek. Most specimens examined were mature with a preponderance of males. Fewer than 5% of individuals were immature.

A description of *Anthogona britannica* and an account of its discovery is given by Gregory *et al.* (1993) and Bolton & Jones (1996). A further specimen was isolated from a leaf-litter sample collected by Leigh Lock from The Grove, Brixham on 25.ix.1991. The Myriapoda were not examined until July 1995 when the single specimen was forwarded to REJ who identified it as an immature *A. britannica*. Specimens of *A. britannica* were identified from leaf-litter samples collected in the Dartmouth area on 3.xi.1995. Respectively these collections and the associated myriapods were:

Sugary Cove, nr Dartmouth Castle, Dartmouth, NG20 885 501; leaf debris beneath scrambling ivy (*H. helix*) on steeply inclined strata of exposed Dartmouth slates, c 5m above EHW, with *B. superus*, *Chordeuma proximum* Ribaut, *Cylindroiulus punctatus* (Leach) and *Lithobius variegatus* Leach.

Above Ladies Cove, Dartmouth, NGR20 886 496; steep seaward slope, low sycamore (*Acer pseudoplatanus*) over ground cover of ivy and *Phyllitis scolopendrium* with *C. proximum*, *Enantiulus armatus* (Ribaut), *Glomeris marginata* (Villers), *Julus scandinavus* Latzel and *Melogona gallica* (Latzel).

On 15.xi.1995 further locations were discovered. These were:

Sea cliff west of Leonards Cove, Stoke Fleming, NGR20 860 478; steep seaward slope above old wave platform on Dartmouth slates; thin soils with fescues dominant and large mounded growths of *Armeria maritima* and a sheltered gully with deeper accumulations of humic litter beneath *Silene uniflora*, *Beta vulgaris ssp maritima*, *Dactylis glomerata*, *Brassica oleracea* and *Teucrium scorodonia*; in associated with *Omatoiulus sabulosus* (and *Cylindroiulus latestriatus* (Curtis)).

Mill Hill Copse, Stoke Flemming, NGR20 851 481; a small disused and overgrown quarry in Dartmouth slates overhung by mature trees of beech (*Fagus sylvaticus*) and sweet chestnut (*Castanea sativa*) and with young sycamore on quarry floor: in drifted accumulations of leaf-litter beneath quarry face; associated with *B. superus*, *Blaniulus guttulatus* (Fabricius), *Brachyiulus pusillus* (Leach), *G. marginata*, *J. scandinavicus*, *Melogona scutellare* (Ribaut), *O. pilosus*, *B. truncorum*, *L. microps* and *L. variegatus*.

Cliffs above Strete Beach, Strete, NGR20 837 459: steep face of low cliff in head, overlying Dartmouth slates, unstable with some exposed soils between clumps of *Dactylis glomerata*, *Silene uniflora* and scrubby areas of *T. scorodonia*, *Rubus fruticosus* agg., *Ulex europaeus* and *Urtica dioica*; in company of *B. superus*, *C. proximum*, *L. microps*, *L. variegatus* and *Schendyla nemorensis*.

The most recent collections are from around Old Mill Creek in the parish of Dittisham, north of Dartmouth. This was on the same day, 1.xii.1995 and in the immediate vicinity of the sites reported for *P. barberii* in this article. One collection was made in which one specimen of *A. britannica* was associated with several individuals of *P. barberii*. A description of the site is as follows:

Hill Copse, Raleigh Estate, Dittisham; NGR20 864 522; small area of sycamore wood established on ?quarry spoil; sloping ground, well drained. *A. britannica* and *P. barberii* with *C. proximum*, *B. superus* and *C. punctatus*.

*A. britannica* was also found in a sample taken from beneath ivy on top of a creek side wall and from the base of a low roadside retaining wall which is overhung by deciduous trees including oak and hazel, at Old Mill Creek, in Dittisham; NGR20 861 519. Other myriapods were *Tachypodoiulus niger* (Leach) and *L. microps*.

During a visit to Slapton on 8.xii.1995 *A. britannica* was found in a closed sward of fescues on the Ley side of the beach road, NGR20 829 444. This site is close to one of Gregory's original localities. *C. latestriatus* and *E. armatus* were the only other myriapods found in close association but both these species were in abundance.

Further finds were made at Burlestone Wood, near Gara Mill, Strete, at NGR 817 479 and 818 481. Both sites included mixed deciduous woodland with deep leaf debris of sweet chestnut and beech with lesser quantities of oak, ash and hazel leaf litter. the first site included an area of sandy alluvial ground by the River Gara where there was a marshy, tall herb community in association with *C. oppositifolium*. Common to both sites were *B. superus*, *E. armatus* and *G. marginata*.

A male and female *A. britannica* were isolated from a preserved collection of invertebrates which I had made from a litter sample collected by M. R. Hughes from Lower Stutlebury Wood, Leigh, Churchstow, NGR 718 460. The wood was a sycamore/sweet chestnut coppice.

## DISCUSSION

*Anthogona britannica*, at the time of writing, is known only from South Devon, VC3. *Polydesmus barberii* was originally described from the French Alpes-Maritime but has

recently been found in VC3 and is not known from elsewhere in the British Isles. Both species have been discovered in new localities and are known to be consociated in one location. Gregory *et al.* (1993) record *A. britannica* as being well established at Slapton and very recent records from the area confirm this. The recent extension of its known range, from Slapton, north to Brixham and west to Churchstow, and the frequency of its collection in coastal samples, give support to the contention that it has been long established in south Devon. A systematic survey of the land and freshwater molluscs of Devon, still in progress, has demonstrated that most recorded species of millipede are widespread across the county, and that those with an affinity for coastal habitats are found near both North and South coasts. The apparently restricted distributions, within the vice county, of both species is not mirrored by any native millipede. Both species are known to be mature in the winter months. Mature males of *A. britannica* are recorded from 18 October 1983 (R.E. Jones), 19 October 1992, 3 and 15 November, 1, 8, 29 December (D.E. Bolton) and 25 February 1992 (S.J. Gregory). An immature male was collected on 25 September 1991 (L. Lock). Mature males of *P. barberii* were recorded on 24 February, 6 April and 1 December 1995 (D.E. Bolton & G. Musker). Immatures were present on 3 November and 1 December.

The distribution of *P. barberii* I would interpret as indicating a species which is a relatively recent introduction to this country. The first population was discovered in an urban area close to an international port with a busy cross-channel service and a large naval presence. It was found in both of the Plymouth cemeteries that were searched. The second population was also in a cemetery but that and subsequent populations were in a rural setting but very close to a busy international yachting centre with a long naval association. Without further detailed research we cannot define the limits to these populations but the Kingsbridge site may be a recent extension from the apparently more widely established Dartmouth populations. There may well be a connection between the Dartmouth and Plymouth populations and the putative French origins which relates to their common naval associations, perhaps even to the Napoleonic wars (G. Musker pers. comm.).

*A. britannica* has been found in 14 out of 56 terrestrial samples taken in the 10km squares SX74, SX84, SX85 and SX95 between 27.x.1995 and 12.I.1996. This makes it the third most frequently recorded millipede in these samples after *B. superus* and *C. proximum*, with *E. armatus* in 13 samples.

## REFERENCES

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