

HABITAT PREFERENCE AND DISTRIBUTION OF *RHACOGNATHUS PUNCTATUS* (HEMIPTERA: PENTATOMIDAE) IN WALES

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ABSTRACT

A summary of the distribution and habitat preferences for *Rhacognathus punctatus* (L.) in Wales is provided. *Rhacognathus punctatus* has been recorded from nine sites in Wales and is strongly associated with mires and coastal dune wetlands, with two records from coastal and riverine heathland.

INTRODUCTION

The predatory shieldbugs (Pentatomidae: Asopinae) comprise a small group of shieldbugs within Britain, with the largest of the five species recorded in Britain, *Jalla dumosa* (L.) now considered extinct, having previously been known only from Kent (Kirby, 1992). The remaining four species have all been recorded from Wales (Howe, 2004), of which *Rhacognathus punctatus* (L.) (Plate 7, Fig. 1) has been recorded only comparatively recently in Wales (Askew, 1990), in contrast to the other three species, which had all been recorded by 1930.

Picromerus bidens (L.) was first recorded in Wales from Bridgend in Glamorgan (Blomer, 1833). This record was overlooked by Douglas & Scott (1865), who give very few localities for any of the Asopinae, and no records from Wales. Saunders (1892) gives only one Welsh locality, Swansea, for *Zicrona caerulea* (L.), apparently the first record for Wales. Butler (1923) cites early records of *Troilus luridus* (F.) from Merionethshire and Pembrokeshire.

Records for *R. punctatus* in Wales were not published until 1990 (Askew, 1990), despite specimens dating back to the 1950s, and it was not documented from Wales by Southwood & Leston (1959). *Rhacognathus punctatus* is undoubtedly an extremely cryptic and under-recorded species but would appear to be widespread throughout Wales (Fig. 1) and with high habitat fidelity. There has been no previous attempt to clarify the distribution and habitat preferences of *R. punctatus* in Wales.

Rhacognathus punctatus exclusively predated leaf beetles (Chrysomelidae) (Péricart, 2010). Both adults and larvae of a number of species of leaf beetle are predated including the heather beetle *Lochmaea suturalis* (Thomson), and a range of *Salix*-feeding species including *Lochmaea caprea* (L.) (Southwood & Leston, 1959), *Phratora vulgatissima* (L.), *Galerucella lineola* (F.) (Cox, 2007) and *Plagioderia versicolora* (Laicharting) (Péricart, 2010). *Rhacognathus punctatus* has also been recorded predating *Phaedon cochleariae* (F.) larvae on crucifers and *Hydrothassa marginella* (L.) on *Ranunculus* spp. (Cox, 2007). The distribution of *R. punctatus* is likely to be closely linked to habitats which provide an abundance of suitable prey.

DISTRIBUTION OF *R. PUNCTATUS* IN WALES

Rhacognathus punctatus was first recorded in Wales from Fenn's Moss (SJ489369) on 12 May 1951 (National Museum of Wales (NMW), though this capture was unknown to Southwood & Leston (1959) who stated 'not yet reported from Wales,

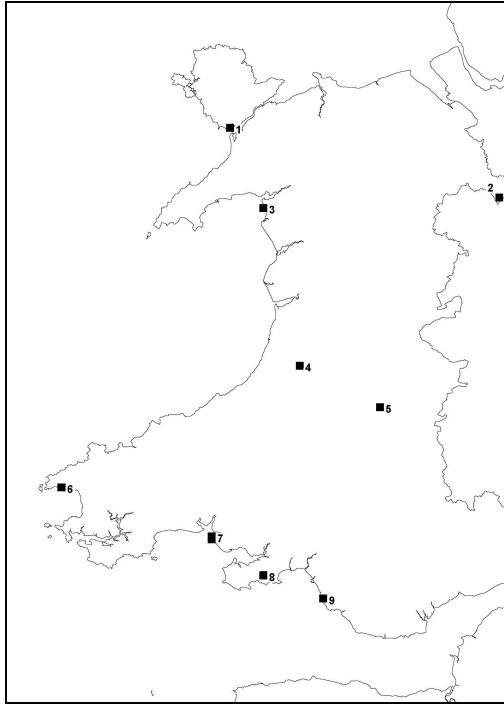


Figure 1. Recorded distribution of *Rhacognathus punctatus* in Wales.

Site numbers: 1 = Newborough Warren, 2 = Fenn's Moss, 3 = Morfa Harlech, 4 = Afon Ystwyth, Tynbedw, 5 = Cors y Llyn, 6 = Porth y Rhaw, 7 = Tywyn Burrows, 8 = Fairwood Common, 9 = Kenfig Burrows.

but certainly present there'. It was subsequently re-recorded at Fenn's Moss on 3rd August 1988 (SJ4783) during the Welsh Peatland Invertebrate Survey (Holmes, Boyce & Reed, 1995) and again in 2003, indicating a long continuity of the species in the Fenn's Moss lowland raised mire complex. During May 1968, *R. punctatus* was recorded for the second time in Wales by Richard Loxton, this time from Newborough Warren (SH46), Anglesey, and is the most northerly site in Wales for this species. *Rhacognathus punctatus* has been sporadically recorded at Newborough Warren between 1972 and 1996.

It was not until 1988 that two new sites for *R. punctatus* were discovered in Wales, with records from Glamorgan at Fairwood Common, Gower peninsula, Glamorgan (SS568905), where five specimens were taken on 26 September 1988 (Askew, 1990), and this was the first time that Welsh records of *R. punctatus* were recorded in the literature. *Rhacognathus punctatus* was also found in Pembrokeshire for the first time at Porth y Rhaw (SM786242) on 6 April 1988 by Mike Howe.

In 1989 a further two Welsh sites were recorded for *R. punctatus*; Tywyn Burrows (SN3605), in Carmarthenshire, when a specimen was recorded by Roger Key on 15 April, and Cors y Llyn NNR (SO017554), Radnorshire, where a further specimen was detected by the Welsh Peatland Invertebrate Survey on 19 June (Holmes, Boyce

& Reed, 1991). *Rhacognathus punctatus* was recorded again at Tywyn Burrows by Mike Howe on 20 May 2005, the most recent record of *R. punctatus* in Wales.

Three additional sites are known for *R. punctatus* in Wales. A single specimen was found by Roger Morris at Morfa Harlech dunes (SH5632) on 27 April 1991, the first record from Gwynedd. A further specimen of *R. punctatus* was obtained by suction vacuuming of a mature dune slack dominated by *Salix repens* on 12 July 1994 at Kenfig Burrows NNR, Glamorgan, South Wales (SS794815) by the author, and is the second site in Glamorgan known for this species. Mike Howe recorded the species new to Cardiganshire at Afon Ystwyth, Tynbedw (SN700718) on 23 July 1999, the first record in Wales from riverine dry heathland, which itself is a rare habitat in Wales (Fowles, 1994).

DISCUSSION

All records in Wales are from high quality wetland habitats usually partly or entirely designated as NNRs (Fowles, 1994) suggesting that wetland habitats with a long continuity may be profitable places to look for new colonies of *R. punctatus*. In the south of England *R. punctatus* also occurs on dry heaths (Hawkins, 2003), but this habitat appears to be the least utilised by this species in Wales, as *R. punctatus* has been recorded at only two heathland sites Porth-y-Rhaw in Pembrokeshire, a coastal heathland site, and Afon Ystwyth, Tynbedw, Cardiganshire, a dry heath derived from river shingle.

Current evidence indicates that *R. punctatus* occurs predominantly in wetland biotopes in Wales, particularly lowland raised mires (Cors y Llyn, Fairwood Common, Fenn's Moss) and mature coastal dune slacks with *Salix* cover (Kenfig, Morfa Harlech, Newborough, Tywyn), which provide suitable habitats for its chrysomelid beetle prey. Wetlands appear to be the main habitat of this elusive species in Wales, and it is apparently restricted to habitats with a long continuity. The most recent records of *R. punctatus* have been obtained from both mires and dune slacks, but even where it is known to occur it can be extremely evasive – despite its continued presence in Fenn's Moss, it has been found there on very few occasions in over a 40 year period since its discovery, and a similar pattern is noted for Newborough Warren.

Whilst *R. punctatus* is regarded in conservation circles as local or common, any site at which *R. punctatus* is recorded in Wales is indicative of long habitat continuity, and the presence of this species as part of a larger wetland assemblage is likely to be of high conservation importance, as has been demonstrated for *R. punctatus* many of the sites where it occurs are already designated as nationally important.

ACKNOWLEDGEMENTS

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 SHORT COMMUNICATIONS

***Erotettix* (= *Macrosteles*) *cyane* (Boheman) (Hemiptera: Cicadellidae) in Berkshire (VC22).** – On 23 June 2011, I visited a pond at Barrow farm Fen (SU4697) VC22 (modern Oxfordshire). A shallow pond on clay created approximately a decade before, had a deeper section dominated by extensive rafts of broad-leaved pondweed *Potamogeton natans*. Upon this I found a few adult *Erotettix cyane* (Plate 7, Fig. 2). A second visit was made on 20 September when over a hundred late instar nymphs and 50 plus adults were seen. Many of the adults still had the powdery sky-blue bloom and appeared very fresh. This is the most northerly site for the species in England and the first records for VC22. It will be interesting to discover whether this site forms part of the natural distribution of this species, which is highly scattered in southern England (and the more likely explanation) or whether it represents a possible northward extension of range. The few observations we have of this species to date suggest that it is not a particularly active disperser, with local populations on individual ponds dying out rather than expanding and re-establishing themselves. In common with the Surrey site at Newdigate, the pondweed rafts were also home to large numbers of the local pondweed bug *Mesovelia furcata* (Mulsant & Rey) (Hem.: Mesoveliidae). – JONTY DENTON, 31 Thorn Lane, Four Marks, Hants GU34 5BX.



PLATE 7 Fig. 1: *Rhacognathus punctulatus*. Photo: Tristan Bantock. Fig. 2: *Erotefrix cyane*, Berkshire 2011. Photo: Jonny Denton. Fig. 3: *Legnotus limbosus*, Photo: Tristan Bantock. Fig. 4: *Meconema meridionale*, Hartley Woods, Kent, 2012. Photo: Pauline Heathcote.