ARMADILLIDIUM PICTUM BRANDT (ISOPODA: ONISCIDEA) AT DOWNTON GORGE NNR, HEREFORDSHIRE

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Armadillidium pictum Brandt, 1833 is one of Britain's rarest woodlice. Unlike many other woodlouse 'rarities', it is exclusively associated with semi-natural habitats and is listed in the British Red Data Book (Bratton, 1991). It has a marked north-western distribution with the majority of known sites occurring in northern England south to Leicestershire (Daws, 1996). However, a small cluster of records is also known from the Welsh/English border counties of Breconshire (Harding, 2006), Radnorshire (Chater, 1988) and Gloucestershire (Alexander, 1995). *A. pictum* often occurs in hilly areas with rocky terrain, typically where talus slopes with accumulations of scree, rocks or boulders are present. Many known sites are ancient deciduous woodland often on limestone or other base-rich substrates.

Downton Gorge National Nature Reserve is bisected by the river Teme, which has cut through the underlying Silurian limestones to produce a steep sided wooded valley with rocky outcrops and cliffs. The gorge comprises a small fragment of the former Royal Chase of Bringewood, which once covered a large part of the Welsh Borders, but which has now been largely destroyed by clearance for agriculture or replanted with conifers (www.english-nature.org.uk). Historical records indicate that there has been a long-term continuity of ash *Fraxinus excelsior*, lime *Tilia* spp. and elm *Ulmus* spp. woodland present on the site. This is a rare woodland type and for this reason Downton Gorge is designated under European law as a Special Area of Conservation (SAC) (www.jncc.gov.uk). The gorge supports a diverse assemblage of ferns, bryophytes and lichens, reflecting the high humidity of the site, but the invertebrate fauna is less well known.

During the 2007 BMIG field meeting to Ludlow a visit was made by members of BMIG, under permit from Natural England, to the southern part of Downton Gorge NNR (SO 44-74-, vc 36). In light of the apparently suitable nature of the rocky woodland habitat for *A. pictum*, one of the objectives of the author was to look for this rare species. Hand searches were made in a wide variety of microsites known to be frequented by the species (Gregory, in prep.). This included searching amongst moss carpets, within red-rotted timber, beneath stones and dead wood. Tree boles, with loose bark and rot holes were also searched. Considerable effort was also put into hand sorting accumulations of scree.

Eventually, a few specimens of *A. pictum* were found with difficulty by laboriously hand-sorting limestone debris that had accumulated just above a track at the base of a wooded limestone slope. Specimens were not found amongst the loose upper-most pieces of scree, but at a depth of a few centimetres where small quantities of dark organic-rich material had accumulated. The associated species give no indication of anything special about this particular micro-site. The most frequently recorded species were the woodlice *Armadillidium vulgare, Oniscus asellus, Philoscia muscorum, Porcellio scaber* and *Trichoniscus pusillus* agg. and the millipedes *Glomeris marginata, Tachypodoiulus niger* and *Ophyiulus pilosus*. Following its initial discovery the species was repeatedly found by several other members of group within the same general location; a narrow accumulation of scree several tens of metres in length. The species was apparently absent from suitable habitat nearby and despite considerable searches elsewhere across the site a second population was not discovered.

It is of note that the species was found associated with its congener *A. vulgare*. Considering the marked north-western range of *A. pictum* and the south-eastern range of *A. vulgare* it is not surprising that there is normally little overlap in their respective distributions. A few ornately mottled females of this latter species were initially thought to be poorly pigmented *A. pictum*, but upon close examination with a microscope the characteristic dark patch on the edge of the 7th pereonite, characteristic of *A. pictum*, was found to be absent. This suggests that at some sites, such as the welsh borders, *A. pictum* may be overlooked as the common *A. vulgare* and confusion between the two species may be possible.

There have been a number of additional records since the publication of Harding and Sutton (1985). It has become apparent that the species is frequently associated with talus slopes associated with ravines or escarpments. Screes provide a number of features that may favour this species. Firstly, in response to current weather conditions (levels of humidity), screes allow easy vertical movement within the underlying substrate. Secondally, some acidic strata, such as those of the Borrowdale volcanic series, produce base-rich screes as a result of constant land-slippage and rock-fall (K.N.A. Alexander, personal communication). *A. pictum* seems to be able to locate and exploit such base-rich features within an otherwise acidic landscape (P.T. Harding, personal communication). This suggests that *A. pictum* could be adapted to, perhaps even a specialist of, talus slope situations.

As to the perennial question; is *A. pictum* rare or extremely elusive? It does seem to be a genuinely rare species. However, it was discovered in the relatively well-worked county of Derbyshire as recently as 1998, where it has subsequently proved to be widespread, but uncommon (Richards, 2004). It undoubtedly awaits discovery in other localities within its know range. The species is usually found in small numbers, but it may occasionally appear in large numbers in superficial habitats, only to become very elusive on subsequent visits (e.g. Chater, 1988). This is presumably as a result of retreating deep into crevices as a response to changes in humidity and would explain why the species is typically hard to find, even at know sites. It is also likely to be overlooked. Confusion with *A. vulgare* and *A. pulchellum* has also occurred both historically (Harding & Sutton, 1985) and in recent years (Gregory & Richards, 2008).

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