

OBSERVATIONS ON *HYGROMIA LIMBATA* (DRAPARNAUD, 1905) (PULMONATA: HELICIDAE) IN CENTRAL ENGLAND

In 1976<sup>1</sup> *Hygromia limbata* (Draparnaud, 1905) was believed to be present in two Worcestershire 10km map squares *viz.* SO74 and SO75; the published record had not changed up to 1998<sup>2</sup>. The species is believed to have been introduced into Worcestershire, although questions have been asked about its status there, and detailed confirmation or discussion of its status in Britain would seem to be desirable. South<sup>3</sup> noted that *H. limbata* had been expanding its range in France for some time. There is now some evidence of a rather slow spread in the English Midlands with new sites in Worcestershire and Gloucestershire. The species is not as markedly vagile as *Hygromia cinctella* (Draparnaud, 1801), which has spread significantly in England and Wales in recent years and infilled many gaps in its range.

I first found *H. limbata* in a garden at Upton-on-Severn, Worcestershire (VC37 SO83 33m O.D.) on 21.x.1980. It occurred in numbers in a shady plant bed, mostly amongst cultivated alstroemerias. The snails were dominantly of the yellow variety *typica* Germain, and the animal also had a yellowish caste. Darker individuals of the variety *sarratina* Moquin-Tandon occurred elsewhere in the garden. These darker morphs are distinctive, the shell in life appearing horn-coloured, the animal grey, flecked with black, the flecks showing up conspicuously through the shell. I made no further records of *H. limbata* for 26 years until 28.x.2006, when examples were found within the built environment of Malvern town on the low Malvern Hills (VC37 SO74 170m O.D.). Darker and lighter morphs were again represented. One month later Mr G. H. Green of Little Comberton, Worcestershire, brought live *H. limbata* to me collected in woodland on the Malvern Hills at Little Malvern (VC37 SO74 200m O.D.); these were of the dark morph. Juvenile *H. limbata* were observed climbing amongst outgrown bushes of soft fruit *Ribes* on 1.vii.2007 on overgrown allotments in Evesham town, and on 14.x.2007 dark morph adults were found in a garden at Stanton, Gloucestershire (VC33 SP03 115m O.D.), evidently new to the vice-county.

The mapped Worcestershire records<sup>1, 2</sup> form

part of what is now apparently an actively enlarging population, from which there are outliers to the south in both Worcestershire and Gloucestershire. How the species is dissipated remains unclear, there being plenty of potential habitat for it which is not yet occupied, although doubtless other populations remain to be found. *H. limbata* is more exacting in its requirements than the fast-spreading *H. cinctella* which is somewhat more xerophilous.

ECOLOGY OF *HYGROMIA LIMBATA* IN THE ENGLISH MIDLANDS

*Hygromia limbata* shows clear evidence of photophobia, or possibly of 'xerophotophobia'. On the Malvern Hills it is crepuscular and nocturnal. It has a marked association with ivy *Hedera helix* L., especially in its arborescent growth-form on vertical surfaces, but in woodland on the Malvern Hills it occurs amongst prostrate ivy. Adults and juveniles have been beaten, after dark, from flowering ivy in Malvern town, and the affinity with dense ivy seems to satisfy a requirement for shelter. On the Cotswold hill slopes at Stanton (*vide supra*) adults were also found on ivy. Evidence suggests (P.F. Whitehead, personal observation) that development may take place on ivy, and there is a predilection for visiting ivy flowers at night. This would limit predation but if local populations make special use of ivy flowers which appear during late autumn, they would tend to occur in places sufficiently sheltered to permit full exposure on autumn nights. This would be consistent with an oceanic west-European species<sup>4</sup> that required climatic stability, in the midland instances on small-scales. It has been observed<sup>5</sup> that *H. limbata* feeds on 'the white fungus that grows on dead elm leaves.' There is nothing especially unusual about an invertebrate that eats both fungal tissues and pollen, as some beetles do. In Worcestershire *H. limbata* appears to breed continuously, which is at variance with<sup>5</sup>, and small juveniles have been found in April, July and October. It appears therefore, that exogenous environmental factors continue to limit the more rapid dispersion of *H. limbata* as a potentially fecund species. It

is a species which is not influenced simply by climatic warming *per se*, but by subtle combinations of climatic parameters, in particular that of humidity.

<sup>1</sup> KERNEY MP (ed.) 1976 *Atlas of the non-marine Mollusca of the British Isles*.

<sup>2</sup> KERNEY MP 1999 *Atlas of the land and freshwater molluscs of Britain and Ireland*.

<sup>3</sup> SOUTH A 1974 *Systematics Association Special Volume 6*. Academic Press.

<sup>4</sup> KERNEY MP & CAMERON RAD 1979 *A field guide to the land snails of Britain and north-west Europe*.

<sup>5</sup> ELLIS AE 1926 *British Snails*.

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