

ANOTHER GLOUCESTERSHIRE LOCALITY FOR *LAURIA SEMPRONII* (CHARPENTIER, 1837) (GASTROPODA, STYLOMMATOPHORA, PUPILLIDAE) WITH OBSERVATIONS ON THE SPECIES

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Abstract *Lauria sempronii* (Charpentier, 1837) and intergeneric hybrids were found in the Stroud area of Gloucestershire, England, during 2006.

Key words *Lauria sempronii*, Gloucestershire, relict, hybrids, fossil

INTRODUCTION

Lauria sempronii (Charpentier, 1837) remains a very rare British mollusc (Kerney, 1999). It was first described as British by Kerney & Norris (1972), and was first collected at Haresfield Beacon, near Stroud, in Gloucestershire (VC33 SO80) during 1894. Subsequently it was found during 1985 by Long (1986), at Edgeworth, Gloucestershire (VC33 SO90), and in 2003 in another site in VC33 SO80 Long (2004) 13 kms east of Haresfield Beacon. Bratton (1991) regarded *L. sempronii* as an endangered RDB1 species. Up to now no further records have been published although Willing (2004) broached the possibility of new finds. I have always found *Lauria* shells difficult, largely due to the polymorphy of *Lauria cylindracea* (da Costa, 1778), and the new material described here proved no different. It required to be subjected to detailed scrutiny by specialists.

DISCUSSION

On 10 February 2006 during a walk in the immediate outskirts of Stroud, Gloucestershire (VC33 SO80 183m O.D.), I had cause to examine the invertebrate fauna of an Oolitic Limestone wall forming the drystone boundary of ancient woodland on the low slopes of the Cotswold Hills. Various mosses were growing on the rocks between which Herb Robert *Geranium robertianum* L. grew in quantity. Under the top rocks were a number of live and dead shells of *Lauria*, of which the range of variation was considerable.

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Fig. 1 *Lauria sempronii* (Charpentier, 1837), near Stroud, Gloucestershire, 10 February 2006. Photograph by James Turner, National Museum of Wales.

lack the internal spiral lamella. In Bath City for example, forms of *L. cylindracea* occur without any mouth thickening or eversion of the lip. Twenty to thirty years ago, I submitted such specimens to specialists, but their response was mostly the same: "probably *Lauria cylindracea*." Nevertheless, I decided to submit some of the Stroud specimens to Dr A. Norris of Leeds, who photographed some (Fig. 1) and submitted the photographs to other people known to him. Dr Norris and I corresponded on the matter during February to May 2006, when he concluded that he did not think that all of the specimens examined were *L. cylindracea*. I therefore submitted the specimens to Dr E. Gittenberger of the National Museum of Natural History, Leiden, on the recommenda-

tion of Dr Norris, who arrived at an interesting and significant conclusion.

THE IDENTITY OF THE SPECIMENS

I segregated the material into two tubes, one containing two specimens which it was felt could be *L. sempronii* (Fig. 1) and another tube containing four specimens. The two specimens were compared with named specimens of *L. sempronii* by Dr Gittenberger and were pronounced to be that species. The other four shells were believed by Dr Gittenberger to be hybrids, of which one was described as being like a large *L. sempronii*. Not surprisingly, this appears to be the first occasion on which hybrid *Lauria* have been identified in Britain.

HYBRIDISATION IN BRITISH LAURIA

Both *L. cylindracea* and *L. sempronii* have fossil records in Britain, all during the Holocene post-glacial (Kerney, 1983, 1999). Kerney & Cameron (1979) regarded *L. cylindracea* as an essentially oceanic west-European species, and in Holocene borehole assemblages from Normandy, France, Limondin-Louzouet & Preece (2004) found it to be relatively hygrophilous. Oceanicity and hygrophily can also be applied to terrestrial molluscs and other invertebrates that are dominantly south-western in the British Isles, or are largely coastal and extend along its western seaboard into Scotland and the Western Isles. This is clearly not the case with *L. cylindracea*, which is almost ubiquitous in the British Isles (Kerney, 1999, p.105). That ubiquity takes it into intensely urban areas, where it occurs synanthropically in many of the older conurbations with their attendant small gardens. Such colonisations are clearly of recent origin, and in some of those cases are associated with run-off from hard surfaces. Such an opportunist species has therefore clearly been able to increase the size of its populations at speed, coupled with a demonstrably wide niche breadth.

Its diversity of occupied habitats in Britain includes, for example, the maritime cliffs of the Lizard Peninsula, ancient primieval woodland relicts on the Gloucestershire Cotswolds, ancient *Fraxineta* on the Malvern

Hills, ancient pasture woodlands near river level in Worcestershire, and on the now denuded Carboniferous Limestone outcrops of the North Wales seaboard. On the Great Orme in Caernarvonshire, very old buried shells have some *L. sempronii*-like characters (PFW, pers. obs.). A question that should be asked is whether, as a somewhat more continental species than *L. cylindracea*, *L. sempronii* occurred in Britain during the early phases of post-glacial climatic warming (such as the so-called Windermere Interstadial), when plenty of habitat for it would have been available. Its apparent absence as a fossil from the fluvial sediments of lowland English rivers is merely negative evidence. Subsequent changes in climate, including increasing oceanicity during the Iron Age, may have favoured *L. cylindracea*, leading to progressive consolidation of its British range. Where it encountered what remained of *L. sempronii*, mostly along the southern Cotswold hill fringe, it hastened its demise, either through competition or interbreeding. If the demise of a population of *L. sempronii* on Haresfield Beacon occurred over a time period <77 years (Kerney & Norris, 1972), by direct competition with *L. cylindracea*, the matter would be of some interest.

In south Gloucestershire we now have nearby evidence for this process at the present time, which provides a considerable challenge for the conservation of *L. sempronii*. I shall, in due course, be reviewing shells of *Lauria* from other areas of the Cotswold Hills, although in view of these findings, their identity may remain unknown.

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