

MICROPALAEONTOLOGY NOTEBOOK

A new UK record of *Herpetocypris brevicaudata* Kaufmann, 1900 (Cypridoidea, Ostracoda): palaeo-temperature implications

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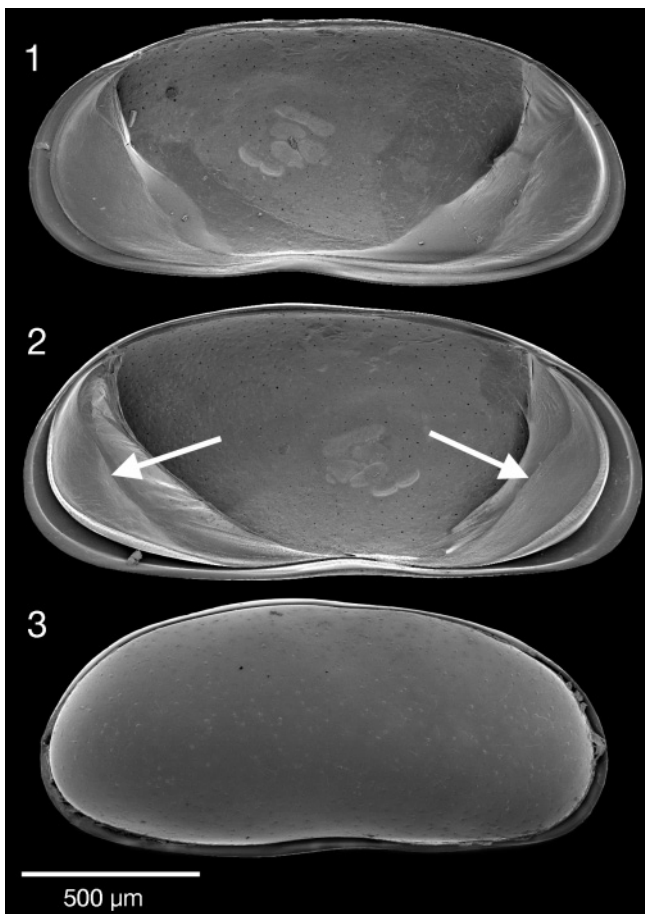
Herpetocypris brevicaudata Kaufmann, 1900 has only two previous records from the UK: from Marlborough, Wiltshire, (Lowndes, 1930) and from Garelochhead, Argyll and Bute (collected by A. J. Bruce in July 1958, and deposited in the NHM collections), two localities that correspond to those marked by Henderson (1990). A third locality, from near Sittingbourne, Kent, UK, is reported here.

Herpetocypris brevicaudata (Pl. 1; Fig. 1) and *Heterocypris incongruens* (Ramdohr, 1808) were found in a thick, brown algal layer at the bottom of a metal cattle trough, by the footpath leading from Rodmersham to Lynsted, near Dully Road, N51°

18' 46.9'' E000° 46' 32.8''. Samples taken on 6 December 2003 and 18 January 2004 produced abundant specimens of both ostracod species (i.e. tens of thousands). On 18 January 2004: temperature=3°C, pH=7.66, depth of sample 0.35 m, submerged macrophytes present. All specimens of *H. brevicaudata* were adult females, those of *H. incongruens* both adult females and juveniles.

Lowndes (1930) and Meisch (2000) suggested that *H. brevicaudata* is often mistaken for *Herpetocypris reptans* (Baird, 1835) and thus *H. brevicaudata* may be more common than records indicate. The wide calcified inner lamella (Pl. 1), the arrangement of the antenna natatory setae (Fig. 1) and the almost uniform green colouration of *H. brevicaudata* clearly separate it from *H. reptans* (Gonzalez Mozo *et al.*, 1996).

Experimental data collected by Roca & Wansard (1997) on *H. brevicaudata* from Spain determined that at 12.4°C develop-



Explanation of Plate 1.

Herpetocypris brevicaudata Kaufmann: **fig. 1.** right valve, internal (2004.444); **fig. 2.** left valve, internal (2004.444); **fig. 3.** right view of whole carapace (2004.445). Arrows mark inner edge of calcified inner lamella.

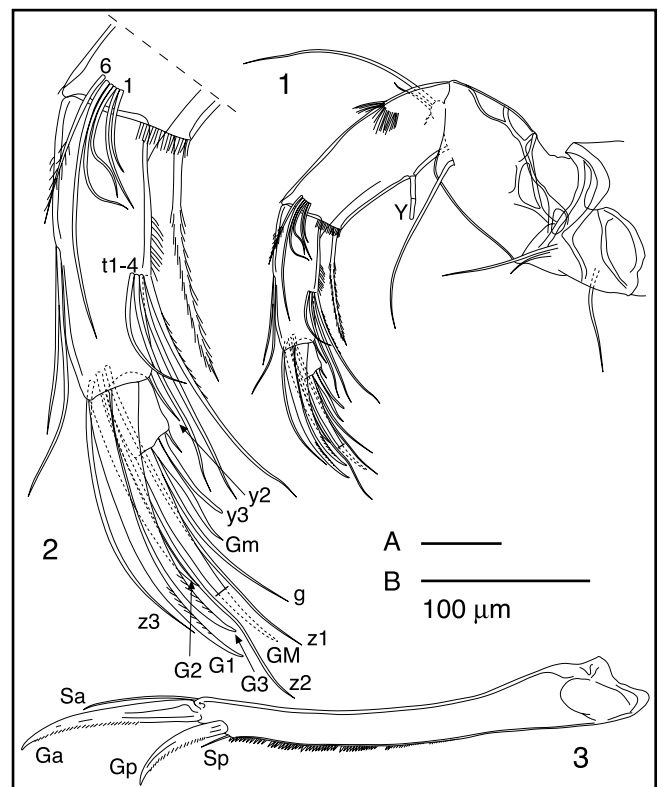


Fig. 1. *Herpetocypris brevicaudata* Kaufmann: **1,** antenna (2004.447); **2,** detail of antenna (2004.447); **3,** caudal ramus (2004.447). Scale bar A for 1 and 3, B for 2. Specimens are held in the Zoology Department, Natural History Museum, Cromwell Road, London SW7 5BD, UK.

ment is slower and survival rates lower than at higher temperatures. These experimental data, combined with the fact that other records of this species report water temperatures above 13°C (e.g. Forester, 1991; Roca & Baltanas, 1993; Beyer & Meisch, 1996), led them to suggest that fossil *H. brevicaudata* could possibly be used to estimate minimum palaeo-temperatures. However, the presence of vast numbers of *H. brevicaudata* in water of 3°C in the UK indicates that the temperature tolerance of this species is much wider than previous data suggest and that it is not a good indicator of palaeo-temperatures. The discrepancy between the field data reported here and experimental data could be due to the occurrence of two forms of this species: a warm-water and a cold-water form.

Manuscript received 15 April 2004

Manuscript accepted 20 April 2005

REFERENCES

- Beyer, G. & Meisch, C. 1996. Freshwater Ostracoda (Crustacea) collected on La Gomera (Canary Islands), with a redescription of *Cypridopsis obesa* (Brady & Robertson, 1869). *Travaux Scientifiques du Musée National d'Histoire Naturelle de Luxembourg*, **23**: 29–56.
- Forester, R.M. 1991. Ostracode assemblages from springs in the Western United States: implications for paleohydrology. *Memoirs of the Entomological Society of Canada*, **155**: 181–201.
- Gonzalez Mozo, M.E., Martens, K. & Baltanas, A. 1996. A taxonomic revision of European *Herpetocypris* Brady and Norman, 1889 (Crustacea, Ostracoda). *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Biologie*, **66**: 93–132.
- Henderson, P.A. 1990. *Freshwater ostracods*. Synopses of the British Fauna (New Series) Kermack, D. M. & Barnes, R. S. K. (Eds), **42**. Universal Book Services/Dr. W. Backhuys, Oegstgeest, Netherlands, 228pp.
- Lowndes, A.G. 1930. Some rare and little known British fresh-water ostracods. *Report of the Marlborough College Natural History Society*, **79**: 82–112.
- Meisch, C. 2000. *Freshwater Ostracoda of Western and Central Europe*. Süßwasserfauna von Mitteleuropa, **8/3**. Spektrum Akademischer Verlag, Heidelberg, Berlin, 522pp.
- Roca, J.R. & Baltanas, A. 1993. Ecology and distribution of Ostracoda in Pyrenean springs. *Journal of Crustacean Biology*, **13**: 165–174.
- Roca, J.R. & Wansard, G. 1997. Temperature influence on development and calcification of *Herpetocypris brevicaudata* Kaufmann, 1900 (Crustacea: Ostracoda) under experimental conditions. *Hydrobiologia*, **347**: 91–95.