

LARVAL OVERWINTERING IN *LESTES SPONSA* (HANS.) (ZYGOPTERA: LESTIDAE)

*L. sponsa* is generally considered to overwinter solely in diapause in the egg stage; the eggs hatch in the spring and larvae complete development in two to three months (P.S. CORBET, C. LONGFIELD & N.W. MOORE, 1960, *Dragonflies*, Collins, London; — J. PICKUP, D.J. THOMPSON & J.H. LAWTON, 1984, *Odonatologica* 13: 451-459). However, this note reports a case of *L. sponsa* larvae apparently overwintering.

On 17 March 1986, during routine sampling of a large, acid pond on a lowland heath (Skipwith Common, N. Yorks; Nat. Grid reference SE 667 376) two final instar larvae were caught, one male and one female. The head widths of the larvae were 3.81 mm and 3.93 mm for male and female respectively, which correspond closely with those recorded for final instar larvae from the three populations studied by PICKUP et al., (1984).

The average length of the larval period for the populations of *L. sponsa* studied by PICKUP et al., (1984) ranged from 68 to 83 days at spring and summer temperatures. The occurrence of final instar larvae in March, therefore, indicates that the larvae must have hatched the previous summer and overwintered presumably as penultimate or final instars.

Samples taken from the same pond on 23 May contained a number of larvae of fifth and earlier instars, as would be expected by this date in a population with the normal life history (PICKUP et al., 1984). Adults were seen flying on 11 June, again a normal date.

CORBET et al., (1960) remark that it would be interesting to know whether late instar larvae of species such as *L. sponsa*, with a diapause egg and univoltine life history, are capable of surviving winter temperatures. They

consider it unlikely, given the consistently univoltine life cycle and strictly maintained flying season of such species, and suggest that inability to survive winter temperatures may be a factor in maintaining the univoltine life history. However, the evidence here suggests that it is at least possible for late instar *L. sponsa* larvae to survive the winter in Northern England. February 1986 was particularly severe, the surface of the study pond being frozen for several weeks.

The simplest explanation for these observations is that a few late developing individuals failed to emerge in the summer of 1985, perhaps due to the fact that the summer was cool and wet in the study area. In samples taken over the winter of 1986/87 no *L. sponsa* larvae were recorded, suggesting that the overwintering in 1985/86 was probably no more than a rare chance event. Nonetheless, it is clear that *L. sponsa* larvae are, at least in some circumstances, physiologically capable of surviving winter conditions.

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