

AN UNUSUAL EMERGENCE SITE FOR  
*AESHNA CYANEA* (MÜLL.) (ANISOPTERA:  
AESHNIDAE)

December 3, 1993, an exuvia of *A. cyanea* (♀) was found in a dry corridor surrounding the moat of a 19th century fort in Poznań (western Poland). It was sitting on a brick wall, at a height of 1.7 m, 15 m from the entrance.

The bottom of the moat (6 m deep, mostly shaded by trees) is partially flooded by 0.1-0.5 m deep, stagnant water, which in dry weather is restricted to the deepest points. The vegetation is represented by grasses, *Carex* sp., *Solanum dulcamara* and *Berula erecta*. In this habitat dwell occasionally larvae of the shade-loving *A. cyanea*, a species, associated often with similar, small forest-pools (H. HEIDEMANN & R. SEIDENBUSCH, 1993, *Die Libellenlarven Deutschlands und Frankreichs*, Bauer, Keltern).

During the rainy summer of 1993, water in the moat rose and overflowed into the corridor up to a height of 0.3-0.7 m. This larva was either washed into the corridor, or it could have reached there by active swimming. Such pre-emergence travelling has been recorded in e.g. *Anax imperator* Leach (P.S. CORBET, 1962, *A biology of dragonflies*, Witherby, London). *A. cyanea* shows the nocturnal emergence rhythm, therefore the total darkness in the corridor was not an obstacle to emerge. It is not unlikely, the drop in light intensity (down to 0.1 lux on the first 7 m) triggered the pre-emergence activity (as in surface

waters on the approach of dusk), which was followed by emergence in total darkness. Under normal conditions, emergence takes place during the first hours after dusk. Another possibility would be that the endogenous rhythm itself was sufficient to induce and control the emergence in total darkness. It is worth noting, emergence was successful despite the relatively low, stable temperature (11-13°C), a factor which often causes higher mortality (CORBET, 1962, *ibid.*).

The described situation is very similar to the circumstantial evidence that often goes with the incidental records of dragonfly larvae from caves, where they have previously been washed in from surface waters, and where they sometimes are able to survive longer and even to emerge (D.J. THOMPSON & B. KIAUTA, 1994, *Opusc. zool. flumin.* 118: 1-10). For example, the repeatedly recorded emergence of *Cordulegaster bidentata* Sel. from a subterranean lake in a Valais cave, Switzerland (C. KEIM, 1991, *Recensement des odonates du Valais romand*, Keim, Martigny), i.e. another nocturnal-emergence species (B. KIAUTA, 1964, *Loški Razgl.* 11: 183-192), fits perfectly the present *A. cyanea* case.

R. B e r n a r d, Department of General Zoology, Adam Mickiewicz University, Fredry 10, PO-61-701 Poznań, Poland