

## SUBSTRATE AND TADPOLE SURVIVAL IN *EUPROCTUS A. ASPER*

PATRICK J. WISNIEWSKI

*Amphibian Breeding Centre, 38 Hesketh Road, Burscough, Lancs.*

The importance of substrate quality to young aquatic urodeles was illustrated during the 1986 breeding season by an unintentional experiment and confirmed earlier observations and suspicions. A batch of sixteen eggs from one pair of Pyrenean Brook Salamander, *Euproctus asper asper* were divided into two shallow plastic containers 22 x 16 x 8cm deep with a 4cm depth of water, constantly and vigorously aerated. A thin layer of medium-sized gravel was scattered on the floor of one container whilst the second contained no gravel. The eggs subsequently hatched but none of the tadpoles in the bare chamber survived beyond one week despite scrupulous cleanliness. In the second container, which was treated in an identical fashion, seven out of the eight young survived and have now metamorphosed.

The reasons for this can only be guessed. Newly hatched *Euproctus* larvae are rather like trout fry in behaviour. When gravel is provided they tend to wedge themselves between the stones, thus keeping their dorsal surfaces upright, facing the water surface. In the absence of gravel the larvae fall over on their sides and continue to do this until the front limbs develop. Possibly this inhibits the functioning of the gill upon which the larvae is lying, resulting in physiological stress, whilst the wedged tadpole has both gills exposed to the water current.

Whatever the cause, the effect of substrate on survivorship seems to have been dramatically demonstrated.