

than the short-lived species. *P. complanata*, which is the smallest and shortest-lived species of the Unionidae studied here, would be predicted to have the lowest lifetime fecundity.

The longevity of a unionid species will also affect the constancy of population numbers. Size-frequency distributions suggest that recruitment is irregular between years, and therefore short-lived species may exhibit more variable population changes than more persistent species. The high recruitment of juveniles between 1985 and 1987, as inferred from size-frequency plots, corresponds with the dredging of Wicken Lode during the winter of 1985/1986. Increased recruitment following a reduction in population size is often explained by reduced competition between the remaining individuals (Begon, Harper & Townsend, 1990, p. 206).

Differences in the timing of glochidia release by sympatric unionids may affect the probability of glochidia encountering particular species of host fish. Fish distributions may vary temporally with respect to migrations or breeding seasons, and some unionids may have a narrow host range (Kat, 1984). Therefore, glochidia may be released at times which maximise their chances of successful attachment and development. *Unio* spp., for example, may be particularly reliant upon perch (*Perca fluviatilis* L.) as a host, and their summer release of glochidia coincides with periods when perch move into the unionid-rich shallows to spawn within the marginal vegetation (Aldridge, in preparation). The difference between *P. complanata* and the other Anodontinae in the timing of glochidia release may be a result of differential host specificity between the two genera.

The relatively low densities of *P. complanata*, compared with the other species, may explain the high proportion (6 out of 6) of gravid, and therefore female or hermaphrodite, *P. complanata* individuals collected, in contrast to other species' sex ratios which approximated to 1:1. It is common for widely-dispersed species to become hermaphroditic in order to maximise their changes of reproductive success. Heard (1975) suggested that the Anodontinae show the greatest plasticity between populations in life histories of all the unionid subfamilies, and that hermaphroditism is a common sexual strategy. Bloomer (1930) found that 19% of an *A. cygnea* population in Sutton Park, Warwickshire, were hermaphroditic. The dioecious nature of the *Anodonta* in the present study support the theory that the sexual strategy within a species is plastic. The

low density and highly dispersed nature of *P. complanata* in the Cam system is a characteristic of all British populations of this species (Killeen, 1992). It is therefore possible that hermaphroditism is a sexual strategy typical of most British *P. complanata* populations.

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