

AN UNUSUAL POPULATION OF TOADS

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Studies of breeding populations of the common toad, *Bufo bufo*, have concentrated on aggregations consisting of hundreds or even thousands of individuals, despite the fact that most populations consist of less than 100 members (Cooke, 1975). Such studies have revealed that the number of males at a breeding site greatly exceeds the number of females, by as much as 4:1, and that the toads remain in the water for about 2 weeks (e.g. Davies & Halliday, 1979; Gittins, 1983). In this brief report, I describe a rather unusual toad population, in which the adult sex ratio was only mildly skewed towards an excess of males and in which the time spent in the water was months, rather than weeks.

This population breeds at a farmland pond in Buckinghamshire, England. From 28 February, 1983, this pond was surrounded with a drift fence and pitfall traps. Toads were collected from the traps and adjacent ground every 2 or 3 days; they were then released onto the opposite side of the fence to which they were caught after snout-urostyle length was measured.

Adult toads, greater than 50mm in length (Gittins, 1983) were first caught attempting to enter the pond on 12 March; 89% of all toads had entered the water by 2 May. As Fig. 1 shows, males tended to arrive before females; 50% of males had entered the water by 19 March, 50% of females by 12 April. Nearly 65% of females caught entering were already in amplexus, and males in amplexus were significantly longer than unpaired males. Thirty five males and 23 females migrated to the pond, giving an overall sex ratio of 1.52:1. However, the sex ratio showed week-to-week fluctuations; for example, in the first 5 weeks of the study period, males outnumbered females by as many as 3.5:1.

When in the water, the toads were unusually secretive, and were seldom seen. Details of spawning could not be collected; however, the first spawn strings were seen on 25 March.

The outward migration of adult toads began on 6 May and continued irregularly until 21 September. Only 51% of the number of males and 26% of females entering the pond were captured leaving. No tadpoles or newly-metamorphosed toadlets were seen, although juveniles estimated to be at least 1 year of age moved to and from the pond between 6 May and 3 October.

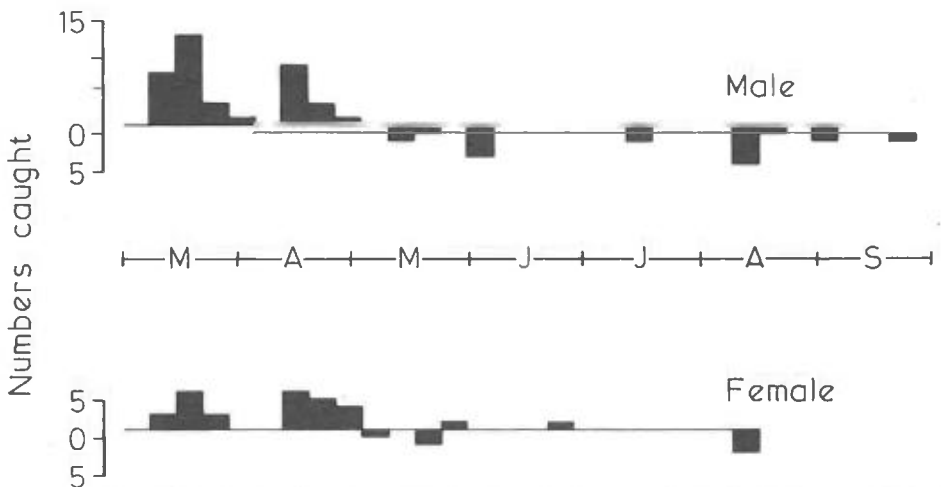


Fig. 1. Numbers of males and females caught each week. Above axis — toads entering; below axis — toads leaving. Time course runs from the beginning of March to the end of September.

The male-skewed sex ratio so typical of common toads is thought to result from the fact that males reach sexual maturity before females, females suffer higher rates of mortality and may not breed every year (Gittins, 1983). The sex ratio reported in this paper is only mildly skewed towards an excess of males, but the reason for this is not clear.

Similarly, it is difficult to account for the unusually long time spent in the water by the toads described here. Despite the fact that individuals remained in the water for months, rather than weeks, they may not have been reproductively active for the whole time. They may have remained in the water to feed, or because the long hot and dry spells in the summer delayed their migration. This latter explanation does not account for the movements of juvenile toads during the summer months.

In summary, my toads displayed a number of features in 1983 which are not usually associated with this species. Whether these features were peculiar to 1983 (e.g. climatic conditions) or are characteristic of relatively small populations is a question for further investigation.

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