
**MASS MOVEMENT AT METAMORPHOSIS IN THE
SAVANNAH SPADEFOOT, *SCAPHIOPUS HURTERII*
STRECKER'**

ARTHUR N. BRAGG, University of Oklahoma, Norman

Each spring since 1941 the writer has followed closely the breeding and tadpole development of *Scaphiopus hurterii* in several pools east of Norman.

¹Contribution from the Department of Zoological Sciences and the Oklahoma Biological Survey, University of Oklahoma, Norman.

During each of seven years that any breeding has occurred (i. e. 1941 and 1945 through 1950) social aggregations have been studied and results summarized in a series of papers. In the first of these (1) a peculiar aggregational phenomenon at metamorphosis was described but a mass movement toward the bank of the pool during transformation was not observed. In several other seasons, however, tadpoles seen in metamorphic aggregations on one day had disappeared completely from the pool twelve to twenty-four hours later. In one case predation was suspected but this hardly seemed likely in view of the observation that such massed tadpoles scattered quickly and widely when disturbed.

During the years it became gradually more evident that most metamorphosis in this form actually occurred at night. Accordingly, in 1950 special effort was made to be at a pool at the right time. When metamorphosis was judged imminent, the writer prepared to watch through the night if necessary. When first noted just after sunset, all tadpoles in the pool selected (pool D of former papers) were in two metamorphic aggregations near the shore-line. At nine o'clock the first few were noted on the bank by W. N. Bragg who called the writer from the area of the second (and larger) aggregation. The emergence of every tadpole in this mass took place within ten minutes. All but a few stragglers also emerged during this time from the larger aggregation in another part of the pool. Within fifteen minutes at the most, thousands of young spadefoots were on the bank and some were already hiding beneath objects near the shore-line and few if any tadpoles were left in the water. The next morning all had disappeared. A search of half an hour near the pool did not yield a single individual.

It is obvious, therefore, that the sudden disappearance over night of tadpoles of *S. hurterii* is at least sometimes due to a mass migration at metamorphosis followed by a wide scattering of the young toads before morning. While it cannot be considered as proved that these animals always behave in this manner, the observations strongly suggest that this is a characteristic and typical pattern. This interpretation is consistent with the nature of these animals as deduced from a long experience with them.

This phenomenon has never been described for other species, at least in North America. There is no evidence of it in other species of spadefoot toads although one might, perhaps, expect it in the closely related *S. h. holbrookii* and perhaps in *S. couchii*. If it occurs in *S. hammondi* or *S. bombifrons* it must be rare, especially in the latter. The writer has seen metamorphosis of both of these occurring in daylight on several occasions, sometimes from cannibalistic aggregations; but no suggestion of a mass migration to the bank in these forms has been observed.

LITERATURE CITED

1. BRAGG, ARTHUR N., 1944. Observations on the biology and natural history of Anura XIII. Breeding habits, eggs, and tadpoles of *Scaphiopus hurterii*. Copeia 4: 230-240.