

Distribution of Salamanders of the Genus *Ambystoma* in Hardin County, Ohio¹

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ABSTRACT. A survey of vernal, pool-breeding *Ambystoma* was conducted during the springs of 1984-1986 in Hardin County, Ohio. Four species (*A. jeffersonianum*, *A. maculatum*, *A. texanum* and *A. t. tigrinum*) and several *Ambystoma* hybrids were collected. Only *A. texanum* had previously been reported from Hardin County. *Ambystoma texanum* dominated collections from the Blanchard River and Hog Creek drainages; *A. maculatum* and *A. t. tigrinum* were more common in the Scioto River drainage. These differences in distribution are probably due to variations in topography and vernal pool depth.

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INTRODUCTION

Salamanders of the genus *Ambystoma* (Ambystomidae) are widely distributed throughout the United States where they stay underground for most of their lives (Conant 1975). Blem (1972) captured specimens of the small-mouthed salamander (*Ambystoma texanum*) at two sites in Hardin County (Blanchard and Taylor Creek townships). A third specimen from Liberty Township was deposited in The Ohio State University Museum of Zoology. No published records of other *Ambystoma* are known for the county.

MATERIALS AND METHODS

An extensive survey of breeding salamanders in Hardin County was conducted from February through May, 1984-1986. Screen funnel traps (diam. 20 cm; length 47 cm) (Rice, pers. comm.) were placed in vernal breeding pools as soon as the ice melted in February. Pools were selected in areas that appeared suitable as salamander habitat. Traps were checked 24 to 48 h after being placed; captured salamanders were identified and counted. Representative specimens of each species were returned to the laboratory for identification and preservation. These specimens were deposited in the Ohio Northern University Museum Collection (ONU-HCA).

Ambystoma salamanders often form triploid and tetraploid hybrids (Uzzell and Goldblatt 1967). These hybrids are difficult to identify in the field. Ploidy of suspected hybrids was confirmed using the erythrocyte measurement technique of Downs (1978).

SPECIES LIST AND DISCUSSION

Ambystoma jeffersonianum. Taken from only one location in Washington township (ONU-HCA 013). The species probably should be considered rare in Hardin County.

Ambystoma maculatum. McDonald (ONU-HCA 008), Roundhead and Taylor Creek townships; reported by Rice (pers. comm.) from Hale township. This species appears to breed later in the season and in deeper water than the more common *A. texanum*. However, it is common in its breeding areas.

Ambystoma texanum. Goshen (ONU-HCA 005), Liberty (ONU-HCA 001), Marion, McDonald (ONU-HCA 007), Roundhead and Washington (ONU-HCA 003) townships. It was also reported by Blem (1972) from Blanchard (OUVC 5060.1-3), Liberty (OSM 1070.1) and Taylor Creek (OUVC 5058, 5059.1-4) townships and by Rice (pers. comm.) from Hale and Dudley townships. Although reported as rare by Blem, this is probably the most common ambystomatid in Hardin County.

Ambystoma t. tigrinum. McDonald (ONU-HCA 010), Roundhead, Taylor Creek (ONU-HCA 011) and Washington (ONU-HCA 012) townships. It has also been observed by Rice (pers. comm.) in Hale Township. While not as common as *A. texanum*, 50 to 60 animals were occasionally collected from a single pool during one trapping session.

Neither *A. laterale* nor *A. opacum* have been identified in Hardin County. Since *A. opacum* is a fall-breeding species, it would not be collected in a spring survey. However, several salamanders that superficially appeared to be *A. laterale*-*A. texanum* hybrids (ONU-HCA 014) (Downs, pers. comm.) were collected from a site in McDonald Township. Individuals with characteristics of *A. laterale* and *A. jeffersonianum* were collected in Roundhead Township. These may be *A. tremblayi* or *A. platineum*.

Northwest Ohio is within the range of hybrid ambystomatids (Uzzell and Goldblatt 1967, Downs 1978). Polyploid hybrids in Hardin County appear to be concentrated on both sides of the St. Johns Moraine that separates the Scioto and Miami drainage basins. Hardin County appears to be a fertile area for further studies on the interrelationships of ambystomatid species.

Variation in species numbers was noted in the different river drainage basins of Hardin County (Table 1). In the Blanchard River and Hog Creek drainages (Lake Erie drainage basin), *A. texanum* was the dominant species. In the Scioto River drainage (Ohio River drainage basin), *A. maculatum* and *A. t. tigrinum* were dominant. This variation may be due to differences in topography. The Blanchard River and Hog Creek drain relatively flat, wet woods areas; the Scioto River drains an extensive

TABLE 1
Distribution of *Ambystoma* in two Hardin County drainage basins, 1984-1986.

| Species | Blanchard River-Hog Creek | | Scioto River | |
|--------------------------|---------------------------|------------|--------------|------------|
| | N | % of total | N | % of total |
| <i>Ambystoma texanum</i> | 805 | 76.1 | 246 | 23.9 |
| <i>A. jeffersonianum</i> | 7 | 100.0 | 0 | 0.0 |
| <i>A. maculatum</i> | 4 | 1.9 | 208 | 98.1 |
| <i>A. tigrinum</i> | 23 | 13.6 | 146 | 86.4 |
| TOTAL | 839 | 58.0 | 607 | 42.0 |

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moraine area. Vernal pools in the Scioto drainage tend to be deeper than those in the more northern drainages.

The relative abundance of mole salamanders in Hardin County would appear to be considerably higher than noted by Blem (1972). The increased efficiency of spring trapping, as opposed to the site-searching technique used by Blem, was probably responsible for the difference.

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