

A SURVEY FOR *TRICHINELLA SPIRALIS* IN MIDDLE TENNESSEE SWINE

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ABSTRACT

A total of 154 hog diaphragms collected from Jones Locker, Murfreesboro, Tennessee and Batey's Slaughter House, Woodbury, Tennessee, were examined for *Trichinella spiralis* using compression, modified pooled sample, and maceration techniques. Recovery methods were tested by xenodiagnostic infection of 24 white mice with this nematode and subsection of these rodents at varying infection periods to these methods. The results of this study indicate that this helminth is an insignificant health factor in swine raised in Middle Tennessee.

INTRODUCTION

Trichinosis occurs principally in the United States, Canada, and Eastern Europe (Gould, 1970). In 1977 there were no cases of human trichinosis reported in Tennessee (Center for Disease Control, 1978). The purpose of this study was to determine the incidence of *Trichinella spiralis* in swine diaphragms.

MATERIALS AND METHODS

A total of 154 hog diaphragms, 80 samples from Jones Locker, Murfreesboro, Tennessee, and 74 from Batey's Slaughter House, Woodbury, Tennessee, were collected from November 26, 1975 to February 7, 1976.

A 25 gm. sample was removed from the crura diaphragm from each hog, rolled in boric acid and placed in a plastic bag until it was examined. The compression (Gould, 1970) modified pooled sample digestion (Zimmerman, 1968; Light, personal communication, 1975), and maceration (Levin, 1941) methods were used to examine the specimens.

These methods were tested by xenodiagnosis of 24 white mice fed 1.5 gm of tissue infected with *T. spiralis*. Incubation periods were 7, 21, and 49 days. All rodents were the same age, strain, and sex. At the end of each time period 8 mice were examined using these methods. All hosts were positive for larvae.

RESULTS AND DISCUSSION

No *T. spiralis* larvae were isolated by compression, digestion, and maceration techniques from the dia-

phragms collected during this investigation. Studies done in Tennessee indicate that trichinosis is not a swine health problem; however, the one infection found here was from a hog raised on an Indiana farm (Bishop, personal communication, 1976; Zimmerman and Zinter, 1971).

Most Southern hogs are grain fed and incidence of *T. spiralis* is generally lower in this region as compared to other areas in the United States (Harrell and Johnston, 1939). The results of the current investigation substantiate the previous studies.

Probable reasons for reports of low incidence of *T. spiralis* in Tennessee swine are:

1. Inadequate test sensitivity: It is possible some infections exist below the limit of the tests.
2. Laws regulating raw garbage feeding: Laws enacted in 1962 to eradicate hog cholera have directly reduced the availability of garbage as a source of infection.
3. Improvement of farming methods: Many swine are now pen raised and grain fed reducing exposure to wildlife reservoirs of infection.

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ARMADILLO FOUND IN RHEA COUNTY, TENNESSEE

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ABSTRACT

A nine-banded armadillo was found in Rhea County, Tennessee, about three and one-half miles west of Dayton on February 3, 1980. Whether it had migrated or been transported to this location is unclear.

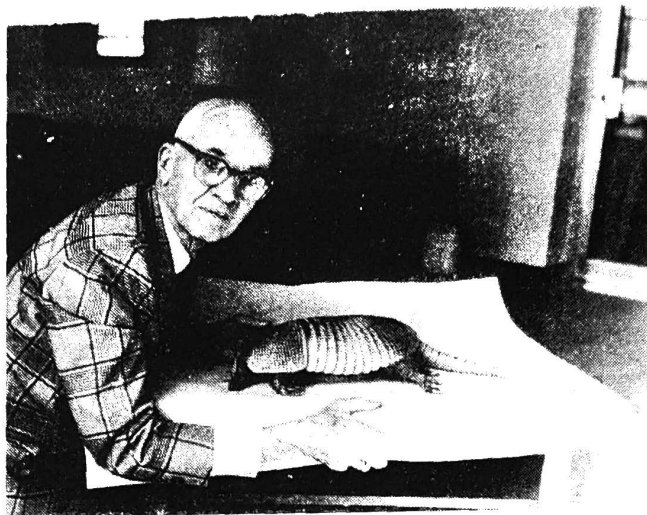
INTRODUCTION

A nine-banded armadillo was found in Rhea County, Tennessee about three and one-half miles west of Dayton on February 3, 1980. It apparently had been run over by an automobile as one side of its shell was badly broken. Someone tossed it off of the main road into an old driveway, which prevented further damage. It was found by a local man and reported to Willard L. Henning, Curator of the Bryan College Museum.

DESCRIPTION AND DISCUSSION

The armadillo was a full grown specimen but not a large one. It weighed 8 pounds and 2 ounces, the head and body length was 15 inches, and the tail length was 13 inches. It was a female having three embryos about two and one-half inches in length. Presumably there was a fourth embryo which probably was mashed by the impact of the car injury. The specimen is being prepared for mounting for the Bryan College Museum collection.

Armadillo populations are reported from Texas to



southern Kansas, and in Florida. A recent report indicates that they may occur in southern Georgia as far north as Columbia, Macon and Augusta. It is believed that this specimen was brought up from Florida and turned loose locally. Its activity during the middle of winter can be understood from reports that they do not hibernate, and the weeks prior to finding this specimen were weeks of mild weather of light freezes, generally. This specimen could have scratched for its food in the wooded area.

CHARACTERISTICS AND DETERMINANTS OF THE FISHERIES RESOURCES OF THREE COLD TAILWATERS IN TENNESSEE

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ABSTRACT

Comparison of biological, water quality, and physical characteristics of Apalachia, Norris, and Chilhowee tailwaters indicates that the differences between these regulated streams and comparable but unregulated streams are due to a host of interrelated factors. Aquatic insect diversity is most strongly influenced by seasonal oxygen deficits. Fish species composition has been changed by altered temperature regimes and seasonal oxygen deficits. Standing crops of fish and aquatic insects are directly related to water mineral

quality, substrate composition, and minimum instantaneous flows. Relatively infertile streams with adequate minimum flows can be as productive as more fertile streams with inadequate minimum flows.

INTRODUCTION

In the Tennessee Valley, there are 33 storage impoundments with hypolimnal discharges and sufficient storage volume to cause the stream below the dam (reservoir tailwater) to differ significantly from both preimpoundment conditions in the same area and from