

THE DISTRIBUTION OF THE FUNGUS, *BASIDIOBOLUS RANARUM* EIDAM, IN FISH, AMPHIBIANS AND REPTILES OF THE SOUTHERN APPALACHIAN REGION

ABSTRACT

One hundred seven specimens of fish, amphibians and reptiles representing forty-one taxa and a wide variety of ecological relationships were sampled by the fungus, *Basidiobolus ranarum* Eidam in the states of Kentucky, Georgia, Tennessee, North Carolina and South Carolina. *B. ranarum* was isolated from seven species of amphibians from western Kentucky and eastern Tennessee. *Trans. Kansas Acad. Sci., Vol. 80: (1-2)*

INTRODUCTION

This study was undertaken to determine the taxonomic status and geographical distribution of the fungus, *Basidiobolus ranarum* Eidam in fish, amphibians and reptiles of the southern Appalachian Mountain region of the United States. Eidam (1886) first isolated *B. ranarum* from the intestines of frogs and lizards in Europe. It was also isolated from European salamanders (Levisohn, 1927) and from decaying plant materials in Wisconsin and Maryland (Drechsler, 1964). There are few works on the geographic distribution of this fungus, in North America, except those of Hutchison and Nickerson (1970) and Nickerson and Hutchinson (1971), who sampled fish, amphibians and reptiles from the Ozark Plateaus, Ouachita Mountains and Mississippi River Valley in Arkansas and Missouri. King et al., (1973) obtained isolates from amphibians and reptiles in Mexico.

METHODS

In April 1973, one hundred seven fish, amphibians and reptiles were collected in Kentucky, Tennessee, Alabama, Georgia, N. Carolina and S. Carolina and surveyed in the field for *Basidiobolus ranarum* using the isolation method of Hutchison and Nickerson (1970). All specimens sampled were preserved and placed in the vertebrate collection at the Milwaukee Public Museum (MPM). Precise locality data for all specimens sample are available upon request.

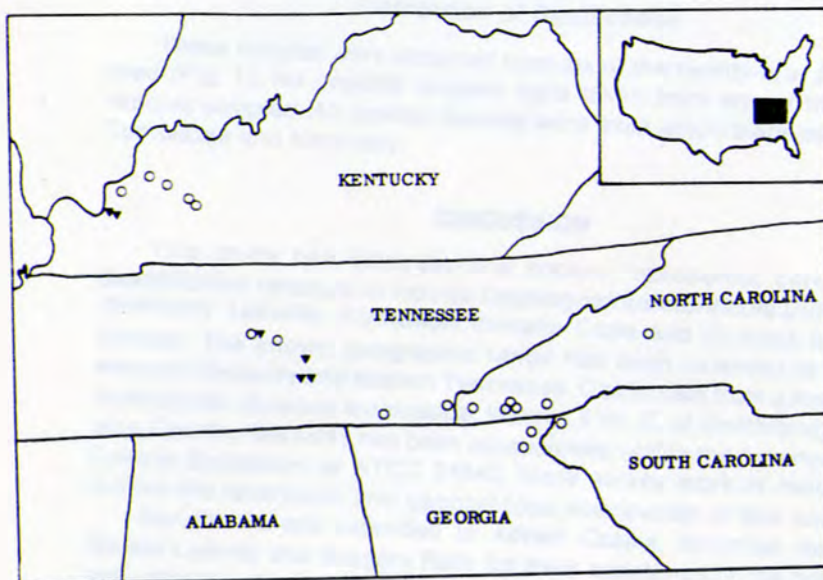


FIGURE 1. Triangles indicate the sites where isolates were obtained. Dots indicate non-productive sampling sites.

RESULTS

Thirteen of the 107 samples yielded isolates of *Basidiobolus ranae*. The following are the specimens sampled compared with the number of fungal isolates (no. of specimens/no. of isolates).

Fish: *Campstoma anomalum* 3/0, *Cottus carolinae* 2/0, *Etheostoma atripinne* 4/0, *Ictalurus platycephalus* 3/0, *Lepomis auritus* 3/0, *L. macrochirus* 2/0, *Nocomis leptcephalus* 3/0, *Notropis chrysocephalus* 3/0, *N. cocogenus* 3/0, *N. leuciodus* 2/0, and *Noturus insignis* 3/0.

Salamanders: *Ambystoma opacum* 2/0, *Desmognathus fuscus* 6/1, *D. monticola* 2/, *D. ochrophaeus* 2/0, *D. ocoee* 3/0, *Desmognathus* sp. 3/0, *Eurycea bislineata* 4/1, *E. longicauda* 5/1, *E. lucifuga* 2/0, *Leurognathus marmoratus* (larval) 1/, *Notophthalmus viridescens* 1/0, *Plethodon glutinosus* 5/4, *P. jordani* 1/0, *P. dorsalis* 4/4, and *Pseudotriton* sp. larvae (probably *P. ruber*) 2/0.

Anurans: *Bufo woodhousei* 7/0, *Hyla crucifer* 2/0, *H. versicolor* or *H. chrysoscelis* 1/0, *Rana catesbeiana* 5/, and *R. clamitans* 2/1.

Lizards: *Cnemidophorus sexlineatus* 1/0, *Eumeces fasciatus* 2/0, *Lygosoma laterale* 1/0, and *Sceloporus undulatus* 3/0.

Snakes: *Agkistrodon contortrix* 1/0, *Coluber constrictor* 2/0, *Diadophis punctatus* 1/0, *Elaphe guttata* 1/0, *Natrix sipedon* 1/0, and *Thamnophis sirtalis* 1/0.

These isolates were obtained from six of the twenty-four sites sampled (Fig. 1). No positive isolates were taken from any of the fish or reptiles sampled. All positive isolates were from amphibians sampled in Tennessee and Kentucky.

DISCUSSION

This study has extended the known "taxonomic carriers" of *Basidiobolus ranarum* to include *Desmognathus monticola* Dunn, *Rana clamitans* Latreille, *Plethodon dorsalis* Cope and *Eurycea bislineata* (Green). The known geographic range has been extended to include western Kentucky and eastern Tennessee. One isolate from a long-tailed salamander, *Eurycea longicauda*, taken 1.8 mi. E. of Smithland, Livingston County, Kentucky has been accessioned within the American Type Culture Collection as ATCC 24840. More survey work is required to outline the taxonomic and geographical distribution of this fungus.

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