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NOTES

MEXICAN ISOLATES OF *BASIDIOBOLUS RANARUM* EIDAM.—The fungus *Basidiobolus* (Entomophthorales) has been isolated as a saprobe, primarily from plant debris and excreta of amphibians and reptiles. The majority of isolates are from Europe, Southern Asia, Africa and the Eastern United States. Benjamin (Aliso 5: 223–233, 1962) obtained three isolates of *B. microsporus* from Southern California, and Nickerson and Hutchison (Amer. Midl. Nat. 86: 500–502, 1971) obtained 169 isolates of *B. ranarum*, principally from Arkansas and Missouri.

In March 1971, 74 amphibians and reptiles were collected in northeast Mexico and surveyed in the field for *Basidiobolus*. Method of isolation followed Hutchison and Nickerson (Mycologia 62: 585–587, 1970). YpSs agar (yeast extract, 4 g; $MgSO_4$. 7 H_2O, 0.5 g; soluble starch, 15 g; K_2HPO_4, 1 g; agar, 20 g; H_2O, 1 liter)

TABLE 1

Collection and zygospore data on eight Mexican isolates of *Basidiobolus ranarum*

Isolate number	Host	Location	Zygospore diameter (range in μ)	Zygospore wall character†
Mex-22	*Bufo marinus*	44.7 mi. E of Valles, San Luis Potosí, near Mex 70*	21–30	S
Mex-31	*Rana pipiens*	44.7 mi. E of Valles, San Luis Potosí, near Mex 70	28–46	U
Mex-41	*Cnemidophorus gularis*	1.5 mi. E of Tamazunchale, San Luis Potosí, near Río Moctezuma	21–30	S>U
Mex-47	*Cnemidophorus gularis*	1.5 mi. E of Tamazunchale, San Luis Potosí, near Río Moctezuma	16–34	S
Mex-49	*Cnemidophorus gularis*	1.5 mi. E of Tamazunchale, San Luis Potosí, near Río Moctezuma	16–32	S
Mex-57	*Bufo valliceps*	<10 mi. N of Tamazunchale, San Luis Potosí, near Mex 85	18–34	S<U
Mex-65	*Ameiva undulata*	6 mi. S of Tamazunchale, San Luis Potosí, near Mex 85	18–34	S=U
Mex-68	*Rana pipiens*	0.8 mi. S of 5 de Mayo, Tamaulipas, near Mex 85	16–30	S

* Mexican National Highway.
† S = smooth, U = undulate.

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in 60 mm presterilized, disposable Petri plates was used. Instruments were flame sterilized.

The eight isolates obtained were transferred to YpSs agar slants and grown at 25°C for conidial and zygospore observations. Lactophenol-cotton blue mounts were prepared at 24-hr intervals over a four day period for conidia observations, and at two weeks for zygospore observations.

Collection and zygospore data are presented in table 1. Primary globose conidia produced secondary globose conidia and vegetative hyphae in all isolates. In isolate Mex-68 conidia germinated by multiple germ hyphae. Segmentation of conidial contents and production of exogenous microspores described by Benjamin (1962) were not observed. The *Streptomyces*-like odor, commonly associated with *B. ranarum*, was produced only by isolate Mex-31.

Although zygospore measurements of all isolates except Mex-31 indicated possible affinity with Benjamin's isolates, absence of microspores precluded identifying them as *B. microsporus*. All isolates have therefore been identified as *B. ranarum* Eidam.

Financial support was provided by Arkansas State University Research Grant 511–665 and Max Allen's Zoological Gardens. Thanks are also due James Pyland for aid in collecting and preserving specimens.—*Douglas S. King, Max A. Nickerson and James A. Hutchison, Department of Botany, University of Kansas, Lawrence, Vertebrate Section, Milwaukee Public Museum, Wisconsin, and Division of Biological Sciences, Arkansas State University, State University.*

OBSERVATIONS ON THE NITROGEN FIXING POTENTIAL OF THE SURFACE WATERS OF A LARGE IMPOUNDMENT.—Many of the details of lacustrine nitrogen fixation under regionally varying surface water conditions are unknown. Here we provide information of comparative limnological interest on the nitrogen fixing potential of the surface waters of Keystone Reservoir, Oklahoma, and the annual cycle there of phenomena, which can control the rate of N_2 fixation.

We used the acetylene reduction technique to obtain a quick and sensitive assay for N_2 fixation potential. The use of this method has its rationale in the fact that the same enzyme system responsible for N_2 fixation reduces acetylene to ethylene (Schölhorn, R. and R. H. Burris, Federation Proc. 25: 710–722, 1966).

We monitored environmental variables known to affect the rate of N_2 fixation (W. D. P. Stewart, Nitrogen fixation in plants, Athlone Press, London, 168 pp. 1966): temperature, light as Secchi disc transparency, and the concentrations of inorganic nitrogen and examined the phytoplankton microscopically to learn what species of algae might be correlated with fixation.

Two sampling stations were established over the old river channel on each arm of the reservoir. Both stations represent the furthest downstream the water mass in each arm travels before it mixes with the water of the other (Rex L. Eley, Ph.D. Thesis, Okla. State Univ., Stillwater, 240 pp. 1970). Observations were made at two to four week intervals at both stations from 12 Feb., 1969 through 28 Jan., 1970. Water temperature was measured with an Applied Research Model FT 3 Hydrographic thermometer.

Water samples for chemical analyses and plankton samples were collected with a plastic Kemmerer bottle at a depth of 50 cm. Lake water was filtered in the field through 0.45 nm membrane filters, transferred into polyethylene bottles, and transported to the laboratory on dry ice. Particulate nitrogen in 300 to 1000 ml of lake

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