BRIEF ARTICLES

CENOCOCCUM GRANIFORME IN NEW ZEALAND

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Cenococcum graniforme (Sow.) Ferd. & Winge has not been recorded from New Zealand (Trappe, **1964**). During my studies on South Island, however, I discovered it forming its typical, black mycorrhizae with *Nothofagus solandri* var. *cliffortioides* and *Pinus radiata.*

The *Cenococcum* mycorrhizae of *Nothofagus* were found in the Craigieburn Range of the Southern Alps (43°12′ S lat) in a dense, old-growth forest with good regeneration. Sclerotia and hyphae of the fungus were also present in the soil near roots. The mean annual temperature at this site is 46 F, and annual precipitation averages 50 inches (Morris, **1965**). *Cenococcum* mycorrhizae were detected on pines about 50 years old in a windbreak at Lincoln College near Christchurch (43°38′ S lat). The mean annual temperature here is 52 F, precipitation 26 inches. In the case of pines, this type of mycorrhiza was relatively rare, and no sclerotia were observed in the soil.

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COMMENTS ON THE DISTRIBUTION OF BASIDIOBOLUS RANARUM

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Since Eidam's (**1886**) discovery of *Basidiobolus ranarum* Eidam in the intestines of frogs and lizards (Levisohn, **1927**), few reports

have shown the distribution of the fungus in other ectothermal animals. Besides the animals listed above, Levisohn (**1927**) isolated *B. ranarum* from toads, salamanders and slowworms (legless lizards). Drechsler (**1964**) isolated the fungus from decaying plant materials.

Recently a number of ectothermal animals were collected for the Arkansas State University museum and we were allowed to survey these animals for *B. ranarum.*

Various techniques have been used to isolate *B. ranarum.* Thaxter (**1888**) and Drechsler (**1956**) filtered the organism from water which contained the excrement of frogs; Olive (**1907**) collected spores on bread cubes placed near material removed from the intestines of frogs. Drechsler (**1964**) isolated the fungus by canopying Petri plates with decaying detritus.

Digested material, when present, was removed directly from the intestines of dissected turtles and snakes and placed in the tops of inverted Petri plates containing YpSs medium (yeast extract, 4 g; soluble starch, 15 g; K_2HPO_4, 1 g; $MgSO_4 \cdot 7H_2O$, 0.5 g; agar, 20 g; H_2O, 1 liter). Small colonies resulting from single spores propelled from below were easily transferred to fresh media without contamination.

Thirty-three turtles and fourteen snakes were surveyed. After the name of each species is the number dissected as compared with the number of fungal isolates (No. of specimens/No. of isolates). In many cases the intestinal tract was void of any material. Attempts to isolate the fungus from the lining of visceral parts by the method described above were unsuccessful. Turtles.—*Chelydra serpentina* (3/2), *Graptemys geographica* (1/0), *Pseudemys scripta elegans* (14/1), *Sternothaerus odoratus* (11/0), *Terrapene carolina* (2/1), *Trionyx spiniferous* (2/0). Snakes.—*Agkistrodon piscivorus* (1/0), *Crotalus horridus* (1/0), *Cylindrophis rufus* (1/0), *Elaphe obsoleta* (4/0), *Haldea striatula* (1/0), *Lampropeltis getulus* (1/0), *Natrix fasciatus confluens* (2/0), *Thamnophis proximus* (2/1), and *Thamnophis sirtalis* (1/0).

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TWO NOTEWORTHY MEMBERS OF CATENARIACEAE FROM INDIA

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During the course of studies on aquatic fungi from Uttar Pradesh, a few interesting species were isolated occurring frequently in the soil samples from various locations. Comparative observations on the morphology and life cycle indicated that one of them is an undescribed species of the genus *Catenaria* Sorokin. Also, the other fungus, *Catenophlyctis variabilis* Karling, was found regularly in these soil samples. Observations on them are described here.

A new species of Catenaria Sorokin.—On keratinic bait a small, round to oval thallus develops at first which extends further and differentiates gradually into globose to oval zoosporangial initials connected by tubular connectives and separated by cross walls. The fungus thus forms a eucarpic, polycentric thallus. The hyaline zoosporangia are sometimes observed to possess simple, fine rhizoids, which are conspicuously absent on the isthmuses (FIG. 1). Each sporangium develops a papillate outgrowth, which develops into one or more exit tubes (FIG. 2), whose apex is filled with a material of unknown chemical composition (FIG. 3). Numerous small, bright yellow, refracting bodies are embedded in the cytoplasm, which represent the probable number of zoospores destined to be produced by the zoosporangium. Several changes occur in the cytoplasm with the progressive maturation of the sporangium. These include the formation of a vacuole and a gradual condensation of the cytoplasm followed by cleavage into the zoospore initials which enclose a refractile globule. Meanwhile, the site of the exit tube becomes