



Is *Sirolopidium zoophthorum* the animal eater its name suggests? New evidence of parasitism.

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Sirolopidium zoophthorum

(Sirolopidiaceae, Lagenidiales, Phycomycetes)

First encountered in oyster and clam larvae by Davis and Loosanoff at Milford in 1954. (Davis, H.C., V.L. Loosanoff, W.H. Weston and C. Martin.1954. Science 120: 36-38)

Isolated and named by HS Vishniac. (Vishniac, H.S. 1955. Mycologia 47: 633-645)

“Rediscovered” at Milford in 1995 in *Argopecten irradians irradians* larvae.

Observed repeatedly since then. Present in most larval cultures examined (enzootic) but has not been tied to mass mortalities.

Clonal pure cultures obtained from affected larvae.

So far not reported from scallop or other shellfish habitats in Long Island Sound.



Developing fungus thallus in bay scallop larva



Fungus thallus emerging from bay scallop larva on enriched seawater agar

...many thanks to Brian King of the Sound School for his patience with balky zoospores and to Jim Widman for the late season larvae.

Challenge(10-27-2000): *Argopecten* larvae: zoospores of *Sirolopidium*

Larvae: 72-hour, “Scallop Population 10-24-2000”

Sirolopidium innoculum: recently released zoospores from pure culture

Treated: 200 animals in 1000 mL of 0.45 um filtered seawater [triplicate]

Untreated control: 200 animals in 1000 mL of 0.45 um filtered seawater [single]

Experiment terminated at 96 hours

Control(1): 173 larvae recovered, 161 live, 12 dead, thalli not detected.

Treated(1): 12 (?) larvae recovered, 4 live, 8 dead, thallus detected in 5 of the dead larvae.

Treated(2): 67 larvae recovered, 33 live, 34 dead, thalli detected in 29 of the dead larvae.

Treated(3): 56 larvae recovered, 3 alive, 53 dead, thalli detected in 42 of the dead larvae.

S. zoophthorum was reisolated from experimentally infected larvae.

Conclusions

Microscopic evidence continues to support Loosanoff’s initial contention that *Sirolopidium zoophthorum* is parasitic in bivalve larvae. The destruction of the soft tissues of *Argopecten irradians larvae* by this fungus appears to be rapid and complete. Detailed histological studies are needed.

While the results of the preliminary trial presented here seem to support the conclusion that *S. zoophthorum* is indeed parasitic in bay scallop larvae these experiments need to be repeated. Without such confirmation, the criteria for pathogenicity established by Robert Koch cannot be fully satisfied.