Transactions of the Illinois Academy of Science
(1987). Volume 80, 3 and 4, pp. 349-350

THE ENDOZOIC DISPERSAL OF MYXOMYCETE SPORES BY *ONICUS ASELLUS* L. (CRUSTACEA)

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ABSTRACT

Oniscus asellus L. (Crustacea) acts as an agent of endozoic dispersal of *Physarum viride* (Bull.) Pers. (Myxomycetes).

INTRODUCTION

There is little information on the ecology and spore dissemination of myxomycetes despite the wealth of floristic and taxonomic data. According to Brodie and Gregory (1953) wind, rain, and arthropods serve as agents of dispersal in the myxomycetes with wind being the most important of the three. Gray and Alexopoulos (1968) state that the significance of arthropods as the means of spore dispersal is not known. Ing (1967) gives an account of the organisms using myxomycetes as a source of food. He observed *Trichoniscus pusillus* Brandt and *Oniscus asellus* L. feeding on *Trichia varia* Pers. and *Arcyria denudata* (L.) Wettst. Roubic and Wheeler (1982) reported that members of the genus *Creagrophorus* (Coleoptera)[1] feed on epigeous fungi and slime molds. Snails (*Limax* sp.) were observed eating both plasmodia and fructifications of *Symphytocarpus flaccidus* (Morgan) B. Ing & Nann.-Brem. (Eliasson, 1981). This author also observed some unidentified beetles covered with spores on sporangia of several species of myxomycetes and concluded that insects may be an important agent of dispersal.

Although epizoic dispersal is of common occurrence, only a few reports of endozoic dispersal appear in the literature. Upon dissection of several specimens of *Trichoniscus*, Ing (1967) found myxomycete spores unbroken and apparently unaffected by diges-

[1]According to Wheeler this is a member of the Coleoptera: Leiodidae.

tion in the digestive tract, concluding that woodlice act as agents of dispersal of myxomycete spores. Keller and Smith (1978) observed that the mite *Tyrophagus putrescentiae* Shank ingested spores of *Didymium* sp. which were viable after passing through the digestive tract of the mite.

MATERIALS AND METHODS

During a recent follow-up study of the myxomycetes of Blackhawk State Park, Rock Island, Illinois (Troll, 1975). I observed woodlice, *Oniscus asellus* L., feeding on the fructifications of *Stemonitis fusca* Roth and *Physarum viride* (Bull.) Pers.

In order to determine if this species acts as an agent of dispersal of myxomycete spores I collected several specimens along with the slime molds, put them into a large Petri dish containing moistened paper toweling, and placed them into a dark cabinet. After 24 hours all slime mold sporangia were devoured. After another 24 hours I examined the gut contents of several specimens and their fecal pellets. Both contained myxomycete spores. Subsequently, using sterile materials (except the fecal pellets), I placed some paper toweling into a Petri dish, added a thin slice of partly decayed, sterilized wood, and inoculated it with a mixture of fecal pellets and water.

The contents of the Petri dish were observed daily except on weekends. A few drops of sterile water were added occasionally to prevent the wood from drying out. After 5 weeks and no observable changes, I ceased the addition of water but continued intermittent observations.

RESULTS AND DISCUSSION

After 10 days I found a sparse stand of *Physarum viride* sporangia on the paper toweling, but no *Stemonitis*.

Perhaps the microenvironment was not suitable for the *Stemonitis* under these experimental conditions and no conclusion as to the viability of *Stemonitis* spores can be drawn. However, it is clear that the *Physarum* spores in the fecal pellets germinated and subsequently produced typical sporangia, proving that *Oniscus asellus* disperses the spores via the ingestion-defecation route.

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