

October 29, 1984

Dr. John M. Cassady, Professor and Head
Department of Medicinal Chemistry and Pharmacognosy
Purdue University
West Lafayette, Indiana 47907

Dear John:

Enclosed is our accession records for the last two shipments (Polytrichum and Anomodon). The determinations for genera of blue-green algae present in the moss samples of Anomodon are mine, and need confirmation since my experience with this group of plants is very limited. Confirmations of my algae identifications may take another 3 weeks which is why I finally decided to go ahead and send these records to you as they now are.

Blue-green algae are not the only algae present in mosses. I have noted an abundance of green algae growing on the leaves of Polytrichum ohioense. Green algae have about as much in common with blue-green algae as ferns with flowering plants. In other words, they are quite different. Dan Norris recently referred me to some literature on blue-green algae in the moss Funaria, and in pursuing the references, I noted one paper on the epiflora of the leaves of Polytrichum commune (Amer. J. Bot. 70(5): 712-713). The authors (D.C. Scheirer and H. Dolan) "tentatively" identified the green alga as Chlorococcum sp. This may be the same green alga I referred to as "Chlamydomonas (Palmella stage) or Gleocystis" in my letter of July 19 to Dan Norris (copy enclosed); these genera are unicellular types that appear very similar morphologically. Polytrichum commune has been tested many times with mostly negative results, the one exception appears to be a collection from a vertical rock bank in Virginia. There are the possibilities that the active agents in P. ohioense are produced by the: (1) moss, (2) alga, (3) moss altering a chemical structure produced by an alga, or (4) another species of microorganism.

In another active species of moss (Hylocomium splendens), the alga flora is again different (a common semi-colonial species of a green, occasional blue-green present), but appearing to be consistently present in samples collected from different locations such as from Oregon and West Virginia. Bryophytes may contain microfloras characteristic at the species, genus or family level. You might then look at Polytrichum ohioense and P. pallidisetum as containing similar active chemicals, and also the same goes for Anomodon rostratus, A. attenuatus and Claopodium crispifolium.

Sincerely,

Richard Spjut, Botanist

cc:

Matt Suffness

Dan Norris

Chuck Edson