

IDENTIFICATION OF MOSSES

Introduction

Bryophyta (mosses and their allies) are inconspicuous but common species in many plant communities. Gier (1970) states that "There are about 660 recognized genera of mosses made up of nearly 14,009 species...".

This same author states that there are "...many taxonomic problems among mosses, mostly depending upon morphological characters not yet studied and correlated".

We have initiated a study that will produce a species list of mosses on 22 sites (sites no. 1-22 included, Table TB- , Figure TB-).

The reasons for identifying moss species as a part of the regional characterization for this study is best explained by Steere (1970):

"Bryophytes (mosses and allies) are unusually sensitive among plants, to variations ~~as~~ the substratum upon which they live, not only in moisture, but in acidity, alkalinity, the presence of certain metallic ionic, and other factors." ... "The very close relationship of bryophytes to the soil, rocks, and banks upon which they grow, because of their lack of roots, combined with their sensitivity to the environment, cause them to be excellent indicators of the nature of the environment..."

Other researchers (Stacklette 1967, ^{P 614}~~PS-14~~) have recognized that certain species of mosses may be "...A local indicator of mineral enrichment..."

This moss-mineral association was noted for a number of elements in Alaska (Shacklette 1965). ~~In addition, experiments have shown that mosses can be used as an indicator of air pollution based on elevated levels of which they concentrate in their cells ().~~

Methods

The complications with the taxonomy of mosses prompted us to contract ~~OUT~~ this portion of the study. ^{Ms} Miss Rae Barkely, currently employed by the Bell Museum of Natural History, University of Minnesota, Minneapolis Campus, was contracted to collect and identify moss species from 22 sites on the Minesite area. The entire contract (transportation, lodging, supplies, collecting, and identification) amounted to \$500.00.

^{Ms} Miss Barkely traveled to the study area twice during the 1976 season () and spent approximately 30 minutes on each site during each field trip. Mosses were collected from as many substrates as possible, placed in individual paper bags, numbered and dated. Samples were air dried and identified in the Twin Cities by using ~~a combination of a~~ binocular and a compound microscope.

Results

A species list of mosses for each of the 22 sites will be completed and in the possession of the terrestrial team by mid-January, 1977. Over 350 samples are being classified, representing approximately 100 DIFFERENT species ~~to date~~ (per. com. with R. Barkely). Questionable specimens will be checked with A WELL KNOWN BRYOLOGIST, DR. HOWARD CRUM OF THE UNIVERSITY OF MICHIGAN, ANNE ARBOR & HIS GRADUATE STUDENT, MR. BILL BUCK, ~~all recognized in the field of moss taxonomy.~~ A PH. D. CANDIDATE.

This species list will provide baseline data at 22 locations throughout the study area (Figure TB-). ~~Based on these findings, we may proceed with an experiment such as describes to determine existing air pollutants at various locations on the study area during the 1977 field season.~~

Moss specimens will be stored at the University of Minnesota, St. Paul Campus, under the care of Dr. Clifford Wetmore. These specimens will be added to the existing collection and thus available for future studies.

Conclusions

No conclusions or comparisons between habitats can be made at this time.

REFERENCES CITED

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