Some Algae of Hillside Seeps in Turkey Run State Park, Parke County, Indiana

William A. Daily
Butler University, Box 169
Indianapolis, Indiana 46208

The physical features of the Turkey Run State Park seeps are described in detail by Dr. John E. Ebinger and John A. Bacone (3). During their survey of the higher plants a charophyte was collected and identified as the rare *Chara Brittonii* T.F. Allen.

On April 17, 1981, during the spring meeting of the Indiana Academy of Science, several of us were shown this area and besides the charads, an unusually large number of brownish mats of the blue-green alga, *Scytonema Hofmannii* Ag. were observed.

Fay K. Daily and I returned on September 30, 1981, and Sept. 30, 1982, to collect algae. Then on October 9, 1985, Dr. John B. Patton and I visited the area for a habitat study and to procure Spirogyra for photographic purposes.

The Seep 1 area measures about 37 m by 40 m and has a very small stream of water flowing through it. The surface is very wet and composed of a grayish-tan sandy glacial soil with a calcareous tufa top layer resulting from mineral-laden water evaporating at the surface. The glacial drift is resting upon an impermeable Pennsylvanian shale, causing ground water to emerge along the valley wall as a seep.

The Algae

Some of the algae found at the site are as follows:

Bacillariophyceae

Achnanthes flexella (Kütz.) Brun
Cymbella laevis Naeg.
Cymbella microcephala Grun.
Fragilaria construens var. *venter* Grun.
Mastogloia Smithii var. *lacustris* Grun.
Navicula bryophila Ostr.
Navicula Potzgeri Reimer
Pinnularia viridis (Nitz.) Ehr.
Surirella tenera Greg.

The above taxa were identified by Dr. Charles W. Reimer, Academy of Natural Sciences at Philadelphia. Most of them are considered "alkaliphilous" and correlated with the alkaline and fairly cool seep water here. They all appear in the Cabin Creek Raised Bog diatom flora (4).

Additions to this diatom list will be published by Reimer at a later date.

Charophyceae

Chara Brittonii T.F. Allen

This very rare charophyte was found in the Turkey Run seep area for the first time by Ebinger and Bacone and identified by Fay Kenoyer Daily. For a complete description of it and its distribution in Indiana see Fay K. Daily (1). Heretofore, it has been associated with bogs (broad sense) or fens.

Chara contraria A. Br.

The *Chara contraria* found here is mostly a very short, compact bog type which can be easily mistaken upon casual observation for the *Chara Brittonii*.

Chlorophyceae

Cosmarium reinforme (Ralfs.) Archer
Netrium digitus (Ehr.) Itz. & Rothe

These desmids were very scarce in my collections.
Rhizoclonium Heiroglyphicum (Ag.) Kütz.

This was the only alga collected from the Seep 2 area.
Spirogyra sp. non-fruiting.

Only one chloroplast per cell was seen in the 9 collections. The small, brightly green slippery masses were widely distributed over the entire surface of the seep area.

Myxophyceae

Anacystis dimidiata (Kütz) Dr. & Daily
Anacystis montana (Light.) Dr. & Daily
Anacystis thermalis (Menegh.) Dr. & Daily
Nostoc commune Vauch.

The ecophene, formerly *N. microscopicum*, was the only form seen here and it was very scarce.
Scytonema Hofmannii Ag.

This filamentous blue-green alga was found growing over the entire Seep 1 area in many variously sized mats up to nearly 30 cm in diameter (covering the top surface of a large glacial cobblestone). It develops here as a brownish velvety turf impregnated slightly with sandy calcareous tufa. The sheaths are twin and single branched. It has been collected in other localities in this park, but never in such abundance.

The ecophene, formerly *S. alatum* (Carm.) Borzi, was seen only in 2 of the 31 collections. This is the form with the more gelatinuous and much laminated sheaths and prominent ocreae.

None of the blue-greens were abundant in the seep collections with the notable exception of Scytonema which is almost always unialgal.

For specific names of the Myxophyceae used here see Francis Drouet (2).

Location of Herbarium Specimens

All collections are filed in the Ray C. Friesner Memorial Herbarium, Butler University, and diatom slides are filed at the Academy of Natural Sciences of Philadelphia.

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