

BRYOPHYTES OF STARVED ROCK STATE PARK, LASALLE COUNTY, ILLINOIS

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The most interesting area in LaSalle County and the best known floristically, ecologically and geologically is Starved Rock State Park. This report is limited to the mosses and liverworts at present known to occur in this park. Other areas in the county such as Deer Park, Bailey Falls, and Buffalo Rock State Park, await further collecting and study.

Starved Rock State Park provides a varied array of habitats from moist shaded canyons, swampy woods, flood plains, heavily forested slopes to prairies. A few of the bryophytes found in these habitats are xerophytes and are abundant on the bark of trees and others on bare sandstone rock. A greater number are found in the mesophytic-hydrophytic wooded slopes and shaded portions of canyons; e.g., *Bartramia pomiformis*, *Leucobryum glaucum*, *Scapania nemorosa*, *Chiloscyphus polyanthus*, *Conocephalum conicum*, and *Pellia epiphylla*. Of the plants just named the last two are most conspicuous in wet seepage areas on the canyon walls.

Only a few of the canyons and other habitats of the park have been thoroughly investigated for bryophytes. Further study and collection should produce many additions to this list. A number of collections made by M. B. Waite in 1884 and by the Rev. E. J. Hill in 1901 were found in the herbarium of the University of Illinois. These specimens were made available for study through the kindness of Dr. J. T. Buchholz and Dr. G. N. Jones. Collections made by the late G. E. Nichols in 1910 are in the herbarium of Paul D. Voth. Most of the specimens reported on in this paper were collected by Dr. Voth in September 1938 and by the writer, Dr. Voth, and Dr. Donald T. Ries in March and April 1940. A few miscellaneous collections are in the Cryptogamic Herbarium of the Field Museum of Natural History.

The following abbreviations designate the herbaria in which the specimens are

to be found: (D) Herbarium of R. V. Drexler; (FM) Cryptogamic Herbarium of the Field Museum; (I) University of Illinois Herbarium; (R) Herbarium of Donald Richards; and (V) Herbarium of Paul D. Voth. Duplicate sets of specimens collected by the writer have been deposited in the herbarium of the University of Illinois and the Cryptogamic Herbarium of the Field Museum.

Dr. A. J. Grout and Dr. A. J. Sharp made several of the determinations, for which the writer wishes to express his appreciation. He is also greatly indebted to Dr. Paul D. Voth and Dr. Francis Drouet for constant help and advice. Dr. Donald T. Ries, Park Naturalist, and the Illinois Department of Public Works and Buildings, Division of Parks, made possible the collections in the park.

HEPATICAE

Harpanthaceae

LOPHOCOLEA HETEROPHYLLA (Schrad.)

Dum.—Prairie above Illinois Canyon, Mar. 22, 1940, Richards, Voth, & Ries 948 (R).

LOPHOCOLEA MINOR Nees.—French Canyon, Mar. 21, 1940, Richards, Voth, & Ries, 863 (R); floor of Aurora Canyon, Mar. 21, 1940, Richards, Voth, & Ries 901 (R); junction of upper and connecting trails, Tonti Canyon, Mar. 22, 1940, Richards, Voth, & Ries 918 (R).

CHILOSCYPHUS POLYANTHUS (L.) Corda.—Swampy woods near west entrance, Mar. 21, 1940, Richards, Voth, & Ries 918 (R).

Jungermanniaceae

PLECTOCOLEA CRENULIFORMIS (Aust.) Mitt. Upper French Canyon, Sept. 11, 1938, Voth 3461 (V).

PLECTOCOLEA FOSSOMBRONIOIDES (Aust.) Mitt.—Upper French Canyon, Sept. 11, 1938, Voth 3462 (V).

PLECTOCOLEA HYALINA (Lydell) Mitt.—On sandstone ledge, Oct. 10, 1937, *R. V. Drexler 1257* (D, R); upper Illinois Canyon, Apr. 28, 1940, *Voth & Richards 956* (R).

Scapaniaceae

SCAPANIA NEMOROSA (L.) Dum.—On wet ledges, Aug. 1910, *G. E. Nichols* (V); upper French Canyon, Sept. 11, 1938, *Voth 3467* (V); idem, upper trail, Mar. 21, 1940, *Richards, Voth, & Ries 874* (R); near steps to upper trail, Illinois Canyon, Mar. 22, 1940, *Richards, Voth, & Ries 951* (R).

SCAPANIA UNDULATA (L.) Dum.—Wildcat Canyon, Aug. 15, 1912, *E. J. Hill 42.1912* (I).

Porellaceae

PORELLA PLATYPHYLLA (L.) Lindb.—Upper trail, French Canyon, Mar. 21, 1940, *Richards, Voth, & Ries 866* (R); swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries 885* (R).

Frullaniaceae

FRULLANIA EBORACENSIS Gottsche.—On *Tilia americana*, swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries 881* (R); idem, on white ash, *Richards, Voth, & Ries 883* (R); on *Quercus alba*, side of hill above Horseshoe Canyon, Mar. 22, 1940, *Richards, Voth, & Ries 933* (R).

Pelliaceae

PELLIA EPIPHYLLA (L.) Corda.—French Canyon, July 13, 1901, *E. J. Hill 229.1901* (as *Pallavicinia Lyellii*, I); Canyon back of Lover's Leap, Aug. 15, 1912, *E. J. Hill 51.1912* (I); upper French Canyon, Sept. 11, 1938, *Voth 3471* (V); bluff between Fox and French Canyons, Apr. 28, 1940, *Voth & Richards 954* (R).

Blasiaceae

BLASIA PUSILLA L.—Aug. 1910, *G. E. Nichols* (V).

Riccardiaceae

RICCARDIA PINGUIS (L.) Gray.—Swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries 886* (R).

Marchantiaceae

MARCHANTIA POLYMORPHA L.—Near steps to upper trail, Illinois Canyon, Apr. 28, 1940, *Voth & Richards 955* (R).

PREISSIA QUADRATA (Scop.) Nees.—Near Starved Rock, July 13, 1910, *E. J. Hill 228.1901* (as *P. commutata*, I, R).

CONOCEPHALUM CONICUM (L.) Dum.—In canyons, Aug. 1910, *G. E. Nichols* (as *Pellia epiphylla*, V); face of sandstone bluff, Sept. 7-8, 1914, *O. E. Lansing Jr. 2771* (FM, R); French Canyon, June 1-7, 1910, *Greenman, Lansing, & Dixon 174* (FM); Horseshoe Canyon, June 1-7, 1909, *Greenman, Lansing, & Dixon 175* (FM); walls of Aurora Canyon, Mar. 21, 1940, *Richards, Voth, & Ries 902* (R); swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries 891* (R); walls of Fox Canyon, Apr. 28, 1940, *Voth & Richards 953* (R).

Rebouliaaceae

REBOULIA HEMISPHERICA (L.) Raddi.—Wet ledges, Aug. 1910, *G. E. Nichols* (V); on Jacob's Ladder, Sept. 11, 1938, *Voth 3475* (V); upper trail, French Canyon, Mar. 22, 1940, *Richards, Voth, & Ries 908* (R).

Anthocerotaceae

ANTHOCEROS LAEVIS L.—Canyon back of Lover's Leap, Aug. 15, 1912, *E. J. Hill 39.1912* (I).

MUSCI

Sphagnaceae

SPHAGNUM GIRGENSOHNII Russ. — Slope above Tonti Canyon, Apr. 28, 1940, *Voth & Richards 960* (R).

Tetraphidaceae

TETRAPHIS PELLUCIDA Hedw. — Bluff between Fox and French Canyons, Apr. 28, 1940, *Voth & Richards 965* (R).

Polytrichaceae

ATRICHUM ANGUSTATUM (Brid.) B.S.G.—Aug. 9, 1884, *M. B. Waite 12601* (I); north-facing slope, Oct. 10, 1937, *R. V. Drexler 1274* (D, R); path near Tonti Canyon, Sept. 11, 1938, *Voth 3482* (V); near steps to upper trail, Illinois Canyon, Mar. 22, 1940, *Richards, Voth, & Ries 940* (R).

POGONATUM PENNSYLVANICUM (Hedw.)

Paris.—Near steps to upper trail, Illinois Canyon, Mar. 22, 1940, *Richards, Voth, & Ries* 937 (R).

POLYTRICHUM JUNIPERINUM Hedw.—Aug.

9, 1884, *M. B. Waite* 12677 (I); dry ground, July 13, 1901, *E. J. Hill* 227.1901 (I); on sandstone ledges, Sept. 7-8, 1914, *O. E. Lansing Jr.* 3772 (FM).

POLYTRICHUM OHIOENSE Ren. & Card.—

Lower trail on west side of LaSalle Canyon, above boatlanding, Mar. 22, 1940, *Richards, Voth, & Ries* 935 (R).

Fissidentaceae

FISSIDENS CRISTATUS Wils.—Upper French Canyon, Sept. 11, 1938, *Voth* 3465 (V); idem, upper trail, Mar. 21, 1940, *Richards, Voth, & Ries* 857 (R).

FISSIDENS GRANDIFRONS Brid.—Sandstone cliff, July 13, 1901, *E. J. Hill* 224.1901 (I, R).

Ditrichaceae

CERATODON PURPUREUS (Hedw.) Brid.—Upper French Canyon, Sept. 11, 1938, *Voth* 3468 (V); head of Tonti Canyon, Apr. 28, 1940, *Voth & Richards* 964 (R).

Dicranaceae

DICRANELLA HETEROMALLA var. **ORTHOCARPA** (Hedw.) Paris.—Aurora Canyon, Mar. 21, 1940, *Richards, Voth, & Ries* 903 (R); near steps to upper trail, Illinois Canyon, Mar. 22, 1940, *Richards, Voth, & Ries* 942 (R).

Leucobryaceae

LEUCOBRYUM GLAUCUM (Hedw.) Schimp.—Near connecting trail above Horseshoe Canyon, Mar. 22, 1940, *Richards, Voth, & Ries*, 913 (R).

Pottiaceae

BARBULA FALLAX Hedw.—Horseshoe Canyon, Aug. 15, 1912, *E. J. Hill* 46.1912 (I).

Grimmiaceae

HEDWIGIA CILIATA f. **VIROIDIS** (B.S.G.) G. N. Jones.—Upper Illinois Canyon, Apr. 28, 1940, *Voth & Richards* 962 (R).

Funariaceae

FUNARIA HYGROMETRICA (L.) Sibth.—Steps to upper trail, Illinois Canyon, Mar. 22, 1940, *Richards, Voth, & Ries* 944 (R).

Aulacomniaceae**AULACOMNIUM HETEROSTICHUM** (Hedw.)

B.S.G.—Aug. 9, 1884, *M. B. Waite* 12611a (I); bluff between Fox and French Canyons, Apr. 28, 1940, *Voth & Richards* 961 (R).

Bartramiaceae

BARTRAMIA POMIFORMIS Hedw.—Aug. 9, 1884, *M. B. Waite* 12611 (I); upper French Canyon, Sept. 11, 1938, *Voth* 3464 (V); idem, upper trail, Mar. 21, 1940, *Richards, Voth, & Ries* 858 (R).

PHILONOTIS FONTANA (Hedw.) Brid.—Upper Illinois Canyon, Apr. 28, 1940, *Voth & Richards* 958 (R).

Bryaceae

BRYUM ARGENTUM Hedw.—Junction of upper and connecting trails, Tonti Canyon, Mar. 22, 1940, *Richards, Voth, & Ries* 917, 928 (R).

BRYUM CAESPITICUM Hedw.—Steps leading from Jacob's Ladder to Bluff trail, Sept. 11, 1938, *Voth* 3473 (V).

RHODOBRYUM ROSEUM (Weis.) Limpr.—Moist woods, Nov. 1921, *L. Sickenberger* (R); head of Pontiac Canyon, Sept. 11, 1938, *Voth* 3481 (V); swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries* 877 (R).

Mniaceae

MNIUM CUSPIDATUM (L.) Leyss.—Jacob's Ladder, Sept. 11, 1938, *Voth* 3472 (V); swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth & Ries* 895, 896 (R).

MNIUM MEDIUM B. & S.—Head of Tonti Canyon, Apr. 28, 1940, *Voth & Richards* 957 (R).

Hypnaceae

CLIMACIUM AMERICANUM Brid.—Slope near Tonti Canyon, Apr. 28, 1940, *Voth & Richards* 959 (R).

EURHYNCHIUM SERRULATUM (Hedw.) Kindb.—Swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries* 897 (R).

CIRRIPHYLLUM BOSCHII (Schwaegr.) Grout.—Near steps to upper trail, Illinois Canyon, Mar. 22, 1940, *Richards, Voth, & Ries* 949 (R).

BRACHYTHECIUM OXYCLADON (Brid.) J. & S.—Above and to south of Jacob's Ladder, Sept. 11, 1938, *Voth* 3476, 3480 (V); near upper trail, French Canyon, Mar. 21, 1940, *Richards, Voth, & Ries* 861 (form with unusually slender leaves, R); swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries* 899 (R); west side of LaSalle Canyon, above boatlanding, Mar. 22, 1940, *Richards, Voth, & Ries* 936 (R).

BRACHYTHECIUM PSEUDOCOLLINUM Kindb.—Swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries* 876 (R). This has not previously been reported from Illinois as far as I can determine.

AMBLYSTEGIELLA SUBTILIS (Hedw.) Loeske.—Above Jacob's Ladder, Sept. 11, 1938, *Voth* 3477 (V).

PLATYGIRIUM REPENS (Brid.) B.S.G.—July 13, 1901, *E. J. Hill* 225.1901 (I).

ENTODON SEDUCTRIX (Hedw.) C. M.—Swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries* 882 (R).

Leskeaceae

THUIDIUM RECOGNITUM (Hedw.) Lindb.—Upper French Canyon, Sept. 11, 1938, *Voth* 3466 (V); idem, Mar. 21, 1940, *Richards, Voth, & Ries* 862 (R); swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries* 880 (R).

ANOMODON ATTENUATUS (Schreb.) Hueb.—Base of trees and rocks, Aug. 1910, *G. E. Nichols* (V).

ANOMODON ROSTRATUS (Hedw.) Schimp.—Swampy woods near west entrance, Mar. 21, 1940, *Richards, Voth, & Ries* 900 (R); upper trail, French Canyon, Mar. 21, 1940, *Richards, Voth, & Ries* 860, 870 (R).
