

# THE BRYOPHYTES OF CHAMPAIGN COUNTY, ILLINOIS

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## ABSTRACT

Champaign County has 107 species of bryophytes, consisting of 12 Hepaticae (liverworts) and 95 Musci (mosses). Most of the taxa are common throughout the Midwest, although 63 of the species are county records. Fourteen previously reported taxa and two previously unreported taxa were not relocated in the field. The taxa are presented in an annotated checklist that gives collection data, frequency, and location of vouchers, including ten species that are being maintained in axenic culture. A presettlement vegetation map of the county shows the location of collection sites.

## INTRODUCTION

Champaign County is a 2,712 km<sup>2</sup> (998 mi<sup>2</sup>) tract located in the Grand Prairie Division of east central Illinois. The entire area is north of the Wisconsin glacial boundary and is quite flat; elevation within the county varies from 189 m (620 ft.) to 261 m (855 ft.). According to the Government Land Office Surveys conducted in the 1830's, more than 90% of the county was covered with tallgrass prairie in presettlement times (Fig. 1). But the use of field tile and drainage ditches, starting circa 1870 (Roberts, 1963), and the development of the steel plow permitted the expansion of agriculture, and the once common prairie and wetlands have been essentially obliterated. Today the prairie is confined to small linear patches found primarily along railroads and occasionally in fence rows and cemeteries. The most liberal estimate I would accept for the amount of prairie remaining in the county is 120 ha. (300 acres), which is only 0.05% of the presettlement total, and almost all of this is Grade C quality.

The remainder of the county, approximately 6% or 16,000 ha. (40,000 acres), was covered by oak-dominated hardwood forests (Government Land Office Surveys). These forests were mainly on the leeward side of water courses, which afforded

some protection from fires driven by predominately westerly winds. According to figures calculated from the 1980 U.S.G.S. Land Use Data Acquisition Program (LUDA), there are only approximately 1,600 ha. (4,000 acres) of forested land remaining in Champaign County (pers. comm., Louis Iverson, ecologist, INHS). This acreage represents only 10% of the presettlement total and, due primarily to heavy grazing, almost all of these woods have been degraded. The best extant examples of high quality woodlands in the county are two 24 ha. (60 acre) tracts maintained by the University of Illinois (Brownfield and Trelease Woods, Fig. 1).

The soils in Champaign County are of two main types: the dark, thick soils, high in organic content that formed under prairie and the lighter, thinner soils, with a low organic content that formed under forests. Surface sand deposits are rare and limited to the alluvium in bottomlands. There are no rock outcrops in the county and glacial erratic boulders are rare and then small.

Ten publications have mentioned bryophytes from Champaign County. The bryophytes in the county have never been thoroughly surveyed, however, although two of the premier scientific institutions in the Midwest are located in Urbana-Champaign (the University of Illinois and the Illinois Natural History Survey), and several professional bryologists have lived in this area.

Prior to this publication, 59 bryophytes (9 liverworts and 50 mosses) had been reported in the literature from Champaign County. The first publication to mention bryophytes from Champaign County was by Hague (1930), who produced a checklist of the Illinois mosses that included 37 species from Champaign County; her 1937 checklist of Illinois liverworts contained four taxa from the county (*Conocephalum conicum*, *Lunularia cruciata*, *Marchantia polymorpha*, and *Riccia lutescens*). Hague & Drexler (1938) commented on recent collections of Illinois liverworts and listed five taxa from Champaign County (*Jamesoniella autumnalis*, *Lophocolea heterophylla*, *Porella platyphylla*, *Ptilidium pulcherrimum*, and *Riccia sorocarpa*). Paolillo & Bazzaz (1968) used a Champaign County collection of *Funaria hygrometrica* to investigate photosynthesis in the sporophyte. Schuster (1969) listed *Jamesoniella* from the county; his 1980 publication mentions three liverworts from the county (*Lophocolea cuspidata* f. *alata*, *L. minor*, and *Porella platyphylla*). Spessard (1972) listed one liverwort and 24 mosses reported in literature from Champaign County. McCleary & Redfearn (1979) presented a moss checklist for the state with 47 species from Champaign County. Burnette (1981) included one liverwort and 14 mosses based on previous literature reports. The most recent publication relating to the county bryoflora (McKnight, 1985) lists two state record mosses (*Bryum klinggraeffii* and *Grimmia plagiopoda*).

## MATERIALS AND METHODS

Approximately 500 collections were examined during this survey. Unless otherwise noted, specimens cited are deposited in the herbarium of the Illinois Natural History Survey (ILLS) and the collection numbers are mine. In addition, ten taxa vouchered from Champaign County populations (indicated in the checklist) are being maintained in axenic culture by Malcolm Sargent at the University of Illinois (*Acaulon muticum*, *Amblystegium humile*, *Aphanorrhagma serratum*, *Brachythecium salebrosum*, *Bruchia flexuosa*, *Ephemerum spinulosum*, *Funaria hygrometrica*, *Marchantia polymorpha*, *Ricciocarpus natans*, and *Weissia controversa*).

Most of the vouchers upon which previous reports were based are housed in the University of Illinois Herbarium (ILL), Urbana. I attempted to relocate the populations noted in previous reports and collections, but the location datum was often either lacking or vague.

The annotation after each species in the checklist for this publication includes the collection site and substrate, date of collection, collector, and location of voucher. Specific collection date information is given only for ephemeral or annual species, for species which include some discussion about sexual condition, and for species with an unusual morphology. When more than one collection has been made from a site, the data from the collections for the common population are strung together with semicolons. The frequency rating given after each taxon is an empirical observation by the author based on five years of field work in Champaign County. These ratings pertain to the county and not to individual sites.

Nomenclature follows Zander (1978) for *Didymodon*, Crum & Anderson (1981) or Crum (1983) for the remaining mosses, and Stotler & Crandall-Stotler (1977) for the liverworts, except for some taxa that are treated *sensu lato* (s.l.). New county records are marked with an asterisk (\*).

## RESULTS AND DISCUSSION

Field work during this survey resulted in the discovery of 107 bryophytes (12 liverworts and 95 mosses). This total includes 63 county records, despite the fact that most of the taxa are ubiquitous weeds in the Midwest. Also included are two recently reported state record mosses, *Bryum klinggraeffii* and *Grimmia plagiopoda* (McKnight, 1985).

Study of the bryophyte collections at ILL and ILLS confirmed some previous reports, refuted others, and revealed two county records (*Bryum pseudotriquetrum* and *Fabronia ciliaris*) that were not located in the field during this survey. I found that four of the 59 previously reported bryophytes (*Entodon brevisetus*, *Leskea obscura*, *Mnium longirostrum*, and *Pylaisiella intricata*) were based on misdetermined specimens. The proper treatment for each of these species is discussed below under the list of previous reports not relocated in the field. Nine other previously reported taxa were not relocated, although Champaign County is within their known range. The collection site for two of these species (*Bryum uliginosum* and *Conocephalum conicum*) is listed as Big Springs, Mahomet, Illinois. None of the elders around Mahomet know of a Big Springs, and no additional reference was found on maps or in the biological and geological literature for the county. Three previous reports (*Lophocolea cuspidata* f. *alata*, *Porella platyphylla*, and *Ptilidium pulcherrimum*) could not be confirmed due to lack of voucher data in the publications (Frye & Clark, 1937-1947; Hague, 1930 & 1937; Hague & Drexler, 1938), or because the specimens were on loan and unavailable for study. One previously reported liverwort (*Lunularia cruciata*), an introduced taxon found only in greenhouses, is not considered part of the Champaign County bryoflora.

Despite its relatively large size, Champaign County has fewer bryophyte species (107) than other Midwestern counties; I estimate that Illinois and Indiana average 150 species of bryophytes per county. Several things may account for the limited number of species in Champaign County. First, there was probably a meager bryoflora in presettlement times, when >90% of the land was covered by prairie.

There has been very little work on the bryophytes of prairies, but Short (1845) stated (p. 193) that mosses are rare in the prairies of Illinois and Zales (1971) noted that bryophytes do not form a major part of the prairie community. The thick litter layer which forms in mesic prairies serves to limit the number of bryophytes by reducing suitable habitat. Furthermore, most of the terrestrial bryophytes would not have been able to survive the frequent prairie fires.

Other factors which may have contributed to the small number of bryophyte species found during this study are the radical changes in the landscape that accompanied settlement and subsequent human activities. Although these activities have adversely affected the prime bryophyte habitats (i.e., forests and wetlands), they have also provided habitat heretofore absent or rare in the county. Two obvious examples are rupestral habitats and agricultural fields. Eight taxa (*Desmatodon obtusifolius*, *Didymodon fallax*, *D. tophaceus*, *Fissidens obtusifolius*, *Grimmia apocarpa*, *G. plagiopoda*, *G. rivularis*, and *Tortella humilis*) were found only on nonnative or manmade rock (e.g., gravestones, bridge abutments, buildings, walls). Several other taxa were common on introduced rupestral substrates but were not limited to them. In contrast, two taxa that are typically rupicolous (*Hedwigia ciliata* and *Ptychomitrium incurvum*) were found growing on bark.

The agricultural fields which today cover most of the land surface in Champaign County sometimes support an interesting assemblage of bryophytes. Six ephemeral pygmy mosses (*Acaulon*, *Aphanorrhagma*, *Astomum*, *Bruchia*, *Ephemerum*, and *Phascum*) were abundant in unplowed fields during the mild winter and spring of 1983. All of these taxa, except *Bruchia* but including *Pottia*, were found in a mowed field during late fall 1984. Ephemerals are infrequently collected but probably occur in many central Illinois fields. Evidently, severe winter weather limits the luxuriance of ephemeral spring bryophytes.

As stated earlier, the natural wetlands in Champaign County have been essentially obliterated. Those that remain have been drastically reduced and degraded. Solitary populations of two *Drepanocladus aduncus* varieties were located in what appear to be artificial wetlands created adjacent to railways. The presettlement vegetation map (Fig. 1), however, indicates that these populations are relicts in vestiges of natural wetlands. Unfortunately, one of these sites (Glover Marsh) is being rapidly destroyed. Bryophytes were totally absent from the several small *Acorus* marshes surveyed.

Of the 107 kinds of bryophytes found, only ten were abundant (*Brachythecium oxycladon*, *B. salebrosum*, *Bryum argenteum*, *Entodon seductrix*, *Eurhynchium hians*, *Leskea gracilescens*, *Mnium cuspidatum*, *Physcomitrium pyriforme*, *Platygyrium repens*, and *Rhynchostegium serrulatum*). The totals for the other frequency categories were: rare 51; occasional 31; and common 15. Of the liverworts found only *Frullania eboraensis* was common, the rest were either rare or occasional. The ratio of mosses to liverworts is 8:1, considerably different from the 3:1 ratio for Clark and Pope counties, Illinois, and Fountain County, Indiana (unpub. data of the author). The absence of sandstone outcroppings in Champaign County is the prime reason for the high moss to liverwort ratio and the disproportionately high number of taxa that are rare in the county.

# ANNOTATED LIST OF BRYOPHYTES FOUND DURING THIS STUDY (New county records are marked with an \*)

## HEPATICAEE — liverworts (12)

\**Cephalozia bicuspidata* (L.) Dum., s.l. — On decaying log, Trelease Woods, 16 Sep 1984, 4066. With an abundance of stolons. Rare.

\**Cephaloziella rubella* (Nees) Warnst., s.l. — On soil in woods in splash zone under edge of roof, T18N R10E S10, 1983, 2635, 2645; 1984, 3865. Rare.

\**Frullania eboracensis* Gott. — On *Quercus*, T18N R10E S10, 1983, 2622. On *Crataegus*, T19N R9E S3, 1983, 2593. On *Fraxinus*, Busey Woods, 1984, 4001. On *Quercus*, Purnell Woods, 1984, 4373. On *Fraxinus*, T20N R7E S14, 1986, 4853. Plants often with stems devoid of leaves below apex. Common.

\**Frullania inflata* Gott. — On *Celtis*, Mt. Hope Cemetery, Champaign, 1984, 2990. Rare.

*Jamesoniella autumnalis* (DC.) Steph. — On soil intermixed with mosses, T18N R10E S10, 1984, 3864. Previously reported by Drexler & Hague (1938); Schuster (1969) verified the determination. Rare.

*Lophocolea heterophylla* (Schrad.) Dum. — On decaying log, Brownfield Woods, 1981, *Moran* 1768; 1983, 2725. On ground, intermixed with mosses, T18N R10E S10, 1983, 2631, 2634. On decaying log, Purnell Woods, 1984, *Helton* 62. On decaying log, Trelease Woods, 16 Sep 1984, 4065 (some of the plants have gemmae). On bark at base of *Quercus*, T21N R7E S26, 1986, 4866. On north-facing soil slope along river, T20N R7E S5, 1986, 4876. Occasional.

*Lophocolea minor* Nees — On decaying log, Trelease Woods, 1984, 4058, 4064, 4355. It is difficult to distinguish this and the previous species when both are gemmiparous. Previously reported by Schuster (1969). Rare.

*Marchantia polymorpha* L. — From Univ. Ill. greenhouse, 1947, *Scherer* s.n. (ILL). 1965, *Jones* 41913 (ILL). Male plants on moist soil in lawn N side Burkwood Drive, Urbana, 1981, *Sargent* 354 (axenic cult. coll. M. Sargent). On disturbed soil bank Boneyard Creek at Mathews Street, Urbana, 1984, 3985. The last population is probably an escape from the north greenhouse at the Univ. Ill. and all populations apparently can be traced back to material cultivated from feral populations at Portland Arch Nature Preserve, Fountain County, Indiana, and Shades State Park, Montgomery County, Indiana. Rare.

\**Porella platyphylloidea* (Schwein.) Lindb. — On *Quercus*, T18N R10E S10, 1983, 2643. On *Aesculus*, Trelease Woods, 1984, 4347. On bark at base of *Juglans*, T21N R7E S26, 1986, 4865. The last specimen is intermediate between this species and *P. platyphylla*. Rare.

\**Riccia beyrichiana* Hampe ex Lehm. — On river bank, T21N R7E S35, 16 Sep 1984, 4081. Rare.

*Riccia sorocarpa* Bisch. — On sandy soil in unplowed corn stubble, T18N R11W S6, 19 Feb 1983, 2580. Previously reported by Hague & Drexler (1938). Rare.

*Ricciocarpus natans* (L.) Corda (= *R. lutescens* Schwein.) — On mud, Urbana, 29 Oct 1988, *GPC* s.n. (ILL 28169). Glover Marsh, spring 1983, juvenile material collected and cultured but not vouchered; not relocated during a subsequent visit, 11 May 1984. On soil in dry ponds, Busey Woods, 5 Sep 1984, 4011; 15 Sep 1981, *Spencer* s.n. (axenic cult. coll. M. Sargent). On soil in depression, Trelease Woods, 16 Sep 1984, *McKnight* (no voucher taken); 1 Jan 1972, *Cox* s.n. (ILL). Occasional.

## MUSCI - mosses (95)

\**Acaulon muticum* (Hedw.) C.M., s.l. — On soil in unplowed soybean field, T18N R9E S3, 19 Feb 1983, 2584 (also in axenic cult. coll. M. Sargent). On soil in mowed field, T20N R7E S10, 1 Dec 1984, 4384 (dup. ver. H. Crum, MICH), Helton 66. Rare.

*Amblystegium humile* (P.-Beauv.) Crumdw. (= *A. trichopodium* (Schultz) Hartm.) — On soil in lawn, Urbana, 1952, Jones 19508 (ILL); 2011 E. Vermont, 1981, Sargent 355 (also in axenic cult. coll. M. Sargent). On soil, corner of Green and Busey, Urbana, 1982, 2361. On soil road bank, T18N R10E S6, 1983, 2611, 2612. On soil, corner of Cedar and High, Urbana, 1983, 2586. On soil in thicket, T19N R9E S3, 1983, 2602. On soil under *Juniperus*, E side Educ. Bldg., Univ. Ill., 1985, 4575. Common.

*Amblystegium riparium* (Hedw.) BSG — 1947, Winterringer s.n. (ILL). On soil and decaying log in woodland between Dewey and Fisher, 1952, Ahles s.n. (ILL). On decaying log, Brownfield Woods, 1975, Spencer s.n. (ILL). Attached to branch in stream, T19N R9E S2, 1983, 2606. Attached to concrete in running water, T18N R10E S6, 1983, 2648 (dup. ver. H. Crum, MICH). At base of *Fraxinus* marking high water level in dry pond and parasitized by fungus (*Eocronartium muscicola*) on decaying log, Busey Woods, 5 Sep 1984, 4003, 4012. On decaying wood in railroad ditch (Glover Marsh), 1984, 3814. On decaying stump along river, T20N R7E S10, 1984, 4030. Common.

*Amblystegium serpens* (L.) BSG, s.l. — Urbana, 1886, MBW s.n. (ILL 31029). On bark of fallen tree in woods NE of Urbana, 1942, Evers 917. On shaded soil and decaying wood, Urbana, 1942, MFM s.n. On foundation stone N side of Altgeld Hall, Univ. Ill., 1952, Stern s.n. (ILL). On soil by Auditorium, Univ. Ill., 1981, Moran s.n. On *Aesculus*, Trelease Woods, 1984, 4346. On soil, Purnell Woods, 1984, Helton 8. Occasional.

\**Amblystegium tenax* (Hedw.) C. Jens., s.l. — On decaying wood along stream, Mahomet, 1946, Jones s.n. (ILL). On concrete at edge of stream, T19N R10E S36, 1983, 2618. In stream, T18N R8E S1, 1983, Hoffman s.n. On concrete culvert at water level, T18N R10E S6, 1983, 2649, 2650. In calcareous seep forming tufa, T20N R7E S5, 1986, 4878. Common.

*Amblystegium varium* (Hedw.) Lindb. — Mahomet, 1884, MBW s.n. (ILL 31032.5). Urbana, 1890, Craig s.n. (ILL 31041). Busey Woods, 1947, Winterringer s.n. (ILL). On decaying log in woods along Sangamon River N of Mahomet, 1953, Evers 38081. On bark, Brownfield Woods, 1975, Spencer s.n. (ILL); on discarded leather, 1975, Spencer s.n. (ILL); on decaying log, 1983, 2731; on *Quercus*, 1984, 3879; on soil-covered drainage tile, 1984, 4367. On concrete railroad trestle, T18N R10E S15, 1983, 2627. On stump along stream, T19N R9E S2, 1983, 2712. Common.

*Anomodon attenuatus* (Hedw.) Hüb. — Urbana, 1878, TJB s.n. (ILL 31087). Brownfield Woods, 1947, Winterringer s.n. (ILL); 1975, Spencer s.n. (ILL); on soil at base of *Acer*, 1981, Moran 1772. On stream bank, T18N R11E S6, 1983, 2621. At base of *Quercus*, Purnell Woods, 1984, Helton 23. Common.

*Anomodon minor* (Hedw.) Fűrnr. — Urbana, 1878, TJB s.n. (ILL 31070, 31088). On *Quercus* on river bank, T18N R10E S10, 1983, 2630, 2639. On soil-covered log on river bank, T20N R7E S10, 4026. On decaying log, Trelease Woods, 1984, 4350. On *Quercus*, Purnell Woods, 1984, 4379; on decaying stump, Helton 25. Occasional.

*Anomodon rostratus* (Hedw.) Schimp. — Urbana, 1880, *Seymour s.n.* (ILL 12600). On tree base, Brownfield Woods, 1981, *Moran 1773*. Base of *Quercus*, Purnell Woods, 1984, 4380. Occasional.

\**Aphanorrhagma serratum* (W.J. Hook. & Wils. ex Drumm.) Sull. — On soil, Brownfield Woods, 21 Oct 1981, *Moran 1770*. Buscy Woods, 15 Sep 1981, *Spencer s.n.* (axenic cult. coll. M. Sargent). On soil in unplowed soybean field, T18N R9E S3, 19 Feb 1983, 2582. On river bank, T21N R7E S35, 8 Sep 1984, 4034. On river bank, T18N R11E S6, 22 Sep 1984, 4093. Frequent on soil in floodplain along Sangamon River (T20N R7E S5) during fall 1984, no voucher taken. Occasional.

\**Astomum muhlenbergianum* (Sw.) Grout — On soil in unplowed soybean field, T18N R9E S3, 19 Feb 1983, *Rushing s.n.* (pers. coll. A. Rushing). On clayey road bank, T20N R7E S36, 9 Dec 1984, 4404 (dup. ver. H. Crum, MICH). Rare.

*Atrichum angustatum* (Brid.) BSG — Woods, Urbana, 1878, *TJB s.n.* (ILL 31076); 1879, *Seymour s.n.* (ILL 12602); 1879, *Woodworth s.n.* (ILL 12606). Woods, Mahomet, 1884, *S & M s.n.* (ILL 12605); 1898, *Bot. Class* (ILL 28173); 1898, *Bot. Class* (ILL 28179). In moist woods NE of Urbana, 1942, *Evers 912*. In woods on mounds of sandy or clayey soil, 1942, *MFM & Jones s.n.* On soil slope, T18N R11E S6, 1983, 2624. On decaying log, Trelease Woods, 1984, 4359. Common.

*Atrichum undulatum* (Hedw.) P.-Beauv., *s.l.* — Urbana, 1883, *Seymour s.n.* (ILL 12607). On soil, Brownfield Woods, 1975, *Spencer s.n.* (ILL); 1983, 2596, 2721. On soil on thicketed slope, T19N R9E S3, 1983, 2603. On soil of stream bank, Purnell Woods, 1984, 4382. On soil in woods, T20N R7E S14, 1986, 4850. Occasional.

*Aulacomnium heterostichum* (Hedw.) BSG — On soil, Urbana, 1886, *Earle s.n.* (ILL); the presence of *Fagus* scales in this collection makes me suspicious the accuracy of the collection site since the nearest known native population for *Fagus* is more than 33 km (20 miles) east of Urbana. On soil, north-facing slope along Sangamon River, T21N R7E S5, 1986, 4873. Rare.

*Barbula unguiculata* Hedw. — On moist soil bank NE of Urbana, 1942, *Evers 915*. 1942, *McWilliams s.n.* (ILL). On stream bank, T19N R9E S2, 1983, 2709. On soil, N side of Morrill Hall, Univ. Ill., 1983, 2566. Common.

*Bartramia pomiformis* Hedw. — Reported by Hague (1930) and McCleary & Redfearn (1979), but ILL specimens on loan and unavailable for examination and no specimens at ILLS. On soil, north-facing slope along Sangamon River, T21N R7E S5, 1986, 4871. Rare.

*Brachythecium acuminatum* (Hedw.) Aust. — Urbana, 1878, *TJB s.n.* (ILL 31073, 31084). Brownfield Woods, 1975, *Spencer s.n.* (ILL); on decaying log, 1983, 2716. On decaying log, Hart Woods, 1984, 3859. On bark at base of *Celtis*, Woodlawn Cemetery, Urbana, 1984, 3996. On *Quercus* burl, Trelease Woods, 1984, 4364. On bark at base of dead *Quercus*, Purnell Woods, 1984, 4378. On shaded concrete tombstone, Riverside Cemetery, Mahomet, 1984, 4024. Common.

*Brachythecium oxycladon* (Brid.) Jaeg. & Sauerb. — On soil NE of Urbana, 1942, *Evers 911*. On decaying log, Brownfield Woods, 1975, *Spencer s.n.* (ILL); on soil, 1984, 4394 (dup. det. H. Crum, MICH). On river bank, T19N R9E S2, 1983, 2711. On river bank, T18N R10E S10, 1984, 3867. On shaded soil road bank, T22N R14W S5, 1984, 3961. On slope, T18N R11E S6, 1984, 4096. On soil-covered boulder on wooded slope, T21N R7E S35, 1984, 4080. On soil in woods, T20N R7E

S14, 1986, 4845, 4848. All material that keys to *B. digastrum* is included here. Abundant.

\**Brachythecium rutabulum* BSG — On decaying log, Trelease Woods, 1984, 4054. Rare.

*Brachythecium salebrosum* (Web. & Mohr) BSG — On stone, N side Altgeld Hall, Univ. Ill. [intermixed with *Amblystegium serpens*], 1952, *Stern s.n.* (II.I.). On decaying log, Brownfield Woods, 1975, *Spencer s.n.* (ILL). Busey Woods, 1977, *Lee 61* (axenic cult. coll. M. Sargent). On soil by Gregory Hall, Univ. Ill., 1981, *Moran s.n.* On soil 3 km NE of Sidney, 1983, 2696. On shaded soil in lawn, corner Cedar and IHigh, Urbana, 1983, 2563. Abundant.

*Brothera leana* (Sull.) C.M. — On decaying logs, Trelease Woods, 1984, 4357. Crum & Anderson (1981) note that this species is rare in eastern North America. McCleary & Redfearn (1979) list it from only nine Illinois counties, including Champaign. Rare.

\**Brotherella tenuirostris* (Bruch & Schimp. ex Sull.) Fl. — On decaying log, Brownfield Woods, 1984, 3880. On decaying log, Trelease Woods, 1984, 4362. Rare.

\**Bruchia flexuosa* (Schwaegr.) C.M. — On soil in unplowed soybean field, T18N R9E S3, 19 Feb 1983, 2583 (also in axenic cult. coll. M. Sargent), *Rushing s.n.* (pers. coll. A. Rushing). On soil in one-year-old field abandonment plot at Phillips Tract, T19N R9E S2, 15 Apr 1985, 4470. Associate species at both sites were *Acaulon*, *Physcomitrium*, and *Pleuridium*. Rare.

\**Bryhnia graminicolor* (Brid.) Grout — On wooded soil bank, T18N R10E S1, 1983, 2701. On wooded slope, T20N R7E S15, 1984, 4041. Occasional.

\**Bryohaplocladium microphyllum* (Hedw.) Wat. & Iwats. — On bark, Urbana [intermixed with *Entodon cladorrhizans*], 1886, *Earle s.n.* (ILL 31044). Brownfield Woods, 1934, *Boewe s.n.*; on decaying log, 1983, 2726, 2729. On decaying log, Trelease Woods, 1984, 4063, 4353. On *Salix* in floodplain, T20N R7E S10, 1984, 4389, *Helton 69*. Occasional.

*Bryohaplocladium virginianum* (Brid.) Wat. & Iwats. — On soil in fence row, Brownfield Woods, 1984, 4398. This species was reported from Champaign County by McCleary & Redfearn (1979), but a specimen at ILLS collected by Boewe and identified by Redfearn is misdetermined as *B. microphyllum*. Rare.

*Bryum argenteum* Hedw. — On coal ashes, Urbana, 1886, *Ayers s.n.* (ILL 31046). Along railroad, E of Urbana, 1951, *Ahles 4733* (II.I.). On soil in sidewalk crevices, Urbana, 1956, *Jones 21681* (II.I.). On *Fraxinus*, E side Hart Woods, 1976, *Spencer s.n.* (ILL). On soil by Undergrad. Libr., Univ. Ill., 1981, *Moran s.n.* On sand at abandoned quarry, T20N R7E S29, 1984, 3862. Forming small cushions on exposed old concrete railroad trestle, T18N R10E S15, 1984, 4087. On asphalt roof, Purnell Woods, 1984, *Helton 33*. Abundant.

\**Bryum bicolor* Dicks. — On sandy soil in unplowed corn stubble, T18N R11E S6, 5 Mar 1983, 2700 (dup. det. J. Shaw, DUKE). Rare.

\**Bryum caespitium* Hedw. — On soil along railroad, Champaign, 1952, *Ahles s.n.* (ILL). On sandy soil in unplowed corn stubble along creek, T19N R11E S6, 1983, 2579. On sand at abandoned quarry, T20N R7E S29, 1984, 4050. On soil-covered concrete, T21N R7E S12, 1984, 4053. Common.

\**Bryum creberrimum* Tayl. — In crevices of concrete railroad trestle, T18N R10E S15, 1983, 2628. On soil in clearing, Busey Woods, 1984, 4010. On old concrete railroad trestle, T18N R10E S15, 1984, 4086. Occasional.



*Bryum klinggraeffii* Schimp. ex Klinggr. — On soil-covered bridge planks, T22N R11E S1, 25 Aug 1984, 3956 (dup. det. J. Shaw, DUKE). The rhizoids bore numerous crimson tubers. This species was recently reported from this site as a state record (McKnight, 1985). Rare.

*Callicladium haldanianum* (Grev.) Crum — On decaying log, Brownfield Woods, 1975, *Spencer s.n.* (ILL); 1984, 3877. On decaying log, Trelease Woods, 1984, 4068, 4360. On decaying log, T21N R7E S26, 1986, 4868. Occasional.

*Campylium chrysophyllum* (Brid.) J. Lange — On soil, Busey Woods, 1947, *Winterringer s.n.* (ILL); on moist crumbling concrete, Busey Woods, 1984, 4005. At base of *Crataegus*, T19N R9E S3, 1983, 2597. On clayey road bank, T21N R7E S6, 1984, 3861, 4033. On soil, Harvey Cemetery, Urbana, 1984, 4013. On wooded slope, T21N R7E S35, 1984, 4079. On disturbed soil slope, T21N R7E S26, 1986, 4869. Common.

*Campylium hispidulum* (Brid.) Mitt. — [On *Tsuga* and *Picea* needles] Urbana, 1886, *MBW s.n.* (ILL 31037). On shaded old concrete railroad trestle, T18N R10E S15, 1984, 4089. Occasional.

*Ceratodon purpureus* (Hedw.) Brid. — On decaying log in woods NE of Urbana, 1942, *Evers 921*. Univ. Ill. golf course, Urbana, 1952, *Jones 19543* (ILL). On soil around greenhouse, Univ. Ill., 1982, *Moran 2130*. On decaying cedar shingles, T18N R10E S9, 1983, 2647. On soil, T18N R10E S1, 1983, 2620. On *Malus* branch, T19N R9E S3, 1983, 2604. On soil in clearing, Busey Woods, 1984, 4008. On soil, Brownfield Woods, 1984, 4396. On asphalt roof, Purnell Woods, 1984, *Helton 53*. Common.

\**Desmatodon obtusifolius* (Schwaegr.) Schimp. — On old shaded limestone bridge abutment, T19N R10E S27, 1983, 2613. On old shaded limestone bridge abutment, T18N R10E S4, 1983, 2646. On shaded concrete tombstone, T20N R7E S15, 1984, 4023 (dup. ver. R. Zander, BUF). Occasional.

*Dicranella heteromalla* (Hedw.) Schimp. — On shaded sandy bank, Urbana, 1942, *Jones s.n.* On soil along roadside NE of Urbana, 1942, *Evers 914*. On soil slope, T18N R11E S6, 1983, 2625. Common.

\**Dicranella varia* (Hedw.) Schimp. — On barren clayey slope, T18N R11E S6, 1984, 4091. On river bank, T20N R7E S35, 1984, 4402. On disturbed soil slope, T20N R7E S14, 1986, 4863. Occasional.

\**Dicranum scoparium* Hedw. — On soil in woods, T18N R10E S10, 1983, 2632, 2642a. This population was found in one of the most bryophyte-rich areas in the county; an upland woods immediately northeast of Sidney on the north side of the Salt Fork. Associate species included *Jamesoniella autumnalis*, *Leucobryum glaucum*, *Polytrichum juniperinum*, and *P. ohioense*. This site represents the only known location for these extra taxa in the county. Rare.

\**Didymodon fallax* (Brid.) Zander var. *fallax* — On concrete bridge abutment, T19N R10E S27, 1983, 2615 (dup. det. R. Zander, BUF). Rare.

\**Didymodon tophaceus* (Brid.) Lisa — In seepage cracks of old concrete railroad trestle, T18N R10E S15, 1984, 4088 (dup. det. R. Zander, BUF). Rare.

*Ditrichum pallidum* (Hedw.) Hampe — On soil in woods, T18N R10E S10, 1983, 2638. On soil, Purnell Woods, 1984, *Helton 64*. On soil in woods, T20N R7E S11, 1986, 4859. Occasional.

\**Drepanocladus aduncus* (Hedw.) Warnst. var. *aduncus* — Forming thick mats intermixed with *Typha* in railroad marsh, T21N R9E S3, 1984, 3955. Rare.

*Drepanocladus aduncus* (Hedw.) Warnst. var. *kneiffii* (BSG) Mönk. — Glover Marsh, 1952, *Ahles s.n.* (ILL); among *Typha* and free-floating, 1984, 3815, 3817. Rare.

*Entodon cladorrhizans* (Hedw.) C.M. — Urbana, 1886, *Earle s.n.* (ILL 31062). 1890, *Craig s.n.* (ILL 31063). On log, Purnell Woods, 1984, 4377. Rare.

*Entodon compressus* C.M. — On bark at base of *Quercus* on river bank, T20N R7E S15, 1984, 4042 (dup. ver. H. Crum, MICH). On decaying log, Trelease Woods, 1984, 4059 (dup. ver. H. Crum, MICH). On bark of *Acer* in wet cavity, Mt. Hope Cemetery, Champaign, 1985, 4829. Occasional.

*Entodon seductrix* (Hedw.) C.M. — Urbana, 1877, *TJB s.n.* (ILL 31086). 1878, *TJB s.n.* (ILL 31071, 31074, 31080, 31081, 31091). 1885, *MBW s.n.* (ILL 31035). Mahomet, 1887, *TJB s.n.* (ILL 31052). 1890, *Craig s.n.* (ILL 31060). 1898, *Gibbs s.n.* (ILL 28175); *Clinton & Gibbs s.n.* (ILL 28166); *Bot. Class* (ILL 28178). On soil near Urbana, 1898, *GPC s.n.* (ILL 28170). On decaying log near Urbana, 1942, *Jones 15570* (ILL). Base of tree, woods near St. Joseph, 1948, *Jones 18843* (ILL). On fallen tree in river bottom near Penfield, 1952, *Ahles s.n.* (ILL). Brownfield Woods, 1947, *Winterringer s.n.* (ILL); 1975, *Spencer s.n.* (ILL); on decorticated log, 1983, 2717; 1984, 3878; on soil in fence row, 1984, 4399. On *Acer*, corner Busey and Green, Urbana, 1983, *Moran s.n.* On decorticated log, Busey Woods, 1984, 4008. On asphalt roof, Purnell Woods, 1984, *Helton 3*. On decaying log, Sangamon floodplain, T20N R7E S14, 1986, 4855, 4860; at base of *Quercus* in upland woods, 4847. Abundant.

\**Ephemerum spinulosum* Schimp. — On soil in unplowed soybean field, T18N R9E S10, 25 Feb 1983, 2585, 2591 (also in axenic cult. coll. M. Sargent) dup. ver. H. Crum (MICH). On soil in unplowed corn stubble, 2 km SE of St. Joseph, 19 Feb 1983, 2578. On shaded soil in lawn, T20N R7E S15, 8 Sep 1984, 4044. The ground at the first mentioned site was covered with this pygmy in 1983 but was totally devoid of bryophytes during winter and spring of 1984 and 1986. The 1983 winter was one of the warmest on record with very little snow, whereas the 1984 winter was very cold with heavy snow. Occasional.

\**Eurhynchium hians* (Hedw.) Sande-Lac. — On soil, Brownfield Woods, 1975, *Spencer s.n.* (ILL); 1981, *Moran 1778*. On soil on thicketed slope, T19N R9E S3, 1983, 2599. On shaded soil in lawn, corner Cedar and High, Urbana, 1983, 2562. On soil in thicket, Busey Woods, 1985, 4832. On soil, Purnell Woods, 1984, *Helton 60*. On soil at edge of cultivated field, T18N R11E S6, 1986, *Rohrer* (pers. coll. J. Rohrer). Abundant.

\**Eurhynchium pulchellum* (Hedw.) Jenn. — On soil mound, Brownfield Woods, 1984, 4397. On soil in woods, T20N R7E S14, 1986, 4845. Occasional.

\**Fissidens bryoides* Hedw. — On soil road bank, T19N R9E S4, 1983, 2608. On decaying stump and old concrete on river bank, T20N R7E S10, 1984, 4027, 4031. Base of *Fraxinus* in calcareous hillside seep, T21N R7E S35, 1984, 4076. Occasional.

\**Fissidens fontanus* (B.-Pyl.) Steud. — On concrete and branches in stream. T19N R10E S36, 1983, 2619. Population revisited in March 1986. Rare.

\**Fissidens obtusifolius* Wils. — On shaded limestone bridge abutment, T19N R10E S27, 1983, 2701. Rare.

*Fissidens taxifolius* Hedw. — On soil, Brownfield Woods, 1940, *Jones 12657* (ILL); 1941, *Jones 14921* (ILL); 1942, *Evers 922*; 1951, *Jones s.n.* (ILL); 1981,

*Moran* 1769; 1983, 2598; 1984, 3881. On soil, Busey Woods, 1947, *Winterringer s.n.* (ILL). On soil 1.6 km E of Urbana, 1947, *Scherer s.n.* (ILL). On soil, Hart Woods, 1975, *Spencer s.n.* (ILL). In calcareous hillside seep, T21N R7E S35, 1984, 4074. On soil slope along Sangamon River, T20N R7E S5, 1986, 4872. Occasional.

*Funaria hygrometrica* Hedw. — On soil, Urbana, 1877, *TJB s.n.* (ILL 12648). On soil along roadside NE of Urbana, 1942, *Evers* 916. Busey Woods, 1980, *Sargent s.n.* (axenic cult. coll. M. Sargent). On bank of Boneyard Creek at Mathews Street, Urbana, 1983, 2588. On sand at abandoned quarry, T20N R7E S29, 1984, 4051. Common.

\**Grimmia apocarpa* Hedw. var. *apocarpa* — On concrete culvert, T19N R10E S36, 1983, 2616. Rare.

*Grimmia plagiopoda* Hedw. — On old shaded limestone bridge abutment, T19N R10E S27, 1983, 2614. On N and W sides of old concrete tombstone base in Mt. Hope Cemetery, Urbana, 1984, 3991. On old concrete tombstone in Riverside Cemetery, Mahomet, 1984, 4021. Dups. var. II. Crum (MICH). A survey of most cemeteries and bridge abutments in the county failed to reveal any other populations. Crum & Anderson (1981) note that this species is rare in eastern North America. It was recently reported from Champaign County as a state record (McKnight, 1985). Rare.

\**Grimmia rivularis* Brid. var. *rivularis* — On old concrete, near Mahomet, 1952, *Ahles s.n.* (ILL). On limestone tombstone in Mt. Hope Cemetery, Sidney, 1983, 2581. On mortar of stone wall, T20N R7E S31, 1984, 4045b. Occasional.

\**Haplohymenium triste* (Ces. ex De Not.) Sull. — On *Quercus*, T18N R10E S10, 1983, 2644. On *Fraxinus*, Trelease Woods, 1984, 4348. Rare.

\**Hedwigia ciliata* (Hedw.) P.-Beauv. — On *Celtis*, corner California and Mathews, Urbana, 1983, 2564. Scattered small patches on stone wall, T20N R7E S31, 1984, 4046. On asphalt roof, Purnell Woods, 1984, 4372, *Helton* 29. On asphalt, abandoned road, T21N R7E S5, 1986, 4870. The discovery of this species on bark and on asphalt is noteworthy. Occasional.

\**Homomallium adnatum* (Hedw.) Broth. — On old concrete, wooded N bank of Saline Branch Drainage Ditch, East Lawn Cemetery, Urbana, 1984, 4015. Rare.

*Hypnum curvifolium* Hedw. — Urbana, 1878, *Britton s.n.* (ILL 31075). On decaying log, Brownfield Woods, 1983, 2728 (dup. var. H. Crum. MICH). On shaded soil road bank, T22N R14W S5, 1984, 3960. Rare.

\**Hypnum lindbergii* Mitt. — On decaying wood on trail, Busey Woods, 1984, 4006. On soil in mowed field, T20N R7E S10, 1984, 4037, 4370. On soil on bank of Sangamon River, T20N R7E S15, 1984, 4032. Occasional.

\**Isopterygium tenerum* (Sw.) Mitt. — On decaying log, Brownfield Woods, 1975, *Spencer s.n.* (ILL); 1984, 4366. On decaying log, Trelease Woods, 1984, 4061, 4342, 4356. Occasional.

*Leptobryum pyriforme* (Hedw.) Wils. — On heavily disturbed soil bank, Boneyard Creek at Mathews Street, Urbana, 1 Sep 1984, 3986. Probably escaped from Univ. Ill. greenhouse. Rare.

*Leskea gracilescens* Hedw. — 1878, *TJB s.n.* (ILL 31066). 1880, *Seymour & Burrill s.n.* (ILL 31049). 1884, *MBW s.n.* (ILL 30130). 1886, *S & W s.n.* (ILL 31048). On concrete wall, Urbana, 1952, *Ahles s.n.* (ILL). On *Ulmus* near Homer along Salt Fork, 1952, *Ahles s.n.* (ILL). On tree in river bottoms near Penfield, 1952, *Ahles s.n.* (ILL). 1957, *Jones* 21258 (ILL). On bark, Brownfield Woods, 1971,

*Schmidt s.n.* (ILL.). On *Quercus*, T18N R11E S6, 1983, 2623. On *Crataegus* at edge of woods, T19N R9E S3, 1983, 2600. On *Ulmus*, E side INHS, Urbana, 1984, 3965. On decaying log on river bank, T22N R14W S6, 1984, 3957. Wooded stream bank on *Fraxinus*, T19N R9E S9, 1984, 4014. On *Quercus*, Purnell Woods, 1984, 4381; on asphalt roof, Helton 30. On *Celtis* along road, T18N R11E S30, 1985, 4721. On bark at base of *Quercus*, T20N R7E S14, 1986, 4846; on *Quercus* burl, 4852. See *Leskea obscura* below for additional comments. Abundant.

\**Leucobryum glaucum* (Hedw.) Schimp. — On soil in woods, T18N R10E S10, 1983, 2633. Rare.

*Mnium affine* Bland. ex Funck, s.l. — On soil, Trelease Woods, 1984, 4056. On clayey river bank, T18N R11E S6, 1984, 4092, 4097. Occasional.

*Mnium cuspidatum* Hedw. — 1884, *Seymour s.n.* (ILL 12672). Urbana, 1890, *Craig s.n.* (ILL 31063). Univ. Ill. Forest, Urbana, 1895. *GPC s.n.* (ILL 11727). Woods, Urbana, 1898. *Clinton & Gibbs s.n.* (ILL 28167). On soil, Mahomet, 1898, *GPC s.n.* (ILL 28177). On soil near Urbana, 1942, *Jones 15252* (ILL). W side Nat. Hist. Bldg., Univ. Ill., 1956, *Jones 19171* (ILL). Brownfield Woods, 1947, *Winter-ringer s.n.* (ILL); 1975, *Spencer s.n.* (ILL); on decaying log, 1981, *Moran 1771*; 1983, 2720. On soil, Purnell Woods, 1984, *Helton 52*. On thicketed slope, T19N R9E S3, 1983, 2601. On soil, T18 R11E S6, 1986, 4886. Also intermixed in collections of numerous other taxa. Abundant.

\**Mnium marginatum* (With.) Brid. — In calcareous hillside seep, T21N R7E S35, 1984, 4077. Rare.

\**Orthotrichum pumilum* Hedw. — On *Celtis* stump along road, T18N R10E S2, 1983, 2626. On *Ulmus*, E side INHS, Urbana, 1984, 3964 (dup. ver. H. Crum, MICH). On N wall of concrete tomb, Mt. Hope Cemetery, Urbana, 1984, 3993. On *Ulmus*, Woodlawn Cemetery, Urbana 1984, 3994. On *Ulmus*, East Lawn Cemetery, Urbana, 1984, 4017b. On old concrete wall, corner Birch and Green, Urbana, 1984, 4100. On asphalt roof, Purnell Woods, 1984, 4371. On tombstone, T20N R7E S15, 1984, 4020. On *Celtis* along road, T18N R11E S30, 1985, 4720. On *Ulmus*, T21N R7E S26, 1986, 4864. Common.

\**Orthotrichum pusillum* Mitt. — On *Acer*, corner Illinois and Cedar, Urbana, 1982, 1605a. On limestone bridge abutment, T19N R10E S27, 1983, 2913. On *Ulmus* along road, T20N R7E S10, 1984, 4883. Occasional.

\**Phascum cuspidatum* Hedw. — On soil, corner Main and Poplar, Urbana, 20 Feb 1983, 2587. On soil road bank, T18N R9E S4, 27 Feb 1983, 2609. On soil in mowed field, T20N R7E S10, 1 Dec 1984, 4386. Occasional.

*Physcomitrium pyriforme* (Hedw.) Hampe — On soil, Univ. Ill. campus, spring 1934, *Boewe s.n.* On soil NE of Urbana, 17 Jun 1942, *Evers 910*. On soil, Champaign, 19 May 1952, *Ahles s.n.* (ILL). On soil, Brownfield Woods, 12 Jul 1975, *Spencer s.n.* (ILL). On soil in parking lot, N side of INHS, Champaign, 10 Jan 1983, 2544. See *Pottia truncata* below for further comments. Abundant.

\**Plagiothecium cavifolium* (Brid.) Iwats. — On wooded slope, T20N R7E S15, 1984, 4039, 4043. Rare.

\**Plagiothecium denticulatum* (Hedw.) BSG — On decaying stump, Trelease Woods, 1984, 4363. Rare.

\**Platygyrium repens* (Brid.) BSG — [On wood] Urbana, 1890, *Craig s.n.* (ILL 31050). On old log, Mahomet, 1898, *GPC s.n.* (ILL 28176). Woods, Urbana, 1898, *Clinton & Gibbs s.n.* (ILL). Brownfield Woods, 1934, *Boewe s.n.*; on decaying log,

1983, 2718. On decaying log, Hart Woods, 1975, *Spencer s.n.* (ILL). On decaying log, Purnell Woods, 1984, *Helton 20, 21*. On decaying log, T20N R7E S5, 1986, 4877. Abundant.

\**Pleuroidium subulatum* (Hedw.) Rabh. — On clayey road bank, T21N R7E S36, 1 Jun 1984, 3860. On clayey soil in clearing in woods, T18N R10E S10, 2 Jun 1984, 3868. Rare.

\**Pleurozium schreberi* (Brid.) Mitt. — On soil in fence row, W side Brownfield Woods, 1984, 4395. Rare.

\**Pohlia melanodon* (Brid.) Shaw — On soil in Sullivan's car lot, Neil Street, Champaign, 17 Jan 1985, 4408 (dup. det. J. Shaw, DUKE). Rare.

\**Pohlia wahlenbergii* (Web. & Mohr) Andr. — In calcareous hillside seep, T21N R7E S35, 1984, 4075. Rare.

\**Polytrichum formosum* Hedw. — On soil in road bed, W side Brownfield Woods, 1981, *Sargent 344* (pers. coll. M. Sargent); 1984, 4393 (dup. ver. H. Crum, MICH). This is only the third report of this species in Illinois. Rare.

\**Polytrichum juniperinum* Hedw. — On soil in woods, T18N R10E S10, 1983, 2636, 2640. Rare.

\**Polytrichum ohioense* Ren. & Card. -- On soil in woods, T18N R10E S10, 1983, 2642b. Rare.

\**Pottia truncata* (Hedw.) Fühnr. ex BSC — On soil in mowed field, T20N R7E S10, 1 Dec 1984, 4387 (dup. ver. H. Crum, MICH). This species could easily be mistaken for a small expression of the abundant *Physcomitrium pyriforme*. However, the phenology of the two species is distinct; *Pottia* produces capsules in late fall while *Physcomitrium* does so in late spring. This collection represents only the third report for the species in Illinois. Rare.

\**Ptychomitrium incurvum* (Schwaegr.) Sull. — On bark of fallen *Quercus*, Purnell Woods, 1 Dec 1984, 4390 (dup. det. H. Crum, MICH). Capsules were present on some of the plants. This species is usually found on rock. Rare.

*Pylaisiella selwynii* (Kindb.) Crum, Steere & Anders. — 1878, *EJB s.n.* (ILL 31069). On bark, Mahomet, 1884, *MBW s.n.* (ILL 31043); *S & M s.n.* (ILL 31073). On bark, Urbana, 1886, *Earle s.n.* (ILL 31061). On *Crataegus*, T19N R9E S3, 1983, 2595. On log, T20N R7E S10, 1984, 4391. On *Ulmus*, East Lawn Cemetery, Urbana, 1984, 4017a. Previous reports of *P. intricata* are referrable here. Occasional.

*Rhynchostegium serrulatum* (Hedw.) Jaeg. & Sauerb. — On sticks, Urbana, 1886, *MBW s.n.* (ILL 31053). Busey Woods, 1947, *Winterringer s.n.* (ILL). Weed in lawn, Urbana, 1952, *Jones 19508* (ILLIS). On stream bank, Hart Woods, 1975, *Spencer s.n.* (ILL). On wooded slope, T18N R10E S1, 1983, 2702. On soil road bank, T18N R9E S4, 1983, 2607. On wooded slope, T21N R7E S35, 1984, 4036. On shaded soil, East Lawn Cemetery, Urbana, 1984, 4016. On decaying log, Purnell Woods, 1984, 4376. On soil under *Juniperus*, E side Educ. Bldg., Univ. Ill., 1985, 4576. On decaying log, Trelease Woods, 1984, 4057. On soil, north-facing slope, T20N R7E S5, 1986, 4882. Abundant.

\**Schwetschkeopsis fabronia* (Schwaegr.) Broth. — On bark at base of *Quercus*, Trelease Woods, 1984, 4354. Rare.

\**Taxiphyllum deplanatum* (Bruch & Schimp. ex Sull.) Fl. — On wooded slope along Sangamon River, T20N R7E S5, 1986, 4881. Rare.

\**Taxiphyllum taxirameum* (Mitt.) Fl. — On river bank, T19N R9E S2, 1983, 2710. On river bank, T18N R10E S10, 1984, 3866. On wooded slope, T20N R7E

S15, 1984, 4040. On wooded slope, T20N R7E S14, 1986, 4854. On soil at edge of woods, N side of Salt Fork, T18N R11E S6, 1986, *Rohrer 3736* (pers. coll. J. Rohrer). Occasional.

\**Thuidium delicatulum* (Hedw.) BSG — 1878, *TJB s.n.* (ILL 31079). Urbana, 1879, *TJB s.n.* (ILL 31065). 1890, *Craig s.n.* (ILL 31036). On decaying log, Brownfield Woods, 1975, 1976, *Spencer s.n.* (ILL); 1983, 2724. On soil, clearing in woods, T20N R7E S5, 1986, 4879. Occasional.

*Thuidium recognitum* (Hedw.) Lindb. — On log, Mahomet, 1887, *MBW s.n.* (ILL 31059). On soil in woods, T18N R10E S10, 1983, 2637. Rare.

\**Tortella humilis* (Hedw.) Jenn. — On old concrete railroad trestle, T18N R10E S15, 1984, 4090. Additional populations should be found on tree bases, its typical habitat in the Midwest. Rare.

*Weissia controversa* Hedw. -- On soil, Urbana, 1878, *Britton s.n.* (ILL 31071); 1885, *Britton s.n.* (ILL 31055); 1945, *Jones s.n.* (ILL). On soil along Salt Fork near St. Joseph, 1940, *Jones 11184* (ILL). On soil in lawn, Urbana, 1981, *Carothers s.n.* (axenic cult. coll. M. Sargent). On soil road bank, T18N R9E S4, 1983, 2610. On stone wall, T20N R7E S31, 1984, 4045a. On disturbed soil, T20N R7E 1984, 4385. On soil, T20N R7E S14, 1986, 4858. Occasional.

#### ANNOTATED LIST OF PREVIOUSLY UNREPORTED BRYOPHYTES WHICH WERE NOT FOUND IN THE FIELD DURING THIS STUDY

\**Bryum pseudotriquetrum* (Hedw.) Gaertn., Meyer & Scherb. — [On *Tsuga* and *Picea* needles] Urbana, intermixed with *Campylium hispidulum*, 1886, *MBW s.n.* (ILL 31037).

\**Fabronia ciliaris* (Brid.) Brid. — On piece of *Acer* bark, Brownfield Woods, 1976, *Spencer s.n.* (ILL).

#### ANNOTATED LIST OF PREVIOUSLY REPORTED BRYOPHYTES WHICH WERE NOT RELOCATED IN THE FIELD DURING THIS STUDY

##### HEPATICAEE (4)

*Conocephalum conicum* Dum. — On wet bank, Mahomet (Big Springs), 1880, *Burrill & Seymour s.n.* (ILL). No record of a "Big Springs" in Champaign County was found.

*Lophocolea cuspidata* (Nees) Limpr. f. *alata* K. Müll. — Reported from Illinois (Urbana), Drexler *vide* Frye & Clark (1937-1947); no voucher at ILL or ILLS. It is likely that this report is based on a misdetermined specimen of *L. heterophylla*; Schuster (1980), "erroneously" reported from Illinois (Urbana).

*Porella platyphylla* (L.) Pfeiff. — Reported by Frye & Clark (1937-1947), Hague & Drexler (1938) and Schuster (1980); no voucher at ILL or ILLS. It is often difficult to distinguish this species from *P. platyphylloidea*. In fact one of the collections listed above under *P. platyphylloidea* is intermediate between the two species.

*Ptilidium pulcherrimum* (G. Web.) Hampe — Reported by Hague & Drexler (1938); no voucher at ILL or ILLS. This species is not common in the Midwest and is then usually found on decaying logs.

## MUSC1 (10)

*Bryum uliginosum* (Brid.) BSG — On soil, Mahomet, 31 Jul 1884, MBW s.n. (ILL 31040). Woods, Mahomet (Big Springs), 5 Aug 1880, TJB s.n. (ILL 31038). Both collections of this rare species have capsules.

*Climacium americanum* Brid. — Mahomet, May 1887, TJB s.n. (ILLS 31045).

*Entodon brevisetus* (Wils.) Lindb. — The vouchers at ILL are misdetermined collections of *E. seductrix*.

*Hypnum imponens* Hedw. — Urbana, 1878, TJB s.n. (ILL 31081). Intermixed with *Entodon cladorrhizans* and *Thuidium delicatulum*.

*Leskea obscura* Hedw. — On *Ulmus* along Sangamon River, Mahomet, 1952, Jones 19515 (ILL). Most of the vouchers at ILL and ILLS have some biplicate leaves with recurved margins and, therefore, are misdetermined collections of *L. gracilescens*. The differences between the species in this genus are so minor that certain identification is almost impossible. The comment by Crum & Anderson (1981), "The species of *Leskea* are not well marked.", is an understatement.

*Leskea polycarpa* Hedw. — On bark, Univ. Ill. Forest, Urbana, 5 Jul 1890, Craig s.n. (ILL 10014). Dup. ver. H. Crum (MICH). Plants with unusually long setae (8-15 mm).

*Leucodon julaceus* (Hedw.) Sull. — Reported by Hague (1930) and McCleary & Redfearn (1979), no voucher at ILLS. A few plants were found intermixed with collections of: *Anomodon minor*, Urbana, 1878, TJB s.n. (ILL 31070); *Brachythecium acuminatum*, Urbana, 1878, TJB s.n. (ILL 31073, 31084); and *Pylaisiella selwynii*, Urbana, 1886, Earle s.n. (ILL). That *Leucodon* was not found during this study indicates the scarcity of old growth forests in the county.

*Mnium longirostrum* Brid. (= *M. rostratum* Schrad. ex Anon.) — Reported by Hague (1930) and McCleary & Redfearn (1979); probably based on several misnamed collections of *M. cuspidatum* at ILL.

\**Philonotis fontana* (Hedw.) Brid. — Champaign, 1884, Seymour s.n. (ILL 12676), misdetermined specimen of *P. marchica* (Hedw.) Brid. Annot. W. Zales, 1976. A wetland species that probably has been extirpated from the county.

*Pylaisiella intricata* (Hedw.) Grout — The vouchers at ILL are all misdetermined collections of *P. selwynii*.

## CONCLUSIONS

I found only 107 species of bryophytes (95 mosses and 12 liverworts) in Champaign County, Illinois. The taxa are primarily weedy and common throughout the Midwest, although 63 county records are listed, including two recently reported state records (*Bryum klinggraeffii* and *Grimmia plagiopoda*). Only ten species were abundant and, except for *Frullania eboraensis*, all the liverworts were either rare or occasional. The high moss to liverwort ratio (8:1) is indicative of the absence or scarcity of prime bryophyte habitat (e.g., old growth forests, rock outcroppings, and wetlands). Four previous reports were discovered to be based on misdetermined specimens. Nine previous reports were confirmed, but no vouchers were available for three other previous reports. One formerly reported liverwort (*Lunularia cruciata*) was found only in greenhouses and, therefore, is not considered part of the county bryoflora. Notable findings include two populations of *Drepanocladus* in small wetlands adjacent to railways. The presettlement vegetation map (Fig. 1)

indicates that these populations may be relicts in vestiges of natural wetlands like Glover Marsh that are rapidly being destroyed. No bryophytes were found in any of the several small *Acorus* marshes surveyed; this absence of bryophytes may be attributable to the fact that these marshes are located in areas used as pasture. The favored ligneous substrata in the county was decaying logs. Large living *Celtis* and *Ulmus* trees along roadsides and in cemeteries frequently supported a lush growth of *Leskea* and *Orthotrichum*. The next most common corticolous hosts were *Fraxinus* and *Quercus alba*. I did not discern any difference in the kind or frequency of corticolous bryophytes in Champaign-Urbana versus rural areas. This is not surprising since there is relatively little industrial development. Also interesting was the large number of pygmy ephemerals and the discovery of the infrequently collected *Brothera leana*, *Polytrichum formosum*, and *Ptychomitrium incurvum*. The best locations for bryophytes are Brownfield Woods, Trelease Woods, the woods along the Sangamon River north of Mahomet, and the woods along the Salt Fork east of Sidney, especially the section immediately northeast of Sidney.

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