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A BRYOLOGICAL SURVEY OF THE SOUTHERN PANHANDLE OF NEBRASKA

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Moss collections made in Arthur, Banner, Cheyenne, Deuel, Garden, Grant, Keith, Kimball, Morrill, and Scotts Bluff counties of Nebraska during the summer of 1981 comprised 19 species. The number of moss species now known in the southern Panhandle of Nebraska is 34 in addition to three liverworts.

† † †

INTRODUCTION

During the summer of 1981, moss collections were made in Arthur, Banner, Cheyenne, Deuel, Garden, Grant, Keith, Kimball, Morrill, and Scotts Bluff counties of the southern Panhandle of Nebraska. Previously Koch (1971 and 1975), Churchill (1977, 1979, 1982a, and 1982b), and Churchill and Redfearn (1977) reported mosses and liverworts from Banner, Cheyenne, Garden, Grant, Keith, Kimball, and Scotts Bluff counties, but there is no known report from Arthur, Deuel, or Morrill counties.

Arthur, Banner, Cheyenne, Deuel, Garden, Grant, Keith, Kimball, Morrill, and Scotts Bluff counties are located in the southern Panhandle region of Nebraska. Soils in Banner, Cheyenne, Kimball, Morrill, and Scotts Bluff counties are sandy loam (Alice, Anselmo, Dunday-Valentine, Otero-Bayard, and Valentine), loam (Atvan and Keith), and silty loam (Mitchell). Canyons and rock outcrops consisting of gray sandstone, which may be covered by a thin layer of soil (Rosebud and Tassel-Anselmo), may be found in Scotts Bluff, Banner, and northern Kimball counties. Arthur, Garden, Grant, and Keith counties are located in the Sand Hills region of Nebraska with the soils (Valentine-Thedford) being of sandy texture with quartz sand as the parent source (Keech and Bentall, 1971). The major river of the southern Panhandle is the North Platte with Lake McConaughy occurring primarily in Keith County but extending into Garden County. Several Sand Hills lakes occur in Arthur, Garden, and Grant counties.

The annual precipitation for the southern Panhandle region is approximately 38.1 cm with low relative humidity. The area is virtually treeless except in the canyons and along the North Platte River. The native vegetation consists mainly of short and mid-grasses.

Moss collections were made along river, stream, and lake banks; in sheltered wooded areas; city parks where periodic irrigations occurred; sheltered rock outcrops; and other sheltered areas.

Nineteen species of mosses were collected and represent range extensions for the known Nebraska bryophyte flora. All collections have been identified, catalogued, and placed in the Kearney State College collections. Species previously reported from the region but not collected in this survey are listed with those from the present collection to make the checklist complete. Collection numbers for voucher specimens from the present collection are those of the author, and county records are indicated by an asterisk (*) preceding the site number. Nomenclature follows Crum et al. (1973) and Stotler and Crandall-Stotler (1977).

COLLECTIONS

Sites

1. Arthur County: Arthur City Park.
2. Banner County: Banner County Courthouse, Harrisburg.
3. Cheyenne County: Sidney City Park.
4. Deuel County: Chappell City Park.
5. Garden County: Ash Hollow State Recreation Area, picnic and campground area on US 26.

6. Garden County: Ash Hollow Visitor Center, trails to springs and caves.
7. Grant County: City street of Hyannis.
8. Keith County: Ogallala City Park.
9. Keith County: Lake Ogallala State Recreation Area, east bank.
10. Keith County: Lake Ogallala State Recreation Area, west bank.
11. Kimball County: Kimball City Park.
12. Morrill County: City street of Bridgeport.
13. Scotts Bluff County: Pioneer Park, Scottsbluff.
14. Scotts Bluff County: Gardner Park, Gering.
15. Scotts Bluff County: Scotts Bluff National Monument, near Scottsbluff.
16. Scotts Bluff County: Mitchell City Park.
17. Scotts Bluff County: Sands Motel, Scottsbluff.

Musci

Aloina rigida (Hedw.) Limpr.

Keith and Scotts Bluff counties (Churchill, 1979).

Amblystegium serpens (Hedw.) B. S. G.

*Site 1: 7105, north side of building on moist (irrigated) soil. *Site 10: 7043, on moist soil in drainage ditch. *Site 13: 7142, north side of building on moist (irrigated) soil. Site 14: 7167, on moist (irrigated) soil under picnic table. Site 16: 7203, on concrete in drainage tank.

A. varium (Hedw.) Lindb.

*Site 1: 7091, on moist (irrigated) soil on north side of building. *Site 3: 7292, on moist (irrigated) soil on north side of building. *Site 9: 7009, on moist (irrigated) soil on north side of building. Site 10: 7056, on moist soil in drainage ditch. *Site 14: 7169, on moist (irrigated) soil under picnic bench.

Barbula acuta (Brid.) Brid.

Cheyenne County (Koch, 1975).

B. convoluta Hedw.

*Site 3: 7292, on moist (irrigated) soil on north side of building. *Site 12: 7138, on dry, concrete sidewalk (periodically irrigated).

B. fallax Hedw.

*Site 1: 7099, on moist (irrigated) soil on north side of building. *Site 3: 7297, on moist (irrigated) soil on north side of building. *Site 6: 7071, on shaded, dry rock.

B. unguiculata Hedw.

*Site 3: 7285, on moist (irrigated) soil on north side of building. *Site 8: 7003, on moist (irrigated) soil under *Spirea* sp. bush. Site 10: 7027, on moist, shaded soil.

Brachythecium collinum (Schleich. ex C. Muell.) B. S. G. Scotts Bluff County (Churchill, 1979).

B. salebrosum (Web. and Mohr) B. S. G.

*Site 10: 7015, on moist, shaded soil in drainage ditch. *Site 13: 7143, north side of building on moist (irrigated) soil. Site 14: 7180, on moist (irrigated) soil under picnic bench.

Bryum algovicum Sendtn. ex C. Muell.

*Site 3: 7282, on moist (irrigated) soil on north side of building. *Site 5: 7061, on shaded, moist soil by water pump. Site 6: 7079, on dry, shaded rock. *Site 9: 7008, on moist (irrigated) soil under *Populus deltoides* Rydb. Site 10: 7045, on moist soil in drainage ditch. *Site 12: 7129, on dry, concrete sidewalk (periodically irrigated). *Site 17: 7209, on moist (irrigated) soil on north side of building.

B. argenteum Hedw.

*Site 1: 7096, on dry soil on north side of building. *Site 2: 7212, on dry, shaded soil near foundation of building. *Site 3: 7275, on moist (irrigated) soil on north side of building. *Site 4: 7325, on moist concrete by water fountain. *Site 5: 7064, on moist, shaded soil by water pump. *Site 7: 7114, north side of building on concrete wall; moist due to seepage. *Site 9: 7007, on moist (irrigated) soil under *Populus deltoides*. *Site 11: 7222, on moist (irrigated) soil under *Picea* sp. *Site 12: 7117, on dry, concrete sidewalk (periodically irrigated). *Site 13: 7141, on moist (irrigated) soil on north side of building. Site 17: 7208, on moist (irrigated) soil on north side of building.

B. caespiticium Hedw.

*Site 1: 7113, on moist (irrigated) soil on east side of concrete wall.

B. pseudotriquetrum (Hedw.) Gaertn., Meyer, and Scherb.

*Site 3: 7309, on moist soil by edge of creek. *Site 14: 7141, on moist (irrigated) soil under picnic table.

Desmatodon heimii (Hedw.) Mitt.

Banner County (Koch, 1971). This taxon was reported as *Pottia heimii* (Hedw.) Fuernr. ex Hampe.

D. obtusifolius (Schwaegr.) Schimp.

*Site 1: 7092, on moist (irrigated) soil on north side of

building. *Site 3: 7307, on moist, shaded soil at edge of creek.

Dicranella varia (Hedw.) Schimp.

*Site 1: 7095, on moist (irrigated) soil on north side of building.

Didymodon tophaceus (Brid.) Lisa

Keith County (Koch, 1971).

Eurhynchium pulchellum (Hedw.) Jenn.

Scotts Bluff County (Churchill, 1979).

Grimmia apocarpa Hedw.

*Site 1: 7107, east side of concrete wall; dry. *Site 6: 7075, on dry, shaded rock.

G. rauii Aust.

Keith County (Churchill, 1982b). This taxon was reported as *Jaffuelobryum rauii* (Aust.) Thér.

G. plagiopoda Hedw.

Site 6: 7078, on dry, shaded rock. Churchill (1979) reported a collection from north of Ogallala at Lake McConaughy. Site 15: 7194, in dry, sheltered rock crevices. Churchill (1979) reported collections from the Wildcat Hills and from Keith and Kimball counties.

Hypnum vaucheri Lesq.

Garden and Keith counties (Churchill, 1977). This taxon was originally reported as *H. cupressiforme* Hedw.

Leptodictyum riparium (Hedw.) Warnst.

*Site 1: 7093, on moist (irrigated) soil on north side of building. *Site 3: 7296, on moist (irrigated) soil on north side of building.

Mnium punctatum Hedw.

Garden County (Koch, 1975).

Orthotrichum diaphanum Brid.

Scotts Bluff County (Churchill, 1982a).

O. pumilum Sw.

Banner County (Churchill, 1977).

Physcomitrium pyriforme (Hedw.) Hampe

*Site 3: 7313, on moist (irrigated) soil on north side of building.

Pohlia nutans (Hedw.) Lindb.

*Site 3: 7318, on moist (irrigated) soil on north side of building.

Pseudoleskeella tectorum (Funck ex Brid.) Kindb. ex. Broth.
Scotts Bluff County (Churchill, 1982a).

Pterygoneurum ovatum (Hedw.) Dix.

Keith County (Koch, 1971).

P. subsessile (Brid.) Jur.

Keith County (Koch, 1971).

Tortula mucronifolia Schwaegr.

*Site 1: 7112, east side of concrete wall; dry. *Site 4: 7323, on moist, shaded concrete by water fountain.

T. muralis Hedw.

Cheyenne County (Koch, 1975).

T. ruralis (Hedw.) Gaertn., Meyer, and Scherb.

*Site 6: 7070, on dry, shaded rock. *Site 13: 7140, on moist (irrigated) soil on north side of building. Churchill (1979) reported collections from Keith and Kimball counties.

Hepaticae

Marchantia polymorpha L.

Garden and Keith counties (Churchill and Redfearn, 1977).

Riccia cavernosa Hoffm.

Kimball County (Churchill and Redfearn, 1977). This taxon was reported as *R. crystallina* L.

R. frostii Aust.

Keith and Kimball counties (Churchill and Redfearn, 1977).

SUMMARY

Several habitats were investigated in ten counties of the southern Panhandle of Nebraska: river, stream, and lake banks; sheltered, wooded areas; city parks; and sheltered outcrops of rock. *Bryum argenteum*, a cosmopolitan moss, was found most frequently at almost all sites. *Barbula fallax*, *B. unguiculata*, and *Bryum algovicum* were often found in dryer habitats. *Amblystegium serpens*, *A. varium*, *Brachythecium salebrosum*, and *Leptodictyum riparium* were found only in the wettest habitats. *Grimmia apocarpa* and *G. plagiopoda* were found on rocks or concrete. No corticolous taxon was found during this study.

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REFERENCES

- Churchill, S. P. 1977. Contributions toward a moss flora of Nebraska II. *Bryologist*, 80:160-162.
- _____. 1979. Mosses of the Great Plains III. Additions to Nebraska and the Black Hills of South Dakota and Wyoming. *Bryologist*, 82:72-75.
- _____. 1982a. Mosses of the Great Plains VIII. Additions. *Bryologist*, 85:218-221.
- _____. 1982b. Mosses of the Great Plains VI. The Niobrara River Basin of Nebraska. *Transactions of the Kansas Academy of Sciences*, 85:1-12.
- _____, and P. L. Redfearn, Jr. 1977. The Hepaticae and Anthocerotae of Nebraska. *Bryologist*, 80:604-645.
- Crum, H. A., W. C. Steere, and L. E. Anderson. 1973. A new list of mosses of North America, north of Mexico. *Bryologist*, 76:85-130.
- Keech, C. F., and R. Bentall. 1971. Dunes on the plains: the Sand Hills region of Nebraska. *Resource Report of the Conservation and Survey Division, University of Nebraska*, 4:1-18.
- Koch, R. G. 1971. Pottiaceae in Nebraska. *Bryologist*, 74:206-207.
- _____. 1975. Notes on Nebraska mosses. *Bryologist*, 78:85.
- Stotler, R., and B. Crandall-Stotler. 1977. A checklist of the liverworts and hornworts of North America. *Bryologist*, 80:405-428.