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A BRYOLOGICAL SURVEY
OF SOUTHWESTERN NEBRASKA

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During the summer of 1982, moss collections made in Chase, Dundy, Frontier, Furnas, Gosper, Hayes, Hitchcock, Hooker, Lincoln, Logan, McPherson, Perkins, and Red Willow counties of Nebraska comprised 21 species. These reports bring the number of moss species known from southwestern Nebraska to 27 in addition to 5 liverwort species.

† † †

INTRODUCTION

Moss collections were made in Chase, Dundy, Frontier, Furnas, Gosper, Hayes, Hitchcock, Hooker, Lincoln, Logan, McPherson, Perkins, and Red Willow counties of southwestern Nebraska during the summer of 1982. Previous reports of bryophytes from Chase, Dundy, Frontier, Furnas, Gosper, Hayes, Hitchcock, Hooker, Lincoln, and Red Willow counties were made by Webber (1890), Koch (1971 and 1975), Churchill (1977, 1979, and 1982), and Churchill and Redfearn (1977), but no report is known from Logan, McPherson, or Perkins counties.

Chase, Dundy, Frontier, Furnas, Gosper, Hayes, Hitchcock, Hooker, Lincoln, Logan, McPherson, Perkins, and Red Willow counties are located in the southwestern region of Nebraska. Hooker, Logan, and McPherson counties are located in the Sand Hills. All other counties in this study are located south of the Sand Hills. Soils in Dundy, Chase, Hayes, Hooker, northern Lincoln, Logan, McPherson, and Perkins counties are sandy: Valentine, Valentine-Dunday, and Valentine-Anselmo. Soils in Frontier, Furnas, Gosper, southern Lincoln, and Red Willow counties are primarily silty (loess): Holdrege-Keith, Holdrege-Uly, Uly-Coly-Holdrege, and Holdrege-Hall. The soil of Hitchcock County is primarily composed of silt: Keith-Goshen and Colby Association. All of the counties included in this study have hills and rolling areas with canyons and narrow divides. The major rivers in southwestern Nebraska are the Platte, North Platte, and South Platte which flow through Lincoln County; the Dismal which flows through Hooker County; the Republican which flows through Dundy, Furnas, Hitchcock, and Red Willow counties; and the South Loup which flows through Logan County. Smaller streams such as Bridgwood Creek which flows through McPherson County; Medicine, Red Willow, and Plum creeks which traverse Frontier, Lincoln, and Red Willow counties; Beaver Creek in Furnas County; and the Frenchman River in Hitchcock County are also found. Sand Hills lakes occur in Hooker, Logan, and McPherson counties and Johnson Lake occurs in Gosper County. The annual precipitation is approximately 51.0 cm with low relative humidity. Deciduous trees are found along the river systems with mid-grasses comprising the native vegetation.

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

Twenty-one species of mosses were collected and represent additions for the known Nebraska bryophyte flora. All collections have been identified, catalogued, and placed in the Kearney State College collections. Collection numbers for voucher specimens, unless otherwise indicated, are those of the author. 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. Chase County: Imperial City Park.
2. Dundy County: Benkelman City Park.
3. Frontier County: Maywood City Park.
5. Furnas County: Cambridge City Park.
6. Furnas County: Tributary of Republican River near Cambridge.
7. Gosper County: Elwood city streets.
8. Gosper County: Johnson Lake State Recreation Area.
9. Gosper County: 1.6 km N of Elwood.
10. Gosper County: 2.0 km N of Elwood.
11. Hayes County: Hayes Center city streets.
12. Hitchcock County: Culbertson City Park.
13. Hitchcock County: Palisade City Park.
15. Hooker County: Hooker County Library.
16. Lincoln County: Brady City Park.
17. Lincoln County: Cody Park, North Platte.
18. Lincoln County: Fort McPherson National Cemetery.
19. Lincoln County: Maxwell City Park.
20. Lincoln County: Memorial Park, North Platte.
22. Logan County: Stapleton city streets.
23. McPherson County: McPherson County Courthouse, Tryon.
24. Perkins County: Elsie City Park.
25. Perkins County: Grant City Park.
26. Red Willow County: McCook City Park.
27. Red Willow County: Norris City Park, McCook.

**Musci**

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

A. varium (Hedw.) Lindb.  
On soil of N-facing bank of roadside ditch: *Site 9, Williams 302a. On soil at base of concrete structure (periodically irrigated): *Site 25, 2467.

Barbula acuta (Brid.) Brid.  
Hitchcock County (Koch, 1975).

B. fallax Hedw.  
In rock crevice: *Site 1, 2497. On moist concrete (periodically irrigated): *Site 25, 2462. Koch (1971) reported a collection from Hayes County.

B. unguiculata Hedw.  

Brachythecium collinum (Schleich. ex C. Mull.) B.S.G.  

Bryum algoviculum Sendtn. ex C. Mull.  

B. argenteum Hedw.  

B. capillare Hedw.  
On moist soil (periodically irrigated): *Site 17, 2421.

Desmatodon obtusifolius (Schwaegr.) Schimp.  
On moist soil (periodically irrigated): *Site 4, 2683. N side of building on dry, shaded concrete: *Site 7, 2695. On dry soil in partial shade: *Site 14, 2683. Moist soil...

Eucalypta ciliata Hedw.
On moist soil (periodically irrigated): *Site 1, 2505. On dry, shaded rock wall: *Site 2, 2657. On soil at base of Celtis occidentalis: *Site 18, 2353.

Earlychnium pulchellum (Hedw.) Jenn. Lincoln County (Churchill, 1979).

Funaria hygrometrica Hedw.
On soil of roadside ditch near stream: *Site 10, Williams 304.

Grimmia laevigata (Brid.) Brid.
In dry, shaded rock crevice: *Site 1, 2496; *Site 2, 2662. On dry, shaded rock wall: *Site 2, 2662. On moist concrete (periodically irrigated): *Site 24, 2452; Site 25, 2454.

G. rauii Aust.
Frontier and Hitchcock counties (Churchill, 1982). This taxon was reported as Jaffuelobryum rauii (Aust.) Thér.

G. wrightii (Sull.) Aust.
Hitchcock County (Webber, 1890).

Leptodictyum riparium (Hedw.) Warnst.
Knothol of Acer saccharinum: *Site 15, 2327.
L. trichopodium (Schultz) Warnst.

Leskea gracilescens Hedw.
On bark at base of Celtis occidentalis: *Site 10, Williams 304.

Marchantia polymorpha L.
Frontier County (Churchill and Redfearn, 1977).

Moerkia hibernica (Hook.) Gott.
Dundy County (Churchill and Redfearn, 1977).

Riccia fluitans L.
Chase County (Churchill and Redfearn, 1977).

R. frostii Aust.

Riccioecarpus natans (L.) Corda
Lincoln County (Churchill and Redfearn, 1977).

SUMMARY

River, stream, and lake banks; sheltered wooded areas; city parks; and sheltered rock outcrop habitats were investigated in 13 counties of southwestern Nebraska. The majority of the collections occurred in areas associated with human disturbance and may or may not be a true reflection of the natural moss flora. Bryum argenteum, a cosmopolitan moss, was found most frequently in almost all collection sites. Bar­bula unguiculata and Bryum algovicum were often found in the dryer habitats. Grimmia laevigata was found on rock or concrete substrates. Orthotrichum pumi­num was the most commonly collected corticolous taxon with Pylaisiella selwynii and Leskea gracilescens occurring less frequently on tree bark. Eucalypta ciliata, primarily a western taxon, was found on soil and tree bark substrates in a few locations. No liverwort was found during this study.

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REFERENCES


