

## THE FLORA OF THE BADLANDS NATIONAL MONUMENT OF SOUTH DAKOTA

Lester Lindstrom  
State University of South Dakota, Vermillion

During the growing seasons of 1956 and 1957 a survey was made to determine what native and adventive vascular plants grow spontaneously in the Badlands National Monument. This well-known area lies in eastern Pennington county and western Jackson county, South Dakota.

The vegetation of this area is best described as mixed prairie with major dominants of *Stipa comata*, *Sporobolus cryptandrus*, and *Bouteloua gracilis* (Weaver and Clements, 1938). In many places in the Badlands local topographic conditions are constantly changing due to erosional activity. Weedy species dominate in this type of habitat. A few wooded ravines and prairie swales are present in the area as well as some man-made stock dams. These small but distinctive communities possess plants which are noteworthy exceptions to the more semi-arid types of plants which occur on the dry prairie or in eroded areas.

A total of 533 collections were made representing 306 different species. Available appropriate literature was utilized in the identification and in the delimitation of species. The authority followed in nomenclature is Gleason's "New Britton and Brown Illustrated Flora" (1952). "The Manual of the Plants of Colorado" (Harrington, 1954), and "The Flora of the Prairies and Plains of Central North America" (Rydberg, 1932) were used for western forms collected which are not found in Gleason (1952). The nomenclature in "The Manual of the Grasses of the United States" (Hitchcock, 1950) was followed for the grasses. "The Flora of South Dakota" (Over, 1932) was the basic check list used for the area. In problems of relationship involved in classification, reference was made to "The Taxonomy of Vascular Plants" (Lawrence, 1951).

During this study a plant was collected which is apparently new for the state. *Lepidium perfoliatum*, L. a member of the family Cruciferae (Brassicaceae), is naturalized from Europe and inhabits waste places, embankments, and roadsides. It was collected in disturbed soil in the town of Scenic, South Dakota.

Following is a check list of the species with familial circumscription arranged according to Rydberg (1932). In each family the genera and species are arranged alphabetically.

## Class—GYMNOSPERMAE

## Family PINACEAE

*Pinus ponderosa* Dougl.

## Family JUNIPERACEAE

*Juniperus virginiana* L.*Juniperus scopulorum* Sargent.

## Class—ANGIOSPERMAE

## Family TYPHACEAE

*Typha latifolia* L.

## Family ALISMACEAE

*Alisma plantago-aquatica* L.*Echinodorus cordifolius* (L.) Griseb.*Sagittaria cuneata* Sheldon.

## Family POACEAE

*Agropyron cristatum* (L.) Gaertn.*Agropyron repens* (L.) Beauv.*Agropyron smithii* Rydb.*Agropyron trachycaulum* (Link.) Malte*Andropogon gerardi* Vitm.*Andropogon hallii* Hack.*Andropogon scoparius* Michx.*Aristida longiseta* Steud.*Bouteloua curtipendula* (Michx.) Torr.*Bouteloua gracilis* (H.B.K.) Lag.*Bromus inermis* Leyss.*Bromus japonicus* Thurb.*Bromus squarrosus* L.*Bromus tectorum* L.*Buchloe dactyloides* (Nutt.) Engelm.*Calamovilfa longifolia* (Hook) Scribn.*Cenchrus pauciflorus* Benth.*Echinochloa crusgalli* (L.) Beauv.*Elymus canadensis* L.*Elymus virginicus* L.*Eragrostis cilianensis* (All.) Link.*Festuca octoflora* Walt.*Hordeum jubatum* L.*Koeleria cristata* L. Pers.*Muhlenbergia cuspidata* (Torr.) Rydb.*Muhlenbergia racemosa* (Michx.) B.S.P.*Oryzopsis hymenoides* (R. & S.) Ricker*Oryzopsis micrantha* (Trin. & Rupr.) Thurb.*Panicum capillare* L.*Panicum virgatum* L.*Phleum pratense* L.*Phragmites communis* Trin.*Poa palustris* L.*Schedonnardus paniculatus* (Nutt.) Trelease*Setaria lutescens* (Weigel) Hubb.*Setaria viridis* (L.) Beauv.*Sitanion hystrix* (Nutt.) J. G. Smith*Spartina pectinata* Bosc.*Sporobolus asper* (Michx.) Kunth.*Sporobolus cryptandrus* (Torr.) A. Gray*Stipa comata* Trin. & Rupr.*Stipa viridula* Trin.

## Family CYPERACEAE

*Carex brevior* (Dewey) Mackenzie*Carex filifolia* Nutt.*Carex praegracilis* W. Boot.*Carex gravida* Bailey*Cyperus acuminatus* Torr. & Hook.*Eleocharis acicularis* (L.) R. & S.*Eleocharis palustris* (L.) R. & S.*Scirpus atrovirens* Willd.

## Family COMMELINACEAE

*Tradescantia bracteata* Small.*Tradescantia virginiana* L.

## Family MELANTHIACEAE

*Zygadenus gramineus* Rydb.

## Family JUNCACEAE

*Juncus balticus* Willd.*Juncus effusus* L.

## Family ALLIACEAE

*Allium nuttallii* S. Wats.

## Family LILIACEAE

*Fritillaria atropurpurea* Nutt.*Leucocrinum montanum* Nutt.

## Family CONVALLARIACEAE

*Smilacina stellata* (L.) Desf.

## Family DRACAENACEAE

*Yucca glauca* Nutt.

## Family CALOCHORTACEAE

- Calochortus gunnisonii* S. Wats.  
*Calochortus nuttallii* Torr. & Gray

## Family SMILACACEAE

- Smilax herbacea* L.

## Family IRIDACEAE

- Sisyrinchium angustifolium* Mill.

## Family SALICACEAE

- Populus sargentii* Dode.  
*Salix amygdaloides* Anders.  
*Salix interior* Rowlee.  
*Salix lutea* Nutt.

## Family ULMACEAE

- Celtis occidentalis* L.  
*Ulmus americana* L.  
*Ulmus rubra* Muhl.

## Family POLYGONACEAE

- Eriogonum annuum* Nutt.  
*Eriogonum flavum* Nutt.  
*Eriogonum gordonii* Benth.  
*Eriogonum multiceps* Nees.  
*Polygonum aviculare* L.  
*Polygonum coccineum* Muhl.  
*Polygonum convolvulus* L.  
*Polygonum exsertum* Small  
*Polygonum ramosissimum* Michx.  
*Rumex altissimus* Wood  
*Rumex occidentalis* S. Wats.

## Family CHENOPODIACEAE

- Atriplex argentea* Nutt.  
*Atriplex canescens* (Pursh) Nutt.  
*Chenopodium album* L.  
*Chenopodium hybridum* L.  
*Kochia scoparia* (L.) Schrad.  
*Salsola kali* L.  
*Sarcobatus vermiculatus* (Hook) Torr.

## Family AMARANTHACEAE

- Amaranthus blitoides* S. Wats.  
*Amaranthus graecizans* L.

## Family NYCTAGINACEAE

- Allionia bracteata* Rydb.  
*Allionia linearis* Pursh.

## Family PORTULACACEAE

- Portulaca oleracea* L.

## Family ALSINACEAE

- Stellaria media* (L.) Cyril.

## Family RANUNCULACEAE

- Clematis ligusticifolia* Nutt.  
*Delphinium virescens* Nutt.

## Family PAPAVERACEAE

- Argemone intermedia* Sweet

## Family BRASSICACEAE

- Arabis hirsuta* (L.) Scop.  
*Brassica nigra* (L.) Koch.  
*Camelina microcarpa* Andrz.  
*Descurainia pinnata* (Walt.) Britt.  
*Descurainia sophia* (L.) Webb.  
*Draba reptans* (Lam.) Fern.  
*Erysimum asperum* (Nutt.) DC.  
*Lepidium densiflorum* Schrad.  
*Lepidium perfoliatum* L.  
*Lesquerella arenosa* (Richardson) Rydb.  
*Lesquerella ludoviciana* (Nutt.) S. Wats.  
*Rorippa sinuata* (Nutt.) Hitchc  
*Sisymbrium altissimum* L.  
*Thlaspi arvense* L.

## Family CAPPARIDACEAE

- Cleome serrulata* L.  
*Polanisia graveolens* Raf.

## Family GROSSULARIACEAE

- Ribes cereum* Dougl.  
*Ribes odoratum* Wendl.

## Family ROSACEAE

- Potentilla hippiana* Lehm.  
*Potentilla pennsylvanica* L.  
*Rosa blanda* Ait.  
*Rosa fendleri* Crep.  
*Rosa suffulta* Greene

## Family MALACEAE

- Crataegus succulenta* Link.

## Family AMYGLALACEAE

- Prunus americana* Marsh.  
*Prunus pumila* L.  
*Prunus virginiana* L.

## Family FABACEAE

- Amorpha canescens* Pursh.  
*Astragalus agrestis* Dougl.  
*Astragalus canadensis* L.  
*Astragalus hyalinus* Jones  
*Astragalus mollissimus* Torr.  
*Astragalus pachystachys* Rydb.  
*Astragalus parviflora* Pursh.  
*Astragalus plattensis* Nutt.  
*Astragalus purshii* Dougl.  
*Astragalus striatus* Nutt.  
*Astragalus tenellus* Pursh.  
*Dalea aurea* Nutt.  
*Dalea enneandra* Nutt.  
*Glycyrrhiza lepidota* Pursh.  
*Lupinus pusillus* Pursh.  
*Medicago falcata* L.  
*Medicago sativa* L.  
*Melilotus alba* Desv.  
*Melilotus officinalis* (L.) Desr.  
*Oxytropis campestris* (L.) DC.  
*Oxytropis lambertii* Pursh.  
*Oxytropis sericea* Nutt.  
*Petalostemon candidus* (Willd.) Michx.  
*Petalostemon purpureus* (Vent.) Rydb.  
*Psoralea argophylla* Pursh.  
*Psoralea cuspidata* Pursh.  
*Psoralea esculenta* Pursh.  
*Psoralea lanceolata* Pursh.  
*Psoralea tenuiflora* Pursh.  
*Thermopsis rhombifolia* (Nutt.) Richards  
*Trifolium pratense* L.  
*Vicia americana* Muhl.

## Family GERANIACEAE

- Geranium bicknellii* Britton

## Family OXALIDACEAE

- Oxalis stricta* L.

## Family LINACEAE

- Linum rigidum* Pursh.

## Family POLYGALACEAE

- Polygala alba* Nutt.

## Family EUPHORBIACEAE

- Euphorbia albicaulis* (B.) Rydb.  
*Euphorbia marginata* Pursh.  
*Euphorbia robusta* (Engelm) Rydb.  
*Euphorbia stictospora* Engelm.

## Family CELASTRACEAE

- Celastrus scandens* L.

## Family ANACARDIACEAE

- Rhus radicans* L.  
*Rhus trilobata* Nutt.

## Family ACERACEAE

- Acer negundo* L.

## Family VITACEAE

- Vitis vulpina* L.

## Family MALVACEAE

- Malva rotundifolia* L.  
*Sphaeralcea coccinea* (Pursh) Rydb.

## Family VIOLACEAE

- Viola nuttallii* Pursh.

## Family LOASACEAE

- Mentzelia decapetala* (Pursh) Urban & Gilg.  
*Mentzelia nuda* (Pursh) Greene

## Family CACTACEAE

- Neomamillaria missouriensis* (Sweet) Britton & Rose  
*Opuntia polyacantha* Haw.

## Family ELAEGNACEAE

- Shepherdia argentea* Nutt.

## Family LYTHRACEAE

- Ammannia coccinea* Rottb.

## Family ONAGRACEAE

- Gaura coccinea* Pursh.  
*Gaura parvifolia* Dougl.  
*Oenothera albicaulis* Pursh.  
*Oenothera caespitosus* ex. Fraser  
*Oenothera nuttallii* Sweet  
*Oenothera serrulata* (Nutt.) Walp.

## Family AMMIACEAE

- Cymopterus acaulis* (Pursh) Raf.  
*Cymopterus montanus* T. & G.  
*Locmatium foeniculaceum* (Nutt.) Coult. & Rose  
*Musineon divaricatum* (Pursh) Nutt.

## Family PRIMULACEAE

- Androsace occidentalis* Pursh.

## Family OLEACEAE

- Fraxinus pennsylvanica* Marsh.

## Family APOCYNACEAE

- Apocynum sibiricum* Jacq.

## Family ASCLEPIADACEAE

- Acerates angustifolia* (Nutt.) Dec.  
*Acerates viridiflora* (Raf.) Eaton  
*Aclepias latifolia* (Torr.) Raf.  
*Asclepias pumila* (A. Gray) Vail  
*Asclepias speciosa* Torr.  
*Asclepias verticillata* L.

## Family CONVULVACEAE

- Convolvulus arvensis* L.  
*Evolvulus pilosus* Nutt.  
*Ipomoea leptophylla* Torr.

## Family POLEMONIACEAE

- Collomia linearis* Nutt.  
*Filia congesta* Hook.  
*Phlox hoodii* Richardson

## Family HYDROPHYLLACEAE

- Ellisia nyctelea* L.

## Family BORAGINACEAE

- Cryptantha affinis* Greene  
*Cryptantha thrysiflora* (Greene) Payson  
*Hackelia floribunda* (Lehm) Johnst.  
*Lappula echinata* Gilib.  
*Lappula redowskii* (Hornem) Greene  
*Lithospermum incisum* Lehm.  
*Mertensia lanceolata* (Pursh) A. DC.  
*Mertensia oblongifolia* (Nutt.) G. Don

## Family VERBENACEAE

- Verbena ambrosifolia* Rydb.  
*Verbena bracteata* Lag. & Rodr.  
*Verbena stricta* Vent.

## Family LAMIACEAE

- Hedeoma hispida* Pursh.  
*Hedeoma pulegioides* (L.) Pers.  
*Mentha arvensis* L.  
*Monarda fistulosa* L.  
*Nepeta cataria* L.  
*Salvia reflexa* Horenem

## Family SOLANACEAE

- Hyoscyamus niger* L.  
*Physalis heterophylla* Nees.  
*Physalis lanceolata* Michx.  
*Solanum nigrum* L.  
*Solanum rostratum* Dunal.

## Family SCROPHULARIACEAE

- Castilleja sessiliflora* Pursh.  
*Gerardia aspera* Dougl.  
*Orthocarpus luteus* Nutt.  
*Penstemon albidus* Nutt.  
*Penstemon cleburni* A. Nels.  
*Penstemon eriantherus* Pursh.  
*Penstemon glaber* Pursh.  
*Penstemon grandiflorus* Nutt.  
*Veronica arvensis* L.

## Family OROBANCHACEAE

- Orobanche fasciculata* Nutt.  
*Orobanche uniflora* L.

## Family MARTYNIACEAE

- Proboscidea louisiana* (Mill) Woot & Standl.

## Family PLANTAGINACEAE

- Plantago spinulosa* Decne

## Family RUBIACEAE

- Galium aparine* L.

## Family CAPRIFOLIACEAE

- Symphoricarpos occidentalis* Hook.  
*Symphoricarpos orbiculatus* Moench

## Family SANTALACEAE

- Comandra pallida* A. DC.

## Family CAMPANULACEAE

- Specularia leptocarpa* (Nutt.) Gray

## Family AMBROSIACEAE

- Ambrosia artemisiaefolia* A. Gray

*Ambrosia trifida* L.  
*Iva axillaris* Pursh.  
*Iva xanthifolia* Nutt.  
*Xanthium commune* Britton

## Family CARDUACEAE

*Achillea lanulosa* Nutt.  
*Actinea acaulis* (Pursh.) Sprang  
*Arctium lappa* L.  
*Artemisia biennis* Willd.  
*Artemisia cana* Pursh.  
*Artemisia dracunculoides* L.  
*Artemisia filifolia* Torr.  
*Artemisia fridida* Willd.  
*Artemisia ludoviciana* Nutt.  
*Aster canescens* Pursh.  
*Aster ericoides* L.  
*Aster oblongifolius* Nutt.  
*Bidens cernua* L.  
*Chrysopsis villosa* (Pursh.) Nutt.  
*Chrysothamnus nauseosus* (Pallas.) Britt.  
*Cirsium vulgare* (Savi) Airy-Shaw  
*Conyza canadensis* (L.) Cron.  
*Dyssodia papposa* (Vent.) Hitch.  
*Echinacea angustifolia* DC.  
*Erigeron canus* A. Gray  
*Erigeron strigosus* Muhl.  
*Filago prolifera* Britt.  
*Grindelia squarrosa* (Pursh.) Dunal.  
*Gutierrezia sarothrae* (Pursh.) Britton & Rusby  
*Haplopappus spinulosus* (Pursh.) DC.  
*Helianthus annuus* L.  
*Helianthus petiolaris* Nutt.  
*Hymenopappus filifolius* Hook.  
*Hymenopappus tenuifolius* Pursh.  
*Kuhnia eupatorioides* A. Nels.  
*Liatris punctata* Hook.  
*Ratibida columnifera* (Nutt.) Woot. & Standl.  
*Senecio integerrimus* Nutt.  
*Senecio plattensis* Nutt.  
*Solidago canadensis* L.  
*Solidago dumetorum* Linell  
*Solidago glaberrima* Martens  
*Solidago missouriensis* Nutt.  
*Solidago mollis* Bartl.  
*Solidago rigida* L.  
*Solidago sparsiflora* Gray

## Family CICHORIACEAE

*Lactuca ludoviciana* (Nutt.) DC.  
*Lactuca pulchella* (Pursh.) DC.  
*Lygodesmia juncea* (Pursh.) D. Doon  
*Taraxacum officinale* Weber  
*Tragopogon pratensis* L.