

1921

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Recommended Citation

Cratty, R. I. (1921) "Dr. Rudolph Gmelin and His Collection of Minnesota, Wisconsin and Iowa Plants," *Proceedings of the Iowa Academy of Science*, 28(1), 247-255.

Available at: <https://scholarworks.uni.edu/pias/vol28/iss1/41>

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DR. RUDOLPH GMELIN AND HIS COLLECTION OF MINNESOTA, WISCONSIN AND IOWA PLANTS

R. I. CRATTY

Through the kindness of Mr. Henry C. Gmelin of Elkader, Iowa, a collection of dried plants numbering two hundred and sixty-nine species which were collected by his father, Dr. Rudolph Gmelin, in southeastern Minnesota, western Wisconsin and north-eastern Iowa, between the years 1874 and 1894, were presented to the Iowa State College. It fell to the lot of the writer to arrange and mount the collection, and because of the prominence of the collector and the unusual care taken in preparing and preserving the specimens, it has been thought proper to place on record a short biographical sketch of Dr. Gmelin and append a list of the plants.

When, as in the present case, such painstaking care is shown in pressing the plants, straightening out the leaves, selecting good typical specimens and so forth, it is truly a labor of love to identify, mount and distribute in the herbarium, instead of a vexation of spirit as is sometimes the case. Not many of the plants had been named, except those possessing medicinal value, in which he as a practicing physician was more especially interested, as he compounded many of his medicines himself, from barks and roots.

Through the courtesy of his son, Henry C. Gmelin of Elkader, in sending to Dr. Pammel some notes regarding his father's life, the writer is enabled to present this brief biographical sketch.

Dr. Rudolph Gmelin, born at Darmsheim, Wurtemberg, Germany, October 30, 1831, was the son of Rev. Heinrich Gmelin and Christina Louise (Pfeiderer) Gmelin. He graduated from the University of Tuebingen in medicine and surgery April 19, 1854, after which he studied in the Royal Medical College of Wurtemberg, and then went to Vienna, Munich and Prague, spending a year at each place studying and practicing in the hospitals. Several years following were devoted to the practice of his profession in Europe, a part of the time with the German army as he was a volunteer surgeon during the Franco-Prussian

war. He was married August 16, 1872 to Miss Sophia Alt, and came to America, October 29, 1873.

The first seven years after coming to this country were spent in practicing his profession at Chicago, Milwaukee, St. Paul, St. Cloud, Minnesota, Lincoln, Nebraska, and Guttenberg, Iowa. He went to Elkader, Iowa, in 1879, and remained there about six months; then for some time he lived in Fountain City and La Crosse, Wisconsin, and Garnavillo, Iowa. In January, 1888, he returned to Elkader where he practiced till his death, August 3, 1909.

Dr. Gmelin became an American citizen in 1884, receiving his naturalization papers in Sterns County, Minnesota, September of that year. To him and his wife, who is still living, and is spending her declining years with her youngest son in Elkader, were born three sons: Robert, who died at the age of eight; Max, born at St. Cloud, Minnesota, in 1875 and now located at Clinton, Iowa, where he teaches music in Wartburg College; and Henry C., born at Guttenberg, Iowa, in 1877, and now in the job-printing business in Elkader.

The following appreciation of Dr. Gmelin is from the columns of the *Register and Argus*: "Dr. Gmelin was of a high type as to mind and character, always a student, he was a lover of nature, of science, of literature and of music. The flowers were his friends; he loved them and he knew every wild flower of the woods and fields and what healing or poisonous property it had. During his later years chess became the recreation of his active mind, the complex problems of that game affording him keen enjoyment.

In religion Dr. Gmelin was a Protestant. He was of a retiring disposition, and instead of the noise and bustle of the streets, preferred that close communion with nature in forest and field and garden, which occupied much of his time when he was not busy in his profession. He loved gardening very much, and by judicious planting, provided his family with an abundance of fresh vegetables throughout the growing season."

The name Gmelin is a celebrated one in the annals of German science, several generations of the family having been prominent in botany, chemistry, medicine and theology. A large number of them devoted their lives to botany, either as collectors, teachers or in research work. Among these may be mentioned George John Gmelin who studied and collected Siberian plants from 1733-1743 upon which is based his *Flora Siberica*, published in 1747-

69; Philip Frederick Gmelin (1721-1768) published numerous works as did John Frederick Gmelin (1748-1804) who was a noted professor at Tuebingen and Goettingen. Ferdinand Gotlob Gmelin (1782-1848) was a professor at Tuebingen and the author of *De Plantarum Exhalationibus*. Carl Christian Gmelin, physician to Carlsruh, published a work on ferns in 1784. Christian Gotlob Gmelin (1792-1860) was a chemist and botanist at Tuebingen. Samuel Gottlieb Gmelin traveled and made extensive collections of plants in south Russia and the Caspian Sea region. P. Gmelin published in 1867 a systematic work reviewing the system of Jussieu, De Candolle and Eudlicher. W. Gmelin of Stuttgart was also well known as a botanical collector, several specimens of his collection being in the writer's herbarium. The Linnaean genus *Gmelina*, a verbenaceous genus of some eight species of southeastern Asia, Malay Archipelago and tropical Australia commemorates the name, while *Lithospermum Gmelini* (Michx.) Hitch., which is now the accepted name of the *L. hirtum* of Lehmann, a common Iowa plant, commemorates the work of an early collector in this country. Dr. Gmelin's collections in the three states previously mentioned were made as follows: St. Cloud, Minnesota, 1874-5; St. Paul, 1875; Guttenberg, Iowa, 1876-7; Fountain City, Wisconsin, 1880-1; LaCrosse, Wisconsin, 1882; Elkader, Iowa, 1880-94.

In the following list the synonymy used is that of Gray's Manual, 7th edition.

FILICES

- Adiantum pedatum* L. St. Paul, Minnesota.
Camptosorus rhizophyllus Link. Elkader, and Guttenberg, Iowa.
Onoclea sensibilis L. St. Paul.
Botrichium virginianum (L) Sw. St. Paul.

PINACEAE

- Juniperus virginiana* L. St. Cloud, Minnesota.

ALISMACEAE

- Sagittaria arifolia* Nutt. Elkader.

GRAMINEAE

- Echinochloa crus-galli* (L) Beauv. St. Cloud.
Sorghastrum nutans (L) Nash. St. Cloud.
Bouteloua curtipendula (Michx) Torr. St. Cloud.
Eragrostis megastachya (Koeler) Link. St. Cloud.
Elymus canadensis L. St. Cloud.

CYPÉACEAE

- Cyperus ferax* Richards. St. Cloud; Guttenberg, Iowa.
C. rivularis Kunth. Fountain City, Wisconsin.
Scirpus atrocinctus Fernald. St. Paul.
S. atrovirens Vahl. St. Paul.

Carex comosa Boett. St. Paul.
C. stipata Muhl. St. Paul.

ARACEAE

Arisaema triphyllum (L) Schott. St. Cloud; Guttenberg.
Symplocarpus foetidus (L) Nutt. Fountain City.

COMMELINACEAE

Tradescantia reflexa Raf. La Crosse.
T. bracteata Small. St. Paul.

LILIACEAE

Zygadenus chloranthus Richards. St. Cloud; La Crosse.
Uvularia grandifolia Smith. Guttenberg.
Oakesia sessilifolia (L) Wats. St. Cloud.
Allium stellatum Ker. St. Cloud.
Lilium philadelphicum L. var *andinum* (Mill) Ker. St. Cloud; La Crosse.
L. superbum L. St. Cloud; La Crosse.
Erythronium albidum Nutt. Elkader; Guttenberg.
Smilacina stellata (L) Desf. St. Cloud; St. Paul.
S. racemosa (L) Desf. St. Paul.
Maianthemum canadense Desf. St. Paul.
Streptopus roseus Michx. Two Rivers, Minnesota.
Trillium declinatum (Gray) Gleason. St. Cloud; Guttenberg.
T. nivale Riddell. Elkader.
Smilax ecirrhata (Eng.) Wats. St. Cloud.

AMARYLLIDACEAE

Hypoxis erecta L. St. Cloud; St. Paul.

IRIDACEAE

Iris versicolor L. St. Paul; Guttenberg.
Belamcanda chinensis (L) DC. St. Cloud.
Sisyrinchium angustifolium Mill. St. Paul; St. Cloud.

ORCHIDACEAE

Cypripedium candidum Muhl. St. Cloud.
C. parviflorum Salisb. St. Paul.
C. hirsutum Mill. St. Cloud; St. Paul.
Calopogon pulchellus (Sw) R. Br. St. Cloud; St. Paul.
Habenaria Hookeri Torr. St. Paul; Elkader.

SALICACEAE

Salix candida Flugge. St. Cloud.

BETULACEAE

Ostrya virginiana (Mill) K. Koch. St. Cloud.

FAGACEAE

Quercus macrocarpa Michx. St. Cloud.
Q. rubra L. St. Paul.
Q. velutina Lam. St. Paul.

URTICACEAE

Pilea pumila (L) Gray. La Crosse.

SANTALACEAE

Comandra umbellata Torr. St. Paul.

ARISTOLOCHIACEAE

Asarum canadense, L. St. Cloud.
A. canadense var. *acuminatum* Ashe. Guttenberg.

POLYGONACEAE

Polygonum lapathifolium L. St. Cloud.

NYCTAGINACEAE

Oxybaphus hirsutus (Pursh) Sweet. St. Cloud.

CARYOPHYLLACEAE

Arenaria lateriflora L. St. Paul.

PORTULACACEAE

Claytonia virginica L. Guttenberg.

RANUNCULACEAE

Ranunculus septentrionalis Poir. St. Cloud.

R. abortivus L. St. Cloud.

R. rhomboideus Goldie. St. Cloud; La Crosse.

R. pennsylvanicus L. St. Cloud.

Thalictrum dasycarpum Fisch. & Lall. St. Cloud; St. Paul.

T. dioicum L. St. Cloud.

Anemonella thalictroides (L.) Spach. Guttenberg.

Hepatica triloba Chaix. Guttenberg.

Anemone patens var. *Wolfgangiana* (Bess) Koch. Fountain City.

A. nemorosa L. St. Paul.

A. canadensis L. St. Paul.

A. virginiana L. St. Cloud.

Aquilegia canadensis L. St. Cloud.

Delphinium Penardi Huth. St. Paul.

Actaea rubra (Ait) Willd. Guttenberg.

BERBERIDACEAE

Podophyllum peltatum L. Guttenberg.

PAPAVERACEAE

Sanguinaria canadensis L. Guttenberg.

FUMARIACEAE

Dicentra cucullaria L. Guttenberg; Wahpeton, Iowa.

D. canadensis (Goldie) Walp. Elkader.

Corydalis micrantha Eng. St. Cloud.

CRUCIFERAE

Dentaria laciniata Muhl. Elkader.

Arabis lyrata L. Guttenberg.

A. Drummondii Gray. St. Paul.

A. laevigata (Muhl.) Poir. St. Cloud.

CAPPARIDACEAE

Polanisia trachysperma T. & G. St. Paul.

Heuchera hispida Pursh. St. Cloud.

Mitella diphylla L. St. Paul; Guttenberg.

Parnassia caroliniana Michx. Fountain City.

Ribes gracile, Michx. St. Cloud.

R. floridum L'Her. St. Cloud.

ROSACEAE

Physocarpus opulifolius (L.) Maxim. St. Cloud.

Spiraea salicifolia L. St. Cloud.

Amelanchier spicata Lam. St. Cloud.

Crataegus punctata Hook. St. Cloud.

Potentilla canadensis L. St. Paul.

P. monspeliensis L. St. Cloud.

P. argentea Pursh. St. Paul.

- P. anserina* L. St. Cloud.
P. palustris (L) Scop. St. Paul.
Geum strictum Ait. St. Cloud.
G. triflorum Pursh. St. Cloud.
Rubus alleghaniensis Porter. St. Paul.
Prunus virginiana L. St. Cloud.

LEGUMINOSAE

- Baptisia bracteata* Ell. Elkader.
B. leucantha T. & G. Fountain City.
Lupinus perennis L. St. Cloud.
Psoralea argophylla Pursh. St. Paul.
Amorpha canescens Nutt. St. Paul.
A. microphylla Pursh. St. Cloud.
Petalostemon candidum Michx. St. Paul.
P. purpurascens (Vent.) Ryd. St. Paul; St. Cloud.
Tephrosia virginiana (L) Pers. Fountain City.
Astragalus canadensis L. St. Paul.
Desmodium canadense L. St. Cloud.
D. illinoense Gray. St. Cloud.
D. grandiflorum (Walt) DC. St. Cloud.
D. Dillenii Darl. St. Cloud.
Vicia americana Muhl. St. Cloud.
Lathyrus venosus Muhl. St. Paul; St. Cloud.
Amphicarpa monoica (L) Ell. St. Cloud.

LINACEAE

- Linum sulcatum* Riddell. St. Cloud.

OXALIDACEAE

- Oxalis violacea* L. St. Cloud.
O. corniculata L. St. Paul.

GERANIACEAE

- Geranium maculatum* L. St. Cloud.

RUTACEAE

- Zanthoxylum americanum* Mill. St. Cloud.

POLYGALACEAE

- Polygala senega* L. St. Cloud; St. Paul.
P. sanguinea L. St. Cloud; Fountain City.

EUPHORBIACEAE

- Euphorbia corollata* L. St. Paul; La Crosse.
E. glyptosperma Eng. St. Cloud.

ANACARDIACEAE

- Rhus glabra* L. St. Paul.

BALSAMINACEAE

- Impatiens pallida* Nutt. St. Cloud.

RHAMNACEAE

- Ceanothus americanus* L. St. Paul; Guttenberg; La Crosse.

HYPERICACEAE

- Hypericum Ascyron* L. St. Cloud; La Crosse.
H. maculatum Walt. La Crosse.

VIOLACEAE

- Viola papilionacea* Pursh. St. Cloud.
V. pedatifida G. Don. St. Cloud.

LYTHRACEAE

Lythrum alatum L. St. Cloud.

ONAGRACEAE

Oenothera biennis L. St. Cloud.*Epilobium angustifolium* L. St. Cloud.*Circaea lutetiana* L. St. Cloud.

ARALIACEAE

Aralia nudicaulis L. St. Cloud; St. Paul.

UMBELLIFERAE

Sanicula gregaria Bicknell. St. Paul.*Osmorrhiza Claytoni* (Michx) Clarke. St. Paul.

CORNACEAE

Cornus paniculata L'Her. St. Cloud.*C. circinata* L'Her. St. Cloud.*C. alternifolia* L. fil. St. Cloud.

ERICACEAE

Vaccinium pennsylvanicum L. St. Cloud.*Gaylussacia baccata* (Wang) K. Koch. St. Paul.*Pyrola rotundifolia* L. St. Paul.*P. elliptica* Nutt. St. Paul.*Andromeda polifolia* L. St. Cloud.

PRIMULACEAE

Lysimachia terrestris (L) B.S.P. Fountain City.*L. quadrifolia* L. La Crosse.*Steironema ciliata* Raf. St. Paul; La Crosse.*S. lanceolatum* (Walt) Gray. Guttenberg.*Dodecatheon Meadia* L. Guttenberg.

GENTIANACEAE

Gentiana Andrewsii Griseb. St. Cloud; La Crosse.*G. flavida* Gray. St. Cloud.*G. crinita* Froel. St. Cloud; Fountain City.*G. puberula* Michx. St. Cloud.*G. quinquefolia* L. Fountain City.

APOCYNACEAE

Apocynum androsaemifolium L. St. Paul.*A. cannabinum* L. Guttenberg.

ASCLEPIADACEAE

Asclepias tuberosa L. St. Paul.*A. incarnata* L. St. Paul.*A. ovalifolia* Dec. St. Paul.*Acerates viridiflora* Dec. St. Paul.*A. lanuginosa* (L) Dec. St. Paul.

POLEMONIACEAE

Phlox pilosa L. St. Cloud; St. Paul.*P. divaricata* L. Guttenberg.*Polemonium reptans* L. Guttenberg.

HYDROPHYLLACEAE

Hydrophyllum virginicum L. St. Cloud.*Ellisia Nyctelea* L. Guttenberg.

BORAGINACEAE

- Mertensia virginiana* (L.) Link. Guttenberg.
Lithospermum canadense Nutt. St. Paul; St. Cloud.
L. Gmelini (Michx.) Hitch. St. Paul; St. Cloud.
L. angustifolium Michx. Fountain City.
Onosmodium occidentale Mackenzie. La Crosse.

VERBENACEAE

- Verbena bracteosa* Michx. St. Cloud.

LABIATAE

- Teucrium canadense* L. St. Paul.
Scutellaria parvula Michx. St. Cloud.
S. lateriflora L. St. Cloud; Guttenberg.
Agastache foeniculum (Pursh) Kuntze. St. Cloud.
Nepeta cataria L. St. Paul.
Dracocephalum parviflorum Nutt. St. Cloud.
Prunella vulgaris L. St. Cloud; La Crosse.
Physostegia virginiana L. St. Cloud; Guttenberg.
Leonurus cardiaca L. St. Paul.
Monarda fistulosa L. St. Paul.
M. punctata L. Fountain City.
Hedeoma hispida L. La Crosse.
Pycnanthemum virginianum (L.) Dur. & Jack. St. Cloud.
Lycopus americanus Muhl. St. Cloud.

SOLANACEAE

- Physalis lanceolata* Michx. St. Paul.
Solanum nigrum L. St. Cloud.

SCROPHULARIACEAE

- Linaria vulgaris* L. St. Cloud.
Pentstemon pubescens Sol. St. Cloud.
P. grandiflorus Nutt. St. Cloud; St. Paul.
Chelone glabra L. Fountain City.
Mimulus Jamesii T. & G. St. Paul.
M. ringens L. St. Paul.
Veronica virginica L. St. Cloud; La Crosse.
Gerardia tenuifolia Vahl. Elkader; St. Cloud.
G. pedicularia L. Fountain City.
Castilleja sessiliflora Pursh. St. Cloud.
C. coccinea (L.) Spreng. Fountain City; St. Cloud; St. Paul.
Pedicularis canadensis L. St. Cloud.
P. lanceolata Michx.

RUBIACEAE

- Galium boreale* L. St. Paul.
G. trifidum Michx. St. Paul.
Houstonia purpurea L. St. Cloud.

CAPRIFOLIACEAE

- Diervilla trifida* (L.) Moench. St. Paul.
Lonicera dioica L. St. Paul; St. Cloud.
Symphoricarpus occidentalis Hook. St. Paul.
Viburnum pubescens (Ait.) Pursh. St. Paul.
Viburnum lentago L. St. Cloud.
V. opulus var. *americanum* (Mill) Ait. St. Cloud.
Sambucus canadensis L. St. Cloud.

VALERIANACEAE

- Valeriana edulis* Nutt. Fountain City.

CUCURBITACEAE

Echinocystis lobata (Michx.) T. & G. St. Cloud.

CAMPANULACEAE

Campanula americana L. St. Paul; St. Cloud.

C. rotundifolia L. St. Paul.

LOBELIACEAE

Lobelia spicata Lam. St. Paul; La Crosse.

L. cardinalis L. Guttenberg.

L. syphilitica L. Guttenberg.

COMPOSITAE

Eupatorium urticaefolium Reichard. St. Cloud.

E. perfoliatum L. St. Cloud.

E. purpureum L. St. Cloud; Fountain City.

Liatris scariosa Willd. St. Cloud.

L. pycnostachya Michx. La Crosse.

Solidago canadensis L. St. Cloud.

S. speciosa var. *angustata* T. & G. St. Cloud.

S. rigida L. La Crosse; St. Cloud.

S. graminifolia (L.) Salisb. St. Cloud.

Aster novae-angliae L. St. Cloud.

A. sericeus Vent. St. Paul; Fountain City.

A. patens L. St. Cloud; Fountain City.

A. Drummondii Lindl. St. Cloud.

A. ericoides L. Fountain City.

A. multiflorus Ait. Fountain City.

A. umbellatus Mill. La Crosse.

A. ptarmicoides T. & G. St. Cloud.

Erigeron philadelphicum L. St. Paul.

E. ramosus (Walt.) B.S.P. St. Paul.

E. canadensis L. St. Cloud.

Antennaria plantaginifolia (L.) Richards. St. Paul.

Gnaphalium polycephalum Michx. La Crosse.

Helopsis scabra Dunal. St. Paul.

Rudbeckia hirta L. St. Paul.

Helianthus strumosus L. St. Cloud.

H. strumosus var. *mollis* T. & G. St. Cloud.

Coreopsis palmata Nutt. St. Paul.

Bidens cernua L. St. Cloud.

B. frondosa L. St. Cloud.

Helenium autumnale L. St. Cloud.

Tanacetum vulgare L. St. Cloud.

Artemisia frigida Willd. St. Cloud.

Cacalia reniformis Muhl. Elkader.

Senecio balsamitae Muhl. St. Paul.

Arctium minus Bernh. St. Cloud.

Cirsium iowense (Pammel) Fernald (*Cnicus iowensis* Cratty Pammel)
St. Cloud.

C. discolor (Muhl.) Spreng. Fountain City.

Krigia amplexicaulis Nutt. St. Cloud.

Prenanthes alba L. St. Cloud.

P. aspera Michx. St. Cloud.

P. racemosa Michx. La Crosse.

Hieracium canadense Michx. St. Cloud.

DEPARTMENT OF BOTANY

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