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PUBLICATIONS OF
THE MINNESOTA GEOLOGICAL SURVEY
AND ITS PREDECESSOR,
THE GEOLOGICAL AND NATURAL HISTORY SURVEY OF MINNESOTA

Compiled by
Lynn Swanson
Updated November 9, 1999*

PREFACE

The following listing is limited to the geological publications of the Minnesota Geological Survey and its predecessor, the Geological and Natural History Survey of Minnesota. Geological activities of the earlier Survey were carried out under the direction of N.H. Winchell, the the director of the Survey from 1872 to 1900. Little attention during those years was given to the natural history component of the Survey, but with the completion of the final report on the geology of the state in 1900, emphasis shifted from geological investigations (which for all intents and purposes ceased in that year) to botanical and zoological investigations under the direction of the state botanist and state zoologist. The investigations into the natural history of the state continued many years into this century, with the last publications issued under the auspices of the Geological and Natural History Survey appearing in 1916. In the meantime, the Minnesota Geological Survey was established in 1911 as separate from the Geological and Natural History Survey of Minnesota.

Not included in this listing are most of the botanical and zoological series publications of the earlier Survey, except where they are part of established geological series publications such as the Annual Reports and Bulletins. Most publications of a peripheral or transitory nature, like news releases and informal field guides, have been excluded. Also excluded are most publications for which the Survey shares publishing credit with other organizations or which the Survey has completed as part of another organization’s activities.

The listing is arranged alphabetically by publication name (see below), and numerically or chronologically within each series. The additional category at the end entitled OTHER PUBLICATIONS includes those that are not part of a series or set.

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**AEROMAGNETIC MAP SERIES**

This series ceased publication with number A-9, 1991.

| A-1 1983 | Chandler, V.W., Aeromagnetic map of Minnesota, Cook and Lake Counties, total magnetic intensity anomaly: Scale 1:250,000, 2 pls. |
| A-2 1983 | Chandler, V.W., Aeromagnetic map of Minnesota, St. Louis County, total magnetic intensity anomaly: Scale 1:250,000, 2 pls. |
| A-3 1983 | Chandler, V.W., Aeromagnetic map of Minnesota, Carlton and Pine Counties, total magnetic intensity anomaly: Scale 1:250,000, 2 pls. |
| A-4 1983 | Chandler, V.W., Aeromagnetic map of Minnesota, east-central region, total magnetic intensity anomaly: Scale 1:250,000, 2 pls. |
| A-5 1985 | Chandler, V.W., Aeromagnetic map of Minnesota, central region, total magnetic intensity anomaly: Scale 1:250,000, 2 pls. |
| A-6 1987 | Chandler, V.W., Aeromagnetic map of Minnesota, west-central region, magnetic intensity anomaly: Scale 1:250,000 2 pls. |
| A-7 1989 | Chandler, V.W., Aeromagnetic map of Minnesota, northwestern region, magnetic intensity anomaly: Scale 1:250,000 2 pls. |
| A-8 1989 | Chandler, V.W., Aeromagnetic map of Minnesota, southwestern region, magnetic intensity anomaly: Scale 1:250,000 2 pls. |
| A-9 1991 | Chandler, V.W., Aeromagnetic map of Minnesota, southeastern region, magnetic intensity anomaly: Scale 1:250,000 2 pls. |
| A-10 1998 | Chandler, V.W., and Lively, R.S., Aeromagnetic map of Minnesota, north-central region—Angle Inlet and Oak Island quadrangles, total magnetic intensity anomaly: Scale 1:100,000, 1 pl. |
| A-11 1998 | Chandler, V.W., and Lively, R.S., Aeromagnetic map of Minnesota, north-central region—Roseau quadrangle, total magnetic intensity anomaly: Scale 1:100,000, 1 pl. |
AEROMAGNETIC MAP SERIES  continued
A-12  1998  Chandler, V.W., and Lively, R.S., Aeromagnetic map of Minnesota, north-central region—Grygla quadrangle, total magnetic intensity anomaly:  Scale 1:100,000, 1 pl.
A-13  1998  Chandler, V.W., and Lively, R.S., Aeromagnetic map of Minnesota, north-central region—Fosston quadrangle, total magnetic intensity anomaly:  Scale 1:100,000, 1 pl.
A-14  1998  Chandler, V.W., and Lively, R.S., Aeromagnetic map of Minnesota, north-central region—Baudette quadrangle, total magnetic intensity anomaly:  Scale 1:100,000, 1 pl.
A-16  1998  Chandler, V.W., and Lively, R.S., Aeromagnetic map of Minnesota, north-central region—Blackduck quadrangle, total magnetic intensity anomaly:  Scale 1:100,000, 1 pl.
A-17  1998  Chandler, V.W., and Lively, R.S., Aeromagnetic map of Minnesota, north-central region—Little Fork snf International Falls quadrangles, total magnetic intensity anomaly:  Scale 1:100,000, 1 pl.
A-18  1998  Chandler, V.W., and Lively, R.S., Aeromagnetic map of Minnesota, north-central region—Bigfork quadrangle, total magnetic intensity anomaly:  Scale 1:100,000, 1 pl.

ANNUAL REPORTS

1st  1872  Winchell, N.H.,  with a contribution by  Twining, E.H., 1873, The first annual report, for the year 1872: Published in the Regents’ Report for 1872, 112 p.; 2nd ed. of 1884 identical.
    CONTENTS:  Address;
    Historical sketch and list of publications relating to the geology and natural history of Minnesota;
    General principles;
    The surface contour of the State;
    The surface geology;
    Sketch of the geology of Minnesota;
    Plans and recommendations;
    List of plants.

    CONTENTS:  Address;
    The Belle Plaine Salt Well;
    Peat;
    The geology of the Minnesota Valley.
ANNUAL REPORTS continued

3rd 1874  Winchell, N.H., 1875, The third annual report, for the year 1874: Published in the Regents’ Report for 1874, 42 p.; 2nd ed. of 1894 identical.
CONTENTS: Address;
Report on the geology of Freeborn County;
Report on the geology of Mower County.

4th 1875  Winchell, N.H., with Harrington, M.W., assistant, and a contribution by Angst, R., 1876, The fourth annual report, for the year 1875: Also in the Regents’ Report for 1875, 162 p.
CONTENTS: Address and summary statement;
Report on the geology of Fillmore County;
Report on Olmsted County;
Dodge County;
Steele County;
Topography;
Railroad elevations;

5th 1876  1877, The fifth annual report, for the year 1876: 205 p.; also included as part of the Regents’ Report for 1876;
CONTENTS: Summary statement;
The geology of Houston County;
Notes on the fossils of the Trenton limestone in Minnesota;
Chemistry;
Botany;
Fungi;
Ornithology,
Entomology;
The geology of Hennepin County;
Aves;
A new cyclops.

CONTENTS: Summary statement;
The water supply of the Red River Valley;
Reconnaissances;
The geology of Morrison County;
The geology of Ramsey County;
The geology of Rock and Pipestone Counties;
Notes on the fossils of the Trenton in Minnesota;
Report on the geology of Rice County;
Chemistry;
Entomology;
Ornithology;
Railroad elevations;

**CONTENTS:**
- Summary statement;
- Sketch of the work of the season of 1878;
- Field report of C.W. Hall;
- Elevations on the Minnesota Northern Railroad;
- Chemistry;
- Ornithology;
- The plants of the North Shore of Lake Superior;
- Report on the General Museum;
- Microscopic Entomosarca

8th 1879 Winchell, N.H., *with contributions by* Upham, W., Hall, C.W., Roberts, T.S., Peckham, S.F., Hatch, P.L., and Smith, J.L., 1880, The eighth annual report, for the year 1879: Also in the Regents' Report for 1879-1880, 187 p.; included at the back of some copies of the annual report for this year are Miscellaneous Publication 8 and Circular 5, 37 p. For more information on these series, see MISCELLANEOUS PUBLICATIONS.

**CONTENTS:**
- Summary statement;
- Lithology;
- The Museum;
- Descriptions of new species of Brachiopoda from the Trenton and Hudson River Formations in Minnesota;
- Preliminary report on the geology of central and western Minnesota;
- Report of Professor C.W. Hall;
- Plants of the North Shore of Lake Superior, Minnesota;
- Chemistry; Ornithology;
- On lintonite and other forms of thomsonite: A preliminary notice of the zeolites of the vicinity of Grand Marais, Cook County, Minnesota;
- Correspondence with the United States Geological Survey;
- Study of Emmet County meteorite that fell near Estherville, Emmett County, Iowa, May 10, 1879;
- Castoroides ohioensis, Foster.


**CONTENTS:**
- Summary statement;
- Preliminary list of rocks;
- New Brachipoda from the Trenton and Hudson River Formations in Minnesota;
ANNUAL REPORT 9 continued

The Museum report for 1880;
List of books in the Library of the Geological and Natural History Survey;
The water supply of the Red River Valley;
The Upper Mississippi region;
The hydrology of Minnesota;
Report of progress in exploration of the glacial drift and its terminal moraines;
Chemistry;
A list of birds of Minnesota;
The winter birds of Minnesota;
Determination of latitude and longitude in Minnesota;
The cupriferous series in Minnesota;
An ancient outlet of Lake Manitoba.

CONTENTS: Summary statement;
Preliminary list of rocks;
The Potsdam sandstone;
Typical thin sections of the rocks of the cupriferous series in Minnesota;
The Museum;
Geological notes on Minnesota [a translation];
Chemistry;
The geology of the deep well drilled by C.C. Whelpley at Minneapolis, at the “C” Washburn mill;
Papers on the Crustacea of the fresh waters of Minnesota.

CONTENTS: The mineralogy of Minnesota;
The crystalline rocks of Minnesota [a translation];
Notes on rock-outcrops in central Minnesota;
Lake Agassiz: A chapter in glacial geology;
The iron region of northern Minnesota;
Note on the age of the rocks of the Mesabi and Vermilion iron districts;
Chemical analyses;
Minnesota laws relating to mines and mining.

ANNUAL REPORT 12 continued

CONTENTS: Summary statement;
Palaeontology;
The comparative strength of Minnesota and New England granites;
Report on the Museum for 1883;
A final report on the Crustacea of Minnesota included in the orders Cladocera and Copepoda;
Catalogue of the flora of Minnesota.


CONTENTS: Summary statement;
Reconnaissances;
The Vermilion iron ores;
The crystalline rocks of Minnesota;
Additional rock samples numbered;
The Humboldt salt well in Kittson County;
The deep well at Lakewood Cemetery;
Notes on the artesian wells at Mendota, Hastings, Red Wing, Lake City and Brownsville, and on the deep wells at St. Paul;
Fossils from the red quartzite at Pipestone;
The New Orleans Industrial and Cotton Centennial Exposition;
Report on the Museum for 1884;
Notes on the geology of Minnehaha County, Dakota;
Chemistry;
Minnesota geographical names derived from the Dakota language with some that are obsolete;
Entomology;
The crystalline rocks of the Northwest;
Geological notes in Blue Earth County;
Fossil elephant in Winona County;
Boulder-clays;
On the foraminifera of the boulder-clay taken from a well shaft 22 feet deep, Meeker County, central Minnesota;
Notes on the mammals of Big Stone Lake and vicinity.


CONTENTS: Summary statement;
Notes on some deep wells in Minnesota;
List of the Aphididae of Minnesota, with descriptions of some new species;
Report on the Lower Silurian Bryozoa with preliminary descriptions of some of the new species;
Remarks upon the names Cheirocrinus and Calceocrinus, with descriptions of three new generic terms and one new species; Conchological notes; Report on the Museum for 1885; The bibliography of the foraminifera, recent and fossil, including Eozoon and Receptaculites, 1565-Jan. 1, 1886; New species of fossils; A supposed silver alloy of copper and silver from the North Shore of Lake Superior; Revision of the stratigraphy of the Cambrian in Minnesota; Notes of a trip up the Thief River and at Lake Mille Lacs; Chemistry; Ornithology.


CONTENTS: Summary report; Report of geological observations made in northeastern Minnesota during the season of 1886; Geological report of N.H. Winchell; Partial report of observations made by H.V. Winchell; Chemistry; Railroad elevations; Geographical names from the Chippewa language; Notes on Illaeni.


CONTENTS: Summary statement; Report of N.H. Winchell; Report of a geological survey in Minnesota during the season of 1887; Report of observations made during the summer of 1887; Notes on the molluscan fauna of Minnesota.


CONTENTS: Summary statement for 1888; Report of N.H. Winchell; Report of field observations made during the season of 1888 in the iron regions of Minnesota; Report of geological observations made in northeastern Minnesota during the summer of 1888; Museum additions; Appendix—List of recent publications relating to the crystalline rocks.
ANNUAL REPORTS continued


  CONTENTS: Summary statement for 1889;
  Report of field observations;
  American opinion on older rocks.


  CONTENTS: The elements of a new method of chemicomicroscopic analysis of rocks and minerals [a translation];
  Geognostic and geographic observations in the State of Minnesota [a translation];
  Chemistry;
  The woods of Minnesota;
  Museum additions;
  Additions to the Library since the report of 1889;
  Catalogue of the meteorites in the University collection, with references to literature describing them;
  Notes on the petrography and geology of the Akeley Lake region in northeastern Minnesota;
  New Lower Silurian Lamellibranchiata, chiefly from Minnesota rocks.


  CONTENTS: The crystalline rocks: Some preliminary considerations as to their structures and origin;
  Field notes of N.H. Winchell in 1890;
  Field observations on certain granitic areas in northeastern Minnesota;
  The Mesabi iron range;
  Sketch of the coastal topography of the north side of Lake Superior, with special reference to the abandoned strands of Lake Warren (the greatest of the Late Quaternary lakes of North America);
  Diatomaceae of Minnesota interglacial peat;
  List of species and some notes upon them;
  Oxide of manganese; Museum additions;
  Additions to the Library since the report for 1890.


  CONTENTS: Summary statement and comparative nomenclature;
  The geology of Kekequabic Lake in northeastern Minnesota, with special reference to an augite soda-granite;
ANNUAL REPORT 21 continued

Catalogue of rock specimens collected in northeastern Minnesota in 1892;
Preliminary report of a reconnaissance in northwestern Minnesota in 1892; Field observations of N.H. Winchell in 1892;
Additional rock samples collected in 1892 to illustrate the report of N.H. Winchell;
Additions to the Library since the report for 1891.


CONTENTS: Summary statement;
List of rock samples collected to illustrate the notes of N.H. Winchell, 1893;
Preliminary report of field work during 1893 in northeastern Minnesota, chiefly related to the glacial drift;
Preliminary report of field work during 1893 in northeastern Minnesota by U.S. Grant;
List of rock samples collected in 1893 by U.S Grant;
List of rock samples collected in 1893 by A.D. Meeds;
Preliminary report of a reconnaissance in northwestern Minnesota during 1893 by J.E. Todd;
Notes on the geology of Itasca County, Minnesota;
Preliminary report on field work done in 1893 by J.E. Spurr;
List of rock samples collected in 1893 by J.E. Spurr;
Preliminary report of leveling party;
Preliminary report of field work during 1893 in northeastern Minnesota by A.H. Elftman;
List of rock samples collected in 1893 by A.H. Elftman;
Museum additions;
Additions to the Library since the report of 1892;
The exhibit of the Survey at the Columbian Exposition.


CONTENTS: Summary statement;
The origin of the Archean greenstones;
Preliminary report on the Rainy Lake gold region;
The topographical survey of Minnesota;
Historical sketch of the discovery of mineral deposits in the Lake Superior region;
Late Glacial or Champlain subsidence and reelevation of the St. Lawrence River basin;
Notes on Minnesota minerals;
Chemical analyses;
The progress of mining;
Compressive strength of some Minnesota bricks and building stones;
List of rock samples collected in 1894 by U.S. Grant;
Notes upon the bedded and banded structures of the gabbro and upon an area of troctolyte;
Additions to the Library since the report for 1893; Museum additions;
List of rock samples collected in 1894 to illustrate the field notes of N.H. Winchell.

CONTENTS: Winchell, N.H., Summary statement, p. vii–xxviii;
[Winchell, N.H.,] Rock samples collected to illustrate the notes of N.H. Winchell in 1896, with annotations, p. 1–39;
[Winchell, N.H.,] Rock samples collected to illustrate the field notes of N.H. Winchell in 1897, with annotations, p. 39–84;
[Winchell, N.H.,] Rock samples collected by N.H. Winchell in 1898, with field annotations, p. 66–84;
Grant, U.S., Record of geological field work in northeastern Minnesota, 1892 to 1898 by U.S. Grant, p. 85–144;
Grant, U.S., List of rock samples collected in northeastern Minnesota in 1898 by U.S. Grant, p. 145–147;
Elftman, A.H., Preliminary report of fieldwork during the summer of 1895, p. 148–149;
Elftman, A.H., List of rock samples collected in northeastern Minnesota in 1895, 1896 and 1897 by A.H. Elftman, p. 150–170;
Additions to the Library since the report for 1894, p. 171–178;
General index of the annual reports of the Minnesota Survey, [reports I-XXIV], 1872-1899, p. 179–284;
Price list of the publications of the geological and natural history survey of Minnesota, 7 p.

BULLENTINS

1 1889 Winchell, N.H., The history of geological surveys in Minnesota: 37 p.
2 1887 Wadsworth, M.E., Preliminary description of the peridotites, gabbros, diabases and andesites of Minnesota: 172 p.
BULLETINS continued

4  1887  Oestlund, O.W., Synopsis of the Aphididae of Minnesota: 100 p.
6  1891  Winchell, N.H., and Winchell, H.V., Iron ores of Minnesota, their
geology, discovery, development, qualities and origin, and
comparison with those of other iron districts: 430 p., 3 pls. in pocket.
7  1892  Herrick, C.L., The mammals of Minnesota. A scientific and popular
account of their features and habits: 300 p.
8  1893  Lawson, A.C., I. The anorthosytes of the Minnesota coast of Lake
Superior. II. The laccolithic sills of the northwest coast of Lake
Superior; with a prefatory note on the Norian of the Northwest, by
9  1894-98  MacMillan, C., editor, Minnesota botanical studies, vol 1: 1081 p.; also
v. 2 of the Reports of the Survey, Botanical Series. This volume was
distributed by the State Botanist.
10  1894  Spurr, J.E., The iron-bearing rocks of the Mesabi range in Minnesota:
268 p.
11  1914  Grout, F.F., and Soper, E.K., Preliminary report on the clays and shales
of Minnesota: 175 p.
12  1915  Leverett, F., Surface formations and agricultural conditions of
northwestern Minnesota; with a chapter on climatic conditions of
Minnesota, by U.G. Purssell: 78 p., 1 pl. in pocket.
13  1917  Leverett, F., and Sardeson, F.W., Surface formations and agricultural
conditions of northeastern Minnesota; with a chapter on climatic
conditions of Minnesota, by U.G. Purssell: 72 p., 1 pl. in pocket.
14  1919  Leverett, F., and Sardeson, F.W., Surface formations and agricultural
conditions of the southern half of Minnesota; with a chapter on
climatic conditions of Minnesota, by U.G. Purssell: 147 p., 1 pl. in pocket.
15  1918  Harder, E.C., and Johnston, A.W., Preliminary report on the geology of
east central Minnesota, including the Cuyuna iron-ore district: 178
p., 5 pls. in pocket.
17  1919  Grout, F.F., and Broderick, T.M., The magnetite deposits of
northeastern Mesabi range, Minnesota: 58 p., 1 pl. in pocket.
19  1924  Gruner, J.W., Contributions to the geology of the Mesabi range, with
special reference to the magnetites of the iron-bearing formation
west of Mesaba: 71 p., 2 pls. in pocket.
20  1925  Schwartz, G.M., A guidebook to Minnesota Trunk Highway No. 1: 128
p.
21  1926  Grout, F.F., The geology and magnetite deposits of northern St. Louis
County, Minnesota: 220 p.
22  1932  Allison, I.S., The geology and water resources of northwestern
Minnesota: 245 p.
BULLETINS continued


26 1935  Cooper, W.S., The history of the upper Mississippi River in Late Wisconsin and postglacial time: 116 p., 4 p. of pls.


38 1954  White, D.A., The stratigraphy and structure of the Mesabi range, Minnesota: 92 p., 4 pls. on 17 sheets in pocket.


40 1961  Schneider, A.F., Pleistocene geology of the Randall region, central Minnesota: 151 p., 1 pl. in pocket.

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<td>44</td>
<td>1964</td>
<td>Taylor, R.B., Geology of the Duluth Gabbro Complex near Duluth, Minnesota</td>
<td>63 p., 1 pl. in pocket</td>
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**CIRCULARS.** See MISCELLANEOUS PUBLICATIONS

**COUNTY ATLAS SERIES**

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<th>1982</th>
<th>Balaban, N.H., and McSwiggen, P.L., editors, Geologic atlas of Scott County, Minnesota: Scale 1:100,000 and smaller, 6 pls.</th>
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<td>C-2</td>
<td>1984</td>
<td>Balaban, N.H., and Olsen, B.M., editors, Geologic atlas of Winona County, Minnesota: Scale 1:100,000 and smaller, 8 pls.</td>
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<td><strong>PLATES:</strong> 1, Olsen, B.M., Data base map; 2, Mossler, J.H., and Book, P.R., Bedrock geology; 3, Hobbs, H.C., Surficial geology; 4, Kanivetsky, R., Bedrock hydrogeology; 5, Dalgleish, J.B., and Alexander, E.C., Jr., Sinkholes and sinkhole probability; 6, Kanivetsky, R., Susceptibility of the ground-water system to pollution; 7, Olsen, B.M., Geology and well construction; 8, Jirsa, M.A., and Meyer, G.N., Geologic resources.</td>
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<td>C-3</td>
<td>1988</td>
<td>Balaban, N.H., editor, Geologic atlas of Olmsted County, Minnesota: Scale 1:100,000, 9 pls.</td>
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COUNTY ATLAS SERIES  C-3  continued

**PLATES:** 1, Hobbs, H.C., Olsen, B.M., and Wahl, T.E., Data base map; 2, Olsen, B.M., Bedrock geology; 3, Hobbs, H.C., Surficial geology; 4, Olsen, B.M., Depth to bedrock and bedrock topography; 5, Kanivetsky, R., Bedrock hydrogeology; 6, Olsen, B.M., and Hobbs, H.C., Sensitivity of the ground-water system to pollution; 7, Alexander, E.C., Jr., and Maki, G.L., Sinkholes and sinkhole probability; 8, Olsen, B.M., Geology and well construction; 9, Kuhns, M.J.P., Geologic resources.

C-4  1989  Balaban, N.H., editor, Geologic atlas of Hennepin County, Minnesota: Scale 1:100,000 and smaller. 9 pls.


C-5  1990  Swanson, L., and Meyer, G.N., editors, Geologic atlas of Washington County, Minnesota: Scale 1:100,000 and smaller, 7 pls.


C-6  1990  Balaban, N.H., and Hobbs, H.C., editors, Geologic atlas of Dakota County, Minnesota: Scales 1:100,000 and 1:125,000, 9 pls.


C-7  1992  Meyer, G.N., and Swanson, L., supervising editors, Geologic atlas of Ramsey County, Minnesota: Scale 148,000 and smaller, 10 pls.

**PLATES:** 1, Bauer, E.J., Cleland, J.M., and Wahl, T.E., Database map; 2, Mossler, J.H., and Bloomgren, B.A., Bedrock geology; 3, Patterson, C.J., Surficial geology; 4, Mossler, J.H., Bedrock
COUNTY ATLAS SERIES  C-7 continued


C-8, Pt A 1995  Mossler, J.H., project manager, Geologic atlas of Fillmore County, Minnesota: Scale 1:100,000, 5 pls.


C-8, Pt C 1995  Lively, R.S., and Balaban, N.H., editors, Text supplement to the Geologic Atlas, Fillmore County, Minnesota. 41 p.


C-9, Pt A 1995  Mossler, J.H., project manager, Geologic atlas of Rice County, Minnesota: Scale 1:100,000, 6 pls.


C-10, Pt A 1995  Meyer, G.N., project manager, Geologic atlas of Stearns County, Minnesota: Scales 1:100,000 and 1:200,000, 7 pls.


CONTENTS: Chap. 1, Boerboom, T.J., Precambrian geology of Stearns County, Minnesota, p. 1-6; chap. 2, Setterholm, D.R.,
COUNTY ATLAS SERIES  C-10, Pt. C  continued


C-11, Pt A  1998 Mossler, J.H., project manager, Geologic atlas of Mower County, Minnesota: Scale 1:100,000, 6 pls.


C-12, Pt A  1998 Setterholm, D.R., project manager, Geologic atlas of Goodhue County, Minnesota, 6 pls., scale 1:100,000.


EDUCATIONAL SERIES

7  1990  Wright, H.E., Jr., Geologic history of Minnesota rivers.  20 p.
EDUCATIONAL SERIES continued

8  1987  Olsen, B.M., Mohring, E.H., and Bloomgren, P.A., Using ground-water
data for water planning:  24 p.


FINAL REPORT

1  1872-1882  Winchell, N.H.; assisted by Warren Upham, 1884, The geology of
CONTENTS:  Winchell, N.H., Preface, xi–xii;
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1966 Sloan, R.E., and Austin, G.S., compilers, Geologic map of Minnesota, St. Paul sheet, bedrock geology.
1982    Green, J.C., compiler, Geologic map of Minnesota, Two Harbors sheet, bedrock geology.

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1972    Sims, P.K., and Morey, G.B., editors: 632 p., 2 pls. in pocket; the first of the pocketed plates is also Miscellaneous Map Series M-14, 1970.

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—Ground-water resources in Minnesota, by R.K. Hogberg, p. 595-602.

Pl. 1 Geologic map of Minnesota, bedrock geology, by P.K. Sims: Scale 1:1,000,000.
Pl. 2 Bouguer gravity map showing Midcontinental Gravity High, compiled by C. Craddock:

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GUIDEBOOK SERIES

1 1968  Austin, G.S., A geological field trip in the Rochester, Minnesota, area, October 5, 1968: Variant series title: Field Trip No. 1, 35 p.
GUIDEBOOK SERIES 2 continued

SPECIAL PAPER: Sims, P.K., Green, J.C., Morey, G.B., and Ojakangas, R.W., Geology of the western part of the Vermilion metavolcanic-metasedimentary belt, northeastern Minnesota.


SPECIAL PAPERS: Austin, G.S., Paleozoic lithostratigraphy of southeastern Minnesota; Webers, G.F., Paleoecology of the Ordovician strata of southeastern Minnesota; Sloan, R.E., Notes on the Platteville Formation, southeastern Minnesota; and Austin, G.S., Precambrian quartzite and Cretaceous rocks of southern Minnesota.


SPECIAL PAPERS: Precambrian geology of the Minnesota River Valley between Morton and Montevideo: Grant, J.A., Pt. 1—Geology and structure; and Pt. 2—Geochronology and geochemistry.


SPECIAL PAPERS: Matsch, C.L., Rutford, R.H., and Tipton, M.J., Quaternary geology of northeastern South Dakota and southwestern Minnesota; Steece, F.V., Ice-stagnation drift, Coteau des Prairies, South Dakota; Wright, H.E., Postglacial environmental history of the Coteau des Prairies; and Parham, W.E., A possible peneplain of Early Late Cretaceous age in Minnesota.

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SPECIAL PAPERS: Morey, G.B., Stratigraphic and tectonic history of east-central Minnesota; and Davidson, D.M., Jr., Some structural attributes of Lower and Middle Precambrian rocks, Carlton and Pine Counties, Minnesota.


**CONTENTS:** Goldstein, B., Geomorphology and Pleistocene glacial geology of central Minnesota, p. 1-46; Shurr, G.W., Gilbertson, J.P., Hammond, R.H., Setterholm, D.R, and Whelan, P.M., Cretaceous rocks on the eastern margin of the Western Interior Seaway: A field guide for western Minnesota and eastern South Dakota, p. 47-84.


**CONTENTS:** Hudleston, P.J., Bauer, R.L., Southwick, D.L., Schultz-Ela, D.D., and Bidwell, M.E., Structural geology of the boundary between Archean terranes of low-grade and high-grade rocks, northern Minnesota, p. 1-42; Miller, J.D., Jr., Geology of the Keweenawan (upper Precambrian) Beaver Bay Complex in the vicinity of Silver Bay, Minnesota, p. 43-54; Miller, J.D., Jr., Weiblen, P.W., and Green, J.C., Roadlog and stop descriptions for the Beaver Bay Complex, p. 55-70.

18 1992 Lehr, J.D., and Hobbs, H.C., Field trip guidebook for the glacial geology of the Laurentide divide area, St. Louis and Lake Counties, Minnesota: Prepared for the 39th Midwest Friends of the Pleistocene Field Trip, Biwabik, Minnesota, 1992, 73 p., 1 pl. (folded insert).

**CONTENTS:** Lehr, J.D., and Hobbs, H.C., Glacial geology of the Laurentian divide area, St. Louis and Lake Counties, Minnesota, p. 1-54, and Plate 2 (folded insert), Map showing glacial geomorphology of the Laurentian divide area, St. Louis and Lake Counties, Minnesota; Huber, J.K., An overview of the vegetational history of the Arrowhead region, northeastern Minnesota, p. 55-64; Hobbs, H.C., Description of Rotasonic core from the Toimi drumlin field area, p. 65-73.


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3 1966  Number never used


6 1969  Austin, G.S., Paleozoic lithostratigraphic nomenclature for southeastern Minnesota: 1 pl., 11-page accompanying text.


10 1974  Bonnichsen, B., Copper and nickel resources in the Duluth Complex, northeastern Minnesota: 24 p.

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43 1999 Morey, G.B., and Lively, R.S., Background levels of mercury and arsenic in Paleoproterozoic rocks of the Mesabi Iron Range, northern Minnesota: 14 p.
MINNESOTA AT A GLANCE

1995 Lively, R.S., Caves in Minnesota: 4 p.

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M-1 1965 Payne, C.M., Bedrock geologic map, Minneapolis, St. Paul and vicinity: Scale 1:24,000. Withdrawn in 1973—additional data since compilation.
M-2 1966 Green, J.C., Phinney, W.C., and Weiblen, P.W., Geologic map of Gabbro Lake quadrangle, Lake County, Minnesota: Scale 1:31,680.
M-3 1968 Ikola, R.J., Simple Bouguer gravity map of Minnesota, Hibbing sheet: Scale 1:250,000; this map was superseded by Miscellaneous Map Series M-56, 1985.
M-4 1968 Ikola, R.J., Simple Bouguer gravity map of southern part of Duluth Complex and adjacent areas, Minnesota: Scale 1:125,000.
M-5 1968 Sims, P.K., Morey, G.B., Ojakangas, R.W., and Griffin, W.L., Preliminary geologic map of the Vermilion district and adjacent areas, northern Minnesota: Scale 1:125,000; this map was printed with the wrong scale (1:250,000) indicated on the sheet, an error corrected on most of the distributed copies.
M-6 1969 Griffin, W.L., Geologic map of the Embarrass quadrangle, St. Louis County, Minnesota: Scale 1:24,000.
M-7 1969 Davidson, D.M., Jr., Geologic map of the Kawishiwi Lake quadrangle, Lake and Cook Counties, Minnesota: Scale 1:24,000; accompanying discussion: The Duluth Complex in the Perent Lake and Kawishiwi Lake quadrangles, Lake and Cook Counties, Minnesota, 10 p.
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M-8  1969  Davidson, D.M., Jr., Geologic map of the Perent Lake quadrangle, Lake County, Minnesota: Scale 1:24,000; accompanying discussion: The Duluth Complex in the Perent Lake and Kawishiwi Lake quadrangles, Lake and Cook Counties, Minnesota, 10 p.

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M-11  1971  Bonnichsen, B., Outcrop map of southern part of Duluth Complex and associated Keweenawan rocks, St. Louis and Lake Counties, Minnesota: Scale 1:125,000.


M-13  1973  Sims, P.K., Geologic map of western part of Vermilion district, northeastern Minnesota: Scale 1:48,000.

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M-24  1976  Morey, G.B., Geologic map of Minnesota, bedrock geology: Scale 1:1,000,000; on same sheet: Walton, M., The geologic terranes of Minnesota [brief discussion].

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M-50 1982 Green, J.C., and Schulz, K.J., Geologic map of the Ely quadrangle, St. Louis and Lake Counties, Minnesota: Scale 1:24,000.

M-51 1983 Mossler, J.H., Paleozoic lithostratigraphy of southeastern Minnesota: Scale 1:500,000, 8 pls.

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M-52 1983 Mossler, J.H., Bedrock topography and isopachs of Cretaceous and Quaternary strata, east-central and southeastern Minnesota: Scale 1:500,000, 2 pls.

M-53 1984 Chandler, V.W., Nordstrand, E., and Anderson, S., Shaded relief aeromagnetic anomaly map of northeastern and east-central Minnesota: Scale 1:1,000,000.

M-54 1985 Meyer, G.N., Quaternary geologic map of the Minneapolis-St. Paul urban area, Minnesota: Scale 1:48,000.

M-55 1986 Jirsa, M.A., Olsen, B.M., and Bloomgren, B.A., Bedrock geologic and topographic maps of the seven-county Twin Cities Metropolitan Area, Minnesota: Scale 1:125,000, 2 pls.

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M-57 1985 Bloomgren, B.A., Bedrock geologic and topographic maps of the Minneapolis-St. Paul urban area, Minnesota: Scale 1:48,000, 2 pls.

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M-58 1985 Lively, R.S., and Morey, G.B., Ground-water geochemical atlas for parts of east-central Minnesota: Scale 1:600,000, 5 pls.

PLATES: 1, Generalized geologic map of the study area, and Arsenic, and Selenium, and Silver, and Aluminum; 2, Boron, and Barium, and Beryllium, and Calcium, and Cobalt, and Chromium; 3, Copper, and Iron, and Potassium, and Lithium, and Magnesium, and
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<td>M-64</td>
<td>1988</td>
<td>Jirsa, M.A., Geologic map of the Sherry Lake quadrangle, Itasca County, Minnesota: Scale 1:24,000.</td>
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<tr>
<td>M-65</td>
<td>1988</td>
<td>Miller, J.D., Jr., Geologic map of the Silver Bay and Split Rock Point NE quadrangles, Lake County, Minnesota: Scale 1:24,000.</td>
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<td>M-66</td>
<td>1989</td>
<td>Miller, J.D., Jr., Green, J.C., and Boerboom, T.J., Geologic map of the Illgen City quadrangle, Lake County, Minnesota: Scale 1:24,000.</td>
</tr>
<tr>
<td>M-67</td>
<td>1990</td>
<td>Jirsa, M.A., and Boerboom, T.J., Bedrock geologic map of parts of Koochiching, Itasca, and Beltrami Counties, north-central Minnesota: Scale 1:250,000. (This map had to be reprinted shortly after its initial release because of a significant error on the base. The reprinted map is marked on both the map sheet and the map envelope as Corrected version. However, some copies of the faulty map were distributed before the map was reprinted. If a user has a copy of the faulty map, the Minnesota Geological Survey will gladly exchange it for the corrected version.)</td>
</tr>
<tr>
<td>M-68</td>
<td>1990</td>
<td>Jirsa, M.A., Bedrock geologic map of northeastern Itasca County, Minnesota: Scale 1:48,000.</td>
</tr>
<tr>
<td>M-69</td>
<td>1990</td>
<td>Setterholm, D.R., Geologic maps of the Late Cretaceous rocks, southwestern Minnesota: Scale 1:750,000, 2 pls.</td>
</tr>
</tbody>
</table>

**PLATES:**
- 1, Map A.—Bedrock geology
- 2, Map B.—Bedrock topography of the sub-Cretaceous surface
- and Map C.—Bedrock topography of the sub-Quaternary surface
- and Map D.—Isopachs of residual Cretaceous strata
- and Map E.—Isopachs of Quaternary strata.


M-72 1993 Miller, J.D., Jr., Green, J.C., Boerboom, T.J., and Chandler, V.W., Geologic map of the Doyle Lake and Finland quadrangles, Lake County, Minnesota: Scale 1:24,000.


PLATES: 1, Bedrock geologic map, scale 1:62,500; 2, Structure map of the St. Peter Sandstone, scale 1:125,000, and Structure map of the Prairie du Chien Group, scale 1:125,000, and Structure map of the Jordan Sandstone, scale 1:125,000, and Isopach map of the St. Peter Sandstone, scale 1:125,000, and Isopach map of the Prairie du Chien Group, scale 1:125,000, and First vertical derivation of the magnetic data, scale 1:125,000; 3, Stratigraphic cross sections and Structure map of the Mt. Simon Sandstone, northeastern Waseca County and adjacent areas of Le Sueur and Rice Counties, scale 1:100,000, and Water quality—Chemical constituent diagrams for water from wells completed in bedrock units, scale 1:125,000 and Table 1. Selected properties and constituents in water from wells completed in bedrock units.


M-76 1993 Meyer, G.N., Surficial geologic map of parts of Koochiching, Itasca, and Beltrami Counties, north-central Minnesota: Scale 1:250,000.

M-77 1993 Meyer, G.N., and Hobbs, H.C., Quaternary geologic map of Sherburne County, Minnesota: Scale 1:100,000.

M-78 1993 Meyer, G.N., Quaternary geologic map of Chisago County, Minnesota: Scale 1:100,000.

M-79 1993 Southwick, D.L., compiler, Geologic map of Archean bedrock, Soudan-Bigfork area, northern Minnesota: Scale 1:100,000, 2 maps on sheet. MAPS: Geologic map of Archean bedrock, Soudan-Bigfork area, northern Minnesota and Bedrock outcrop map.

M-80 1994 Jirsa, M.A., Runkel, A.C., and Chandler, V.W., Bedrock geologic map of northwestern Minnesota: Scale 1:250,000. See also Miscellaneous Map M-92, 1999, which is a limited revision of this map, in that it is
available in digital formats, has a different scale (1:200,000), the eastern boundary is extended several miles to long. 95°30’W., and the geology of the region has been slightly revised. Map M-80, 1994, has a more detailed description of map units, as well as a discussion of the regional geology.

Boerboom, T.J., and Miller, J.D., Jr., Bedrock geologic map of the Silver Island Lake, Wilson Lake, and western Toohey Lake quadrangles, Lake and Cook Counties, Minnesota: Scale 1:24,000.

Miller, J.D., Jr., Boerboom, T.J., and Jerde, E.A., Bedrock geologic map of the Cabin Lake and Cramer quadrangles, Lake and Cook Counties, Minnesota: Scale 1:24,000.

Lively, R.S., and Morey, G.B., Aerial gamma radiation in Minnesota and adjacent areas of North Dakota and South Dakota: Scale about 1:3,168,000.

MAPS: Quaternary geology, and Uranium (eU) [parts per million], and Thorium (eTh) [parts per million], and Potassium-40 [percent total potassium].

Lusardi, B.A., Surficial geology of Waseca County, Minnesota: Scale 1:62,000.

Jirsa, M.A., Boerboom, T.J., and Morey, G.B., Bedrock geologic map of the Virginia Horn, Mesabi Iron Range, St. Louis County, Minnesota: Scale 1:48,000.

Jirsa, M.A., Bedrock geologic map of the Midway area, St. Louis County, Minnesota: Scale 1:12,000.


Lusardi, B.A., Surficial geologic map of the Victoria quadrangle, Carver County, Minnesota: Scale 1:24,000.

Lusardi, B.A., Surficial geologic map of the Jordan East quadrangle, Carver and Scott Counties, Minnesota: Scale 1:24,000.

Chandler, V.W., and Lively, R.S., Gravity and magnetic modeling of the Duluth Complex in the Allen 7.5-minute quadrangle, St. Louis County, Minnesota: Scale 1:100,000.

Severson, M.J., and Miller, J.D., Jr., Bedrock geologic map of the Allen quadrangle, Minnesota: Scale 1:24,000.

Jirsa, M.A., Chandler, V.W., and Runkel, A.C., Bedrock geologic map of northwestern Minnesota: Scale 1:200,000. See also Miscellaneous Map Series M-80, 1994. Map M-92 differs from its predecessor in that the scale is changed, the eastern boundary of the map is moved several miles eastward to long. 95°30’W, and the geologic interpretation of the area is slightly revised. Map M-80, 1994, has a more detailed description of map units, as well as a discussion of the regional geology.

Lusardi, B.A., Surficial geologic map of the Jordan West quadrangle, Carver and Scott Counties, Minnesota: Scale 1:24,000.

Lusardi, B.A., Surficial geologic map of the Mound quadrangle, Carver and Hennepin Counties, Minnesota: Scale 1:24,000.

39
MISCELLANEOUS MAP SERIES  continued
M-95  1999  Meyer, G.N., compiler, Surficial geology of the Stillwater 30 x 60 minute quadrangle, Minnesota: Scale 1:100,000.
M-96  1999  Hobbs, H.C., compiler, Surficial geology of the Hastings 30 x 60 minute quadrangle, Minnesota: Scale 1:100,000.
M-97  1999  Meyer, G.N., and Patterson, C.J., compilers, Surficial geology of the Anoka 30 x 60 minute quadrangle, Minnesota: Scale 1:100,000.
M-98  1999  Peterson, D.M., and Jirsa, M.A., compilers, Bedrock geologic map and mineral exploration data of the western Vermilion district, St. Louis and Lake Counties, northeastern Minnesota: Scale 1:48,000.
  PLATES:  1, Bedrock geology; 2, Data base.
M-100 1999  Boerboom, T.J., Severson, M.J., and Southwick, D.L., Bedrock geologic map of the Mille Lacs 30 x 60 minute quadrangle, east-central Minnesota: Scale 1:100,000, 2 pls.
M-101 1999  Miller, J.D., Jr., and Chandler, V.W., Bedrock geologic map of the central Duluth Complex and the western part of the Beaver Bay Complex, Lake and St. Louis Counties, Minnesota: Scale 1:100,000.
M-102 1999  Meyer, G.N., and Mossler, J.H., compilers, 1999, Primary sources of construction aggregate in the Twin Cities Seven-County Metropolitan Area, Minnesota: Scale 1:100,000, 2 plates on 4 sheets.
  PLATES:  1, Map of primary aggregate sources; 2 sheets (north, south); 2, Data-base map; 2 sheets (north, south).

MISCELLANEOUS PUBLICATIONS

This series includes circulars and announcements that were designed to inform the public in the Survey’s early days of its plans, activities, and needs. They were considered to have very little scientific value and to be of only transitory interest. Few copies of each were printed. They are occasionally found referenced in early Survey reports, as well as in bibliographies and catalogs, which is why they have been included here. To date, the Survey has been able to locate copies of numbers 2, 3, 8, 9 (Circular 5), and 10 (Circular 6).

1  1872  Circular 1. Laws of Minnesota, 1872. To provide for a geological and natural history survey of the state [includes a note asking for the cooperation of citizens and others]: 4 p.?
3  1874  Winchell, N.H., Report of Prof. N.H. Winchell concerning the salt spring lands due to the state of Minnesota [a history of all official transactions relating to them, and a statement of their amount and location]: 26 p.
MISCELLANEOUS PUBLICATIONS  continued

4  1875 Lapham, I.A., A catalogue of the plants of Minnesota: Prepared in 1865, contributed to the Geological and Natural History Survey of Minnesota, and published by the State Horticultural Society in 1875.

5  1876 Circular 2. Botany [relating to botany and giving general directions for collecting information on the flora of the state]: 4 p.?

6  1877 Circular 3. The Museum [the establishment and organization of the Museum]: 4 p.?

7  1878 Circular 4. The Museum. Duplicate specimens for exchange: 4 p.?


9  1880 Circular 5. Winchell, N.H., Building stones, lime, clay, etc. To quarrymen and builders [relating to the collection of two-inch cubes of building stones for physical tests of strength, and for chemical examination, and samples of clay and brick for the General Museum]: 3 p.


11 1883? Circular 7. Distribution of specimens, addressed to normal and high schools.

NEWSLETTERS

1962 CONTENTS: Introduction; History; Appropriations; Staff; Advisory committee; Current activities; Noteworthy results; Need for detailed systematic geologic mapping; Publications issued by the Survey during the year; Plans for new publication series; Topographic mapping; Other geologic activities in the state: 6 p., mimeograph, dated June 6.

1964 CONTENTS: Activities; Fiscal statement; Natural Resources Bill; Staff notes; Current projects; Noteworthy results of current projects; Publications; Papers presented during the year; Other publications on Minnesota geology; Notes; Topographic mapping in Minnesota; Other geologic activities in the state: 13 p.

1965 CONTENTS: Summary of activities; Budget; Staff notes; Taconite amendment; Minnesota mineral industry—1964; The 1965 Omnibus
Fall 1985  CONTENTS:  Scientific drilling, central Minnesota; Midcontinent strategic and critical minerals; Director's column—MGS on the national and international scene; Project updates; MGS staff; Staff news; Recent theses on Minnesota geology; News notes; Library and publication news:  V. 1, no. 2, 6 p.

Spring 1986  CONTENTS:  Director's farewell; County geologic atlases; Project updates; Staff news; MGS staff; Funding report; Grant-in-aid program; Public inquires office:  V. 2, no. 2, 6 p.

Fall 1986  CONTENTS:  Priscilla C. Grew, new director; Director's column; Computerized geologic data base; In memoriam [Harold M. Mooney]; Moon Lake rising; Project updates; staff news; Summary of research areas; News notes; Recent theses on Minnesota geology; Recent Survey Publications; Sinkholes:  V. 2, no. 2, 6 p.

Spring 1987  CONTENTS:  Paleontology revisited; Cretaceous rocks; Director's column; Indo-U.S. Workshop; Project updates; Funding report; MGS staff; Uplifting moments in the field; Aquifer thermal energy storage; Staff news; Twin Cities Geologists; [untitled notice seeking information from anyone who felt earthquake on Wednesday, June 10, 1987]; GSA North-Central meeting; Recent MGS publications:  V. 3, no. 1, 6 p.

Fall 1987  CONTENTS:  History of the Minnesota Survey; Project updates; Dayton-Winchell legacy; Grant-in-aid projects; Staff news; Summary of research areas; More than connecting dots; Recent publications:  V. 3, no. 2, 6 p.

Spring 1988  CONTENTS:  Seismic reflection across the rift; Cross cut; The information explosion, knowledge, and abstracts; Project updates; If not the Giant Beaver, what? The pitfalls of selecting a state fossil; Ground water in the Mesabi range; Staff news; Funding report; Recent Survey publications:  V. 4, no. 1, 6 p.

Summer 1990  CONTENTS:  The Prairie du Chien-Jordan study; The mud-cracked bed of Lake Calhoun; Anoka Sand Plain study; Staff news; Project updates; Survey staff; Funding report; Recent Survey publications; outside publications; Coming fairly soon:  [no assigned a volume or issue number,] 6 p.

Winter 1992-93  CONTENTS:  From the Director; New bedrock geologic map of Minnesota; Reevaluation of the Cuyuna range; Ground-water chemistry in Rock and Nobles Counties; MGS women geologists as role models; Geographic Information System at MGS; Carver County; Reversed polarity till, SW Minnesota; MGS's County Well Index.  MGS fact sheet and order form (Newsletter insert): Activities map; MGS phone numbers; MGS staff; Active accounts July 1, 1991-June 30, 1993; New publications; order form; Forthcoming publications:  [no assigned a volume or issue number,] 8 p. including insert.
CONTENTS: From the (interim) Director; Minnesota’s County Geologic Atlas program; Personnel update; Changes in well-log access; Research highlights; New publications: [no assigned a volume or issue number,] 4 p.

OPEN-FILE REPORTS

This list is preliminary; some of the bibliographic information contained in the entries has not been verified. The list begins with 87-1, which was the first issue of the numbered Open-File Report series. Open-File Reports are mostly transitory and preliminary in nature; they are usually superceded by published versions as soon as possible.


PLATES: 1, Sub-Cretaceous bedrock topography; 2, Sub-Quaternary bedrock topography; 3, Cretaceous residual thickness isopach; 4, Quaternary thickness isopach; 5, Data base; 6, Cross-sections.


SHEETS: Kunze, D.R., Bloomgren, B.A., Guyer, T.G., Rutanen, R.E., and Streitz, A.R., Data base map of the Mesabi range, Hibbing to Virginia area, Minnesota; Bloomgren, B.A., Bedrock topographic map of the Mesabi range, Hibbing to Virginia area, Minnesota; Bloomgren, B.A., Drift thickness map of the Mesabi range, Hibbing to Virginia area, Minnesota.


89-1 1989  Jirsa, M.A., and Boerboom, T.J., Preliminary bedrock geologic map of parts of Koochiching, Itasca, and Beltrami Counties, north-central Minnesota: 2 map sheets, scale 1:250,000; explanatory text, 15 p. [text includes map explanation for sheets 1-2; description and correlation of map units for sheet 2; and 3 tables giving principal facts for test holes, and minor and major element geochemistry]. Published as Miscellaneous Map Series M-67.

SHEETS: 1, Data base map; 2, Bedrock geologic map.
OPEN-FILE REPORTS  continued


   PLATES:  [Maps of bedrock geology and bedrock topography.]

91-1  1991  Jirsa, M.A., Boerboom, T.J., Chandler, V.W., and McSwiggen, P.L., Preliminary bedrock geologic map of the Cook to Side Lake area, west-central St. Louis County, Minnesota: 3 map sheets, scale 1:48,000; explanatory text for sheets 2-3, 9 p. + 2 additional sheets showing Correlation of Map Units and an aeromagnetic derivative map, scale 1:250,000. Published as Miscellaneous Map Series M-75.

   SHEETS:  1, Outcrop map; 2, Database map; 3, Bedrock geologic map.


91-3  1991  Southwick, D.L., Preliminary geologic map of Archean bedrock, Soudan-Bigfork area, northern Minnesota: 2 sheets, scale 1:100,000; accompanying text, 11 p. Published as Miscellaneous Map Series M-79.

91-4  1991  Chandler, V.W., and Miller, J.D., Jr., Description of map sheets for the central Duluth Complex shallow drilling project: 2 maps on 1 sheet, scale 1:100,000; explanatory text, 4 p. [text includes table of principal facts for drill holes and an explanation to sheets 1-2].

   SHEETS:  1, Data base map; 2, Preliminary geological interpretation.


93-1A 1993  Jirsa, M.A., and others, Preliminary bedrock geologic maps of northwestern Minnesota: 4 sheets, scale 1:250,000; accompanying text, 48 p. Published as Miscellaneous Map Series M-80.

SHEETS: 1, Preliminary geologic map of Precambrian bedrock of northwestern Minnesota; 2, Preliminary geologic map of Phanerozoic bedrock of northwestern Minnesota; 3, Preliminary database map of northwestern Minnesota; 4, Preliminary bedrock topographic map of northwestern Minnesota.

93-2 1993  Miller, J.D., Green, J.C., and Chandler, V.W., [Duluth mapping project]: 2 numbered pls., scale 1:48,000; appendices, 173 p.; 16 oversize map sheets.

PLATES: 1, Preliminary geologic map of the Duluth area, St. Louis County, Minnesota; 2, Outcrop and drillhole database.

APPENDICES: A, Sample lists, 16 p. + 14 sample location maps, scale 1:24,000; B, Geophysical database, by V.W. Chandler, 20 p. + 2 oversize maps, scale 1:1,000,000 (Bouguer gravity anomaly and total intensity aeromagnetic); C, Whole rock geochemical analyses, compiled by J.C. Green; D, Microprobe mineral analyses, acquired and compiled by J.D. Miller, Jr., 81 p.; E, Institute on Lake Superior Geology, 1993, manuscripts, 32 p.


93-4 1993  Runkel, A.C., Bedrock geologic map of Carver County, Minnesota: Scale 1:100,000.


94-2 1994  Patterson, C.J., Regional hydrogeologic assessment: Quaternary geology—southwestern Minnesota: Scale 1:200,000; explanatory text. Published as Regional Hydrogeologic Assessment RHA-2, Part A.

94-3 1994  Morey, G.B., Cleland, J.M., Setterholm, D.R., and Vlasich, K.T., compilers, Preliminary bedrock geologic map of the Calumet quadrangle, St. Louis County, Minnesota: Scale 1:24,000.

94-4 1994  Morey, G.B., Cleland, J.M., Welsh, J.L., and Vlasich, compilers, Preliminary bedrock geologic map of the Virginia quadrangle, St. Louis County, Minnesota: Scale 1:24,000.

94-5 1994  Miller, J.D., Jr., Wahl, T.E., and Bauer, E.J.[sic], Digitization of geologic data from 1985-1993 COGEMAP Program area, Minnesota: Digital UNIX 150 mb 1/4-inch tape containing the data base in tar format for ARCINFO coverages. Analog copies include 1:100,000-scale plots of the data coverage over the entire COGEMAP study area (pl. 1), 1:100,000 plot of the high-resolution aeromagnetic image,
gravity station locations, and quadrangle outlines (pl. 2), and 1:24,000-scale plots of individual quadrangles, showing structural measurements and sample locations (pls. 4-9; pl. 3 is scale 1:10,000).


**PLATES:** 1, Preliminary bedrock geologic map; 2, Data base map.

95-2 1995 Runkel, A.C., Bedrock geologic maps, eastern half of Houston County, Minnesota: 2 oversize pls., scale 1:100,000; explanatory text, 5 p. *Superseded by Open-File Report 96-4.*

**PLATES:** 1, Bedrock geologic map; 2, Bedrock topographic map.

96-1 1996 Runkel, A.C., Geologic investigations applicable to ground-water management, Rochester metropolitan area, Minnesota: 33 p.; 4 oversize pls. on 7 sheets, scale 1:24,000.

**PLATES:** 1, Data-base map [2 sheets]; 2, Bedrock topography map [2 sheets]; 3, Bedrock geologic map [2 sheets]; 4, Bedrock geologic cross section [1 sheet].


96-3 1996 Meyer, G.N., Geology of the Bassett valley area [Minneapolis]: 2 pls., scale 1 inch = about 385 feet; explanatory text, 6 p. [text includes list of plates, brief geologic history of Bassett valley area, and description of map units].

**PLATES:** 1, Surface sediment prior to development [plate1 also includes cross sections]; 2, Depth to sand or glacial till [plate 2 also includes Figs. 1-3].


**PLATES:** 1, Bedrock geology; 2, Bedrock topography; 3, Orientation of fractures in carbonate rocks.

96-5 1996 Morey, G.B., and Cleland, J.M., compilers, Preliminary bedrock geologic map of the Biwabik quadrangle, St. Louis County, Minnesota: Scale 1:24,000.

96-6 1996 Morey, G.B., and Cleland, J.M., compilers, Preliminary bedrock geologic map of the Bovey quadrangle, Itasca County, Minnesota: Scale 1:24,000.

96-7 1996 Morey, G.B., and Cleland, J.M., compilers, Preliminary bedrock geologic map of the Pengilly quadrangle, Itasca County, Minnesota: Scale 1:24,000.
OPEN-FILE REPORTS continued

96-8  1996  Morey, G.B., and Cleland, J.M., compilers, Preliminary bedrock geologic map of the Gilbert quadrangle, St. Louis County, Minnesota: Scale 1:24,000.

96-9  1996  Morey, G.B., and Cleland, J.M., compilers, Preliminary bedrock geologic map of the McKinley quadrangle, St. Louis County, Minnesota: Scale 1:24,000.

96-10 1997  Morey, G.B., and Cleland, J.M., compilers, Preliminary bedrock geologic map of the Eveleth quadrangle, St. Louis County, Minnesota: Scale 1:24,000.

97-1  1997  Minnesota Geological Survey, Geomorphic maps of southern Minnesota; compiled from interpreted airphotos and existing geologic maps: 24 sheets, scale 1:100,000; [accompanying text?].

   SHEETS:  1, Lake Minnewaska; 2, Grantsburg (Minn. portion only); 3, Milbank [Minn. portion only], compiled by H.C. Hobbs; 4, Willmar, compiled by C.J. Patterson; 5, Litchfield, compiled by K.L. Harris; 6, Anoka; 7, Stillwater [Minn. portion only], compiled by H.C. Hobbs; 8, Clear Lake [Minn. portion only], compiled by C.J. Patterson; 9, Montevideo, compiled by C.J. Patterson; 10, Glencoe, compiled by K.L. Harris; 11, St. Paul, compiled by H.C. Hobbs; 12, Hastings [Minn. portion only], compiled by H.C. Hobbs; 13, Brookings [Minn. portion only], compiled by C.J. Patterson; 14, Tracy, compiled by C.J. Patterson; 15, New Ulm, compiled by K.L. Harris; 16, Faribault, compiled by C.J. Patterson; 17, Rochester, compiled by H.C. Hobbs; 18, Winona [Minn. portion only], compiled by H.C. Hobbs; 19, Sioux Falls [Minn. portion only], compiled by C.J. Patterson; 20, Worthington, compiled by C.J. Patterson; 21, Fairmont, compiled by K.L. Harris; 22, Albert Lea, compiled by C.J. Patterson; 23, Austin, compiled by H.C. Hobbs; 24, La Crosse [Minn. portion only], compiled by H.C. Hobbs.


   PLATES:  1, Selected karst features, bedrock geology, and depth to bedrock; 2, Complete data base and bedrock topography.

97-3  1997  Meyer, G.N., and Patterson, C.J., compilers, Surficial geology of the Anoka 30 x 60 minute quadrangle, Minnesota: Scale 1:100,000.

97-4  Number not used.


   PLATES:  1, Total field magnetic anomaly reduced to pole, by V.W. Chandler; 2, Second vertical derivative of the total field magnetic anomaly reduced to pole, by V.W. Chandler; 3, Second vertical derivative of the simple Bouguer anomaly, by V.W. Chandler; 4, Geophysical interpretation, by V.W. Chandler; 5, Drill
hole location and outcrop database map, compiled by M.A. Jirsa; 6, Bedrock geology, compiled by M.A. Jirsa; 7, Magnetic and gravity model cross-sections, by V.W. Chandler; 8, Depth to magnetic basement, by V.W. Chandler; 9, Mineral potential assessment map, by G.B. Morey.

97-6 1997 Lusardi, B.A., Surficial geologic map of the Shakopee quadrangle, Carver, Scott, and Hennepin Counties, Minnesota: Scale 1:24,000. *Superseded by Miscellaneous Map Series Map M-87.*

97-7 1997 McSwiggen, Peter, Pt-Pd, Au, Ag and Co mineralization in the Minnamax/Babbitt Cu-Ni deposit.


98-3 [1998] Morey, G.B., compiler, Preliminary bedrock geologic map of the Aurora quadrangle, St. Louis County, Minnesota: Scale 1:24,000.

98-4 [1998] Morey, G.B., compiler, Preliminary bedrock geologic map of the Kinney quadrangle, St. Louis County, Minnesota: Scale 1:24,000.

REGIONAL HYDROGEOLOGIC ASSESSMENTS


RHA 5, Pt. A 1999 Harris, K.L., project manager, Regional hydrogeologic assessment: Quaternary geology—Otter Tail area, west-central Minnesota: 2 pls.
PLATES: 1, Harris, K.L., and Knaeble, A. R., Surficial geology, scale 1:200,000;  
2, Harris, K.L., Knaeble, A.R., Berg, J.A., Quaternary stratigraphy; scale of 
lithostratigraphic map on plate, 1:400,000.

## REPORTS OF INVESTIGATIONS

<table>
<thead>
<tr>
<th>Number</th>
<th>Year</th>
<th>Authors</th>
<th>Title</th>
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<tbody>
<tr>
<td>1</td>
<td>1963</td>
<td>Sims, P.K., and Austin, G.S.</td>
<td>Geologic interpretation of magnetic map of McLeod County, Minnesota: 7 p., 2 pls. in pocket.</td>
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<tr>
<td>2</td>
<td>1963</td>
<td>Austin, G.S.</td>
<td>Geology of clay deposits, Red Wing area, Goodhue and Wabasha Counties, Minnesota: 23 p., 1 pl. in pocket.</td>
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<td>4</td>
<td>1965</td>
<td>Sims, P.K., Austin, G.S., and Ikola, R.J.</td>
<td>Interpretation of Lake Washington magnetic anomaly, Meeker County, Minnesota: 13 p., 1 pl. in pocket.</td>
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<td>5</td>
<td>1964</td>
<td>Sloan, R.E.</td>
<td>The Cretaceous System in Minnesota: 64 p., 2 pls. in pocket.</td>
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<tr>
<td>7</td>
<td>1967</td>
<td>Morey, G.B.</td>
<td>Stratigraphy and petrology of the type Fond du Lac Formation, Duluth, Minnesota: 35 p.</td>
</tr>
<tr>
<td>8</td>
<td>1968</td>
<td>Hanson, G.N.</td>
<td>K-Ar ages for hornblende from granites and gneisses and for basaltic intrusives in Minnesota: 20 p.</td>
</tr>
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<td>12</td>
<td>1970</td>
<td>Austin, G.S.</td>
<td>Deep stratigraphic test well near Hollandale, Minnesota: 52 p.</td>
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<td>15</td>
<td>1976</td>
<td>Goebel, J.E., Quaternary geologic map index of Minnesota: 22 p., 1 pl. in pocket.</td>
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<td>18</td>
<td>1978</td>
<td>Mossler, J.H., Cedar Valley Formation (Devonian) of Minnesota and northern Iowa: 44 p., 2 pls. in pocket.</td>
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<tr>
<td>21</td>
<td>1978</td>
<td>Morey, G.B., Lower and Middle Precambrian stratigraphic nomenclature for east-central Minnesota: 52 p., 1 pl. in pocket.</td>
<td></td>
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<tr>
<td>22</td>
<td>1979</td>
<td>Kanivetsky, R., Regional approach to estimating the ground-water resources of Minnesota: 13 p.</td>
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<td>26</td>
<td>1982</td>
<td>Green, J.C., Geology of the Milepost 7 area, Lake County, Minnesota: 12 p.</td>
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<td>29</td>
<td>1984</td>
<td>Jones, N.W., Petrology of some Logan diabase sills, Cook County, Minnesota: 40 p.</td>
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**CONTENTS:** Ojakangas, R.W., and Weber, R.E., Petrography and paleocurrents of the lower Proterozoic Sioux Quartzite,

PLATE 1: Geologic maps of the north limb, Cottonwood County basin, Jeffers-Comfrey area, Minnesota—A. Geologic map of the Precambrian rocks; B. Outcrops of Sioux Quartzite and observed paleocurrent directions: Scale 1:48,000.

33 1985 Mossler, J.H., Sedimentology of the Middle Ordovician Platteville Formation, southeastern Minnesota: 27 p.


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