



UNIVERSITY OF MINNESOTA
TWIN CITIES

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Minnesota Geological Survey
LIBRARY

May, 1979

MGS NEWSLETTER

This issue of the newsletter leads off with a repeat of the recent announcement to the staff by Dr. Matt Walton:

"Professor S.S. Goldich, whose distinguished career in Minnesota geology is truly legendary, has been appointed by the Regents as Adjunct Professor of Geology with assignment to the Minnesota Geological Survey. He will serve without compensation except for grants and other outside-funded projects, but we welcome him as a regular member of our staff and expect to develop some important research in which he will participate."

RESEARCH GRANTS AND CONTRACTS

Last week the State Legislature approved the funding of several of our projects, listed in the April Newsletter as pending:

1. Evaluation of geophysics program in Minnesota	LCMR	\$750,000
2. Data bank of water well logs	LCMR	180,000
3. Urban geology of the Twin Cities	LCMR	100,000
4. Southeastern Minnesota ground-water contamination	LCMR	76,000

Other legislative action included the approval of our State Special appropriate of \$501,000 per year for each of the two years. The additional award of \$192,000 for drilling was not approved in this session.

The contract for a "Hydrologic model of the Twin Cities metropolitan area" was finally approved in late May by the Twin Cities Metropolitan Council and the University's Office of Research Administration.

Our first income on the project, "Geologic analysis of the pipeline route in southern Minnesota," is expected before the end of May. A budget of \$26,466 for the period April 1 - September 30, 1979, has been approved by DNR.

OTHER PROJECTS AND ACTIVITIES

1. ✓ COSUNA (Correlation of Stratigraphic Units of North America). The survey has been very active in this Committee, representing the Northern Mid-Continent Region (Minnesota, Wisconsin, Upper Michigan, part of South Dakota). Matt Walton is the official representative, with the work being done by G.B. Morey and Doug Bergstrom. Doug attended a recent meeting of this group in Denver and presented the Survey's progress on COSUNA. It turns out that MGS is well ahead of most, if not all, other regional groups in assembling stratigraphic charts and columns of our respective region.

2. Precambrian Stratigraphy of the Lake Superior Region: Dr. G.B. Morey, with Drs. S.S. Goldich (U.S. geological Survey), and W.R. Van Schmus (University of Kansas) have completed a chronometric correlation chart of Precambrian rocks in the Lake Superior region as part of a [USGS Subcommittee on Precambrian Stratigraphy] project in the United States and Mexico. The chart and a somewhat too long paper summarizing the geology of the Lake Superior region are currently in editorial review. The results of their study, together with those from other parts of the United States and Mexico, will be published in Economic Geology late this year.

The working group for the United States and Mexico also is considering various schemes to subdivide the Precambrian into useful chronostratigraphic units. It is probable that the results of these considerations will be formally submitted to the Subcommittee on Precambrian Stratigraphy when it meets in Duluth next ✓ September.

3. Drilling Program in Scott County. Two holes were drilled in May and two more are planned for June in areas of geological significance (Belle Plaine fault, for example), in a cooperative project between MGS and the USGS - St. Paul. The total cost to MGS was about \$10,000, with an additional \$7,000 coming from USGS.

4. COCORP (Consortium for Continental Reflection Profiling) personnel from Cornell University began work in Minnesota in late May and will take about two months to complete a line across the central part of the state. The consortium is headed by Cornell University geophysicist S. Kaufman. Five vibrator trucks generate seismic waves, and geophones receive the wave returns. Crustal information to depths of 40 miles is anticipated.

5. Geologic Setting of Peat in Aitkin and Carlton Counties. Dr. Howard C. Hobbs is senior investigator of this project, which is being done in cooperation with DNR. It was begun last summer in Aitkin County and has already resulted in a county Quaternary map which is about to be released by DNR as an open-file map. Howard has written an accompanying text that might be used as a basis for publishing the map in a Survey series.
6. Gravity Survey of Minnesota. Dr. Val Chandler is coordinating the continuation of a gravity survey in the state. Two students from Northern Illinois University started field work in mid-May, and two additional people will begin in mid-June. This project will eventually provide gravity measurements at a 1-mile grid over essentially the entire state.
7. Institute on Lake Superior Geology. Several MGS staff authored or co-authored papers presented at the meeting in Duluth recently, or at the regional meeting of GSA. Drs. Morey and Southwick directed wet, but well attended, field trips, and Jim Poppe staffed a popular MGS exhibit where more than \$1,000 was collected for sales of MGS publications.
8. U/Th Disequilibrium Laboratory. Rich Lively, who has been analyzing speleothem material, is expanding activities to include samples from Death Valley, California, if a proposal submitted recently to NSF is funded. Rich and Roger Hooke have teamed up on a project that could resolve a disagreement between dates based on U-series techniques and those based on C-14 studies and geomorphic evidence and perhaps improve on the knowledge of Late Wisconsinan and Holocene tectonic deformation in Death Valley.

GRANTS-IN-AID

A total of eleven grants-in-aid (listed below) have been approved for the 1979 spring and summer and, in some cases, the 1979-80 school year. The total of all awards, excluding Saul Aronow's, is nearly \$8,100, with a range from \$225 to nearly \$1,300 for individual recipients. Saul's work is being supported on an actual-cost basis. An additional proposal by a student from Carleton may yet be approved.

The grant-in-aid program has been a very successful one for the Survey, resulting in additional geologic information that we would normally not gain under our usual project objectives using current staff.

George J. Dacre, University of Missouri - Columbia: Petrology of Lower Precambrian gneisses, east-central Minnesota. (Adviser, Glen Himmelberg).

Dion Hienz and James Kocher, Beloit College, Beloit, Wisconsin: Continuation of the geologic study of the Fourtown Lake quadrangle, Lake and Cook Counties, Minnesota. (Adviser, H.H. Woodard).

Arthur R. Norton, University of Minnesota - Duluth: Quaternary geology of the Itasca and St. Croix moraines in north-central Minnesota. (Adviser, C.L. Matsch).

David J. Stone, University of Minnesota - Duluth: Petrology and sedimentary facies of the lower Galena Formation (Ordovician) in southeastern Minnesota. (Adviser, D.G. Darby). (This proposal will be supplemented by additional work on the Prosser member.)

David A. Bredehoeft, University of Minnesota - Duluth: Archean petrology and structural geology of the Knife, Amoeba, and Little Knife Lakes area, eastern Vermilion district, in northeastern Minnesota. (Adviser, R.W. Ojakangas).

Timothy Flood, University of Minnesota - Duluth: Structure and petrology of the Archean rocks of the East Knife, Cypruss, and Hanson Lakes area, BWCA, eastern Vermilion district, Minnesota. (Adviser, R.W. Ojakangas).

Shoa Motamedi, University of Minnesota - Duluth: Structure and petrology of Keweenaw lava flows in the City of Duluth, Minnesota. (Adviser, J.C. Green).

Barry Goldstein, University of Minnesota - Minneapolis: Fan-shaped drumlin fields of central Minnesota - Wadena and Pierz fields. (Adviser, H.E. Wright, Jr.).

Timothy B. Marshall, University of Wisconsin - Milwaukee: Potential sites for compressed air energy storage. (Adviser, H.J. Pincus).

Mary Savina, Carleton College, Northfield, Minnesota: Glacial deposits of Dakota County.

Saul Aronow, Lamar University, Beaumont, Texas: Quaternary geology of Dakota County.

PUBLICATIONS

1. MGS Information Circular 15, "Earth Science Educational Materials for Minnesota," was published in May as an aid to earth science teachers in the state - It was compiled by Nancy Balaban and Lucinda Hruska-Claeys.
2. An explanatory text to accompany MGS State Map Series S-2, "Hydrogeologic Map of Minnesota, Bedrock Hydrogeology," was published at the end of May. Roman Kanivetsky authored the map and he and Matt Walton authored the explanatory text.

STAFF

Katherine Hedin (pronounced Hed-een, with accent on last syllable) has accepted the position as our new librarian, replacing Nancy Pineles who will leave the last few days of June. Katherine will start on June 11, providing overlap time with Nancy in order to gain a better handle on how the library operates. Katherine has a master's degree in library science and is presently employed in the Law Library at the University.

OTHER

1. The University's Office of Research Administration has advised that investigators should allow plenty of lead time to submit proposals to ORA well in advance of sponsor deadlines. Proposals are routinely sent by first class mail unless a next-day deadline is in sight. In the latter case, express mail is used, supposedly guaranteeing delivery at the sponsoring agency within 24 hours. However, recent experience has shown that the latter system can fail and even first class delivery often takes longer than the three days anticipated. The message is clear -- finish your proposals well ahead of a deadline, allowing time within the Survey for review, rewriting, typing, drafting of illustrations, etc., processing time at ORA, and time in mailing.
2. Our trusty secretarial staff has raised the ever-present difficulty of trying to assign project money to telephone charges. Too many long-distance calls are being made without a corresponding charge slip turned in to our secretaries. See Jeanne or Linda about how the system works if you are not sure. Now that most of us have private lines to use for outgoing calls, they know who the culprits are from the information given on the monthly telephone statements. By reassigning charges to projects we can ease the strain on our State Special account.
3. Plotting scales were purchased recently for those who work on maps and need conversion scales for plotting and measuring purposes. We have three each of 6-inch scales at 1:24,000 and 1:62,000, and three each of 12-inch scales at the same ratios. Betty Keeler is responsible for their care.

4. The Map-o-Graph is back in service, thanks to the expert carpentry and fortitude of Larry Batten.

5. Effective July 1, 1979, mileage rates for the use of personal cars will be increased to 17 cents.

6. With a little luck and planning, a real MGS Newsletter will be attempted as a means of reporting on the 1978-79 fiscal year (July 1 - June 30). We will probably include project and grant information, lists of publications, staff roster, and the usual things that appear in Survey newsletters or annual reports. Other ideas for inclusion are welcome. The Newsletter might be similar to the one that came out annually for some years and then expired about 1972.

Staff activities will probably be included. Please list your publications, papers presented at meetings, committee activities, etc. for the period July 1, 1978 - June 30, 1979, and turn them in to John Splettstoesser as soon as possible. List publications and papers for both MGS work and extracurricular work.