I.A.M.G. News Letter

Mailing Woes

You may have noticed that MATHEMATICAL GEOLOGY and COMPUTERS & GEOSCIENCES are slightly late in arriving this year (like about six months!). Allow me to offer a *mea culpa* (accompanied by three strokes to the breast) and a few words of explanation.

Since our Association is strongly committed to the use of computers in research, it seemed fitting that our membership lists be converted to machine-readable form and placed in our local computer. I casually assigned one of the KGS software people and my research assistant to the design and implementation of a data storage, editing, and retrieval program appropriate for the membership and invoicing lists of a small, forward-looking society using a small, forward-looking minicomputer system.

Approximately three months later I knew far more about data storage and retrieval than I cared to know, and had learned of several quaint interactions that can occur with random access procedures when using minicomputers. My research assistant develops a nervous tremor at the sight of fan-fold paper, and the software heavy no longer speaks to me. (However, they were successful. The results of their endeavor will be presented in the paper *A computer aid to the distribution of geologic publications* by J.A. DeGraffenreid and H.W. Cable, to be given at the Geoscience Information Society session at GSA in Seattle.)

Automated at last, the list of paid-up members for 1977 was sent to Plenum Publishing Corp. in mid-June, fully four months late. With restrained "tsk-tsk," they promptly sent the print-out to a computer service bureau to install in their automated mailing and billing program. This was followed in short order by a power failure, a disc head crash, and complete loss of the entire data file. By this time, the original dog-eared print-out was somewhere in the U.S. mails between the service bureau and the publisher. July and August were devoted to sorting out the wreckage (which affected not only our journal, but also other publications issued by Plenum). Finally, Nos. 2, 3, and 4 of Volume 9 were shipped in a bundle to all paid-up members who receive MATHEMATICAL GEOLOGY (No. 1 had been sent out automatically to all 1976 members), and the two remaining numbers should be out on schedule.

Throughout all of this, Pergamon Press was sitting patiently at Oxford waiting for the list of subscribers to COMPUTERS & GEOSCIENCES. They promptly mailed out all the requisite issues when the list arrived in late June, plus a few unsolicited copies of Computers & Electrical Engineering. (Of course, they had their real troubles last year when Headington Hill Hall burned down, along with the galley proofs for most of V. 2 of COMPUTERS & GEOSCIENCES!)

Everything should now be ticking along satisfactorily, in the best automated fashion. Both journals have now, in theory, been mailed to all of the appropriate recipients, and everything should be sweetness and light in the future. However, to help insure that this happens, this issue of the News Letter contains your 1978 DUES NOTICE. Please help us keep ahead in this nanosecond modern world by sending in your dues now!

Cao Tho Trang Appointed

The Kansas Geological Survey announces the appointment of M. Cao Tho Trang as Visiting Research Scientist for 1977-78. He replaces Dr. Allen Cook who returns to his position as Professor of Geology, Wollongong University, Australia. M. Cao is Project Chief with the Bureau de Recherches Géologiques et Minières (BRGM) in Orleans, France, where he is designing and directing the development of an automated geological map production system. While at Kansas, M. Cao will conduct research in the management of digitized cartographic data bases and in automated cartography and spatial analysis.

IAGD

An International Conference of Geological Information will be held April 10-12, 1978, at Imperial College, London. The program will include sessions on the history and current status of geoscience documentation; publishing and editing; retrieval; specialized documentation; and international exchange. A proposal will be made to establish an International Association for Geological Documentation: Conference fee is £15; accomodation at Imperial College is £27 for four nights. North and South American residents should correspond with Dederick C. Ward, University Libraries, Univ. Colorado at Boulder, Boulder, CO 80309 USA; others should write to International Conference of Geological Information, c/o Palaeontology Library, British Museum (Natural History), Cromwell Road, London SW7 2BD, UK.

NEWSLETTER EDITOR: JOHN C. DAVIS

KANSAS GEOLOGICAL SURVEY, 1930 AVENUE "A" CAMPUS WEST
UNIVERSITY OF KANSAS LAWRENCE, KANSAS 66044, USA

Editor's Note: Harry M. Parker, Mining Geological Specialist for Fluor Utah, Inc., recently participated in a technical exchange of mining engineers with the People's Republic of China. Following is part of his report on the exchange.

Geostatistics in China

Upon arriving in Peking, I was informed that instead of giving two three-hour seminars on mining and exploration geostatistics, I would be giving a total of eight three-hour seminars! These were held in a hot, humid building with small rooms, and eight to ten seminar participants in each room. The participants were mostly from the China Metal and China Coal Societies, although a few were from mine design institutes and mining districts.

The Chinese informed me that they had just begun to study and apply geostatistics and had read the works of Matheron, Koch and Link, Griffiths, Krumbein, and Davis. Their geomathematicians gave the impression that they were more academically oriented than applied, possibly due to lack of large computers. However, they were definitely interested in applying geomathematical methods in the mining area. The level of mathematical and geological competence of their scientists was high.

Seminar participants were very grateful to receive the articles, books and tables which various persons furnished. The Chinese societies try to keep up with western literature as best they can, but resources apparently are limited. Workers had heard of Kriging, but not the developments on disjunctive Kriging and conditional probability distributions made in the last two years. The Chinese are very interested in mining and exploration geostatistics and would welcome more technical exchanges on the subject.

-Harry M. Parker

Correction

In News Letter No. 13, the FORTRAN package ORIENT was described as being available from Prof. Waldo Tobler. This is incorrect: ORIENT is available from Prof. Duane Marble at the Geographic Information Systems Laboratory, State University of New York at Buffalo Buffalo, NY 14222 USA.

Note

In response to all those humorless souls who could not find the 1977 dues notice because News Letter No. 11-12 was printed in light green ink on lighter green paper, this issue is printed in jet black on stark white. No excuse for not sending in your dues!

Seminar on Data Base Management in Geology
October 27, 1977, Syracuse, New York

To precede the 1977 Geochatauqua, October 28-29, 1977, at the Department of Geology, Syracuse University. Enrollment limited to 25 persons, so register as soon as possible. Contact: John M. Cubitt, Dept. Geology, Syracuse University, Syracuse, NY 13210 USA (ph. 315-423-4706 or 315-423-2672).

Symposium on Computing Methods in Geophysical Mechanics
December 1977, Atlanta, Georgia

Symposium to encourage interaction between specialists in applied mechanics and geophysics. Papers are sought in oceanography, seismology, meteorology, atmospheric science, etc., which deal with computational methods of solution. Contact: Richard P. Shaw, Dept. Engineering Science, State University of New York at Buffalo, Buffalo, NY 14214 USA.

Short Course on Probability Methods in Oil Exploration
December 4-9, 1977, Snowmass, Colorado

A school and workshop covering the theory and application of systematic probability methods of exploration for oil and gas. This is a repeat of an earlier course held at Snowmass in September which was oversubscribed. Contact: Probability Short Course, Stanford University P.O. Box 8888, Stanford, CA 94305 USA.

Session on Computer Applications, American Association of Petroleum Geologists
April 9-12, 1978, Oklahoma City, Oklahoma

Meeting to include papers that are primarily geological but use computer techniques. Topics include interpreted gravity-magnetics, seismic, velocity, and geological data in exploration and production of oil, gas, coal, oil shale, thermal energy, and non-energy minerals. Contact: Mark McElroy, Phillips Petroleum Co., 252 Frank Phillips Bldg., Bartlesville, OK 74004 USA.

Shortcourse on Geostatistical Ore Reserve Estimation
April 10-14, 1978, Lulea, Sweden

The five-day shortcourse, taught by Michel David of the Ecole Polytechnique, Montreal, will illustrate how geostatistics may help assess the value of an ore body, and may be used for short and long range planning. The course requires active participation of students and includes lectures and exercises with opportunities for discussion. All registrations should be received by March 15, 1978. Sponsored by the Geological Survey of Sweden, who reserve rights of cancellation in the event of insufficient

enrollment. Contact: Lennart Lindqvist, Geological Survey of Sweden, Porsövägen 1, S-951 90 Lulea, Sweden.

9th International Congress of Carboniferous Stratigraphy and Geology
May 21-25, 1979, Urbana, Illinois

With associated meetings and field trips in many parts of the USA. Contact: Ellis L. Yochelson, IX-ICC 1979, Museum of Natural History, Washington, DC 20560 USA.

Best Paper Award

The IAMG Best Paper Award for 1976 goes to M. W. Gilliland for her paper *A geochemical model for evaluating theories on the genesis of Florida sedimentary phosphate deposits* which appeared in MATHEMATICAL GEOLOGY, V. 8, No. 3. Ms. Gilliland will receive a year's free subscription to MATHEMATICAL GEOLOGY as her prize.

Positions Available

Economic Geologist and/or Minerals Economist with strong backgrounds in computer usage and data base management. U.S. citizenship required. Contact: Harry M. Parker, Fluor Utah, Inc., 177 Bovet Road, San Mateo, CA 94402 USA (ph. 415-574-1111).

What is the IGCP?

The International Geological Correlations Program is a long-term international project with the objective of improving man's environment and his search for natural resources. The program began in 1973 after preliminary meetings in Budapest (1969) and Paris (1971).

The IGCP "is concerned with correlation in time, in space and in the relationships of geological phenomena." Areas to receive special emphasis are: (1) ordering the past: refining the geological calendar; (2) in the beginning: evolution of the ancient crust; (3) man's home: the geological environment; (4) man's needs: energy and minerals. Obviously, the objectives of IGCP are broader than the term correlation as interpreted by most geologists. Perhaps the "C" in IGCP would better be interpreted as cooperation.

The objectives of IGCP will be met by scientific research concentrated in four divisions: (1) time and stratigraphy; (2) major geological events in time and space and their implications in environmental processes; (3) distribution of mineral deposits in space and time and relation of the processes of ore formation to other events in Earth history; (4) quantitative methods and data processing in geological correlation. Activities in Division 4 are of special interest to IAMG members.

An important aspect of the program is assistance to developing countries by involving geologists on a worldwide basis in the solution of fundamental problems related to geological resources. Cooperation will strengthen ties between geologists in developing countries and geologists in the industrialized nations.

The IGCP is a joint venture of IUGS and UNESCO. National activities are monitored by a National Committee or official contact; in 1976 there were 57 National Committees and 41 official contacts. Individuals submit research proposals to the international body through their National Committees, or through an international association affiliated with IUGS. Scientific merits of proposals are appraised by the committees making recommendations to the IGCP Board.

A research proposal may be accepted, rejected, modified, or merged with an existing project. Once accepted, the project leader has available limited funds from IGCP for working group meetings. Funding for the research itself, however, must be obtained by project members through their national funding agencies. Some countries support the IGCP, through individual grants to project leaders and working group members, better than others. There are currently 61 projects approved and active.

The Scientific Committees meet in January to review new proposals and progress on projects in their Division. Their evaluations are submitted to the Board, which meets in March. Appropriate action is taken by the Board as required.

The National Committees are responsible for maintaining contact with the international body, fostering exchange between national groups, encouraging research where needed, and assisting in dissemination of the results. Many of the Committees publish a newsletter or annual report, organize field excursions, and sponsor symposia.

The two projects in Division 4 are: (98) Standards for computer applications in resource studies--A.L. Clark (USGS, Reston, Virginia), and (148) A new method of quantified biostratigraphic correlation--J.C. Brower (Syracuse University, Syracuse, New York). Project 98 was approved in 1975 and Project 148 in 1976. In addition to reviewing the progress of these two projects, Scientific Committee 4 reviews all new proposals and annual reports of projects for possible statistical and computer applications. The Committee presently includes D.F. Merriam as representative of IAMG and W.W. Hutchison as representative of COGEODATA.

Additional information on the IGCP can be obtained by writing me or Dr. E. von Braun,

IGCP Secretariat, Division of Earth Sciences, UNESCO, Place de Fontenoy, 75700 Paris, France. -D. F. Merriam

Penrose Conference on Geostatistics and Hydrogeology

From August 29 to September 2, 1977, seventy hydrologists, hydrogeologists, geostatisticians and mathematicians met at a Penrose Conference at the Harrison Hot Springs Hotel near Vancouver, British Columbia, Canada, to discuss geostatistical concepts and stochastic methods in hydrogeology. The conference examined the applicability of geostatistical methods to hydrogeological modeling. Discussions focused on hydrogeological parameters in heterogeneous geological systems, stochastic models in hydrogeology including Monte Carlo simulation and stochastic differential equations, and methods of model calibration under uncertainty. Much lively debate centered around the "worth" of data in groundwater/surface water management problems, the theory of regionalized variables as applied to groundwater systems, and the meaning of uncertainty in hydrologic practice. As with all Penrose Conferences, there will be no printed proceedings. A steady flow of publications should emerge from the discussions, however, and there is little doubt that the application of geostatistics to hydrology is assured. Further details about the conference may be obtained from R. Allan Freeze, Department of Geological Sciences, University of British Columbia, Vancouver, BC, CANADA. -R. B. McCammon

Petroleum Data System Advisory Committee

An advisory committee has been established to consider how PDS can better serve the petroleum industry, and to solicit advice for improvement of the Petroleum Data System. Representatives of the Federal Power Commission, U.S. Geological Survey, Bureau of Mines, ERDA, Federal Energy Administration, the oil industry, the Oklahoma and Kansas Geological Surveys, the Interstate Oil Compact Commission, the International Oil Scouts Association, General Electric Corporation, and the University of Oklahoma are included on the committee. Topics to be considered include data standards, applications, data acquisition, and PDS/GE management. For further information, contact The University of Oklahoma Information Systems Programs, 1808 Newton Drive, Room 116, Norman, Oklahoma 73019.

New Books of Interest

David, Michel, Michel Dagbert, and Yves Beauchemin, 1977, *Statistical Analysis in Geology--Correspondence Analysis Methods:* 60 p., paperback, issued as V. 72, No. 1 of the Colorado School of Mines Quarterly, Golden, Colorado 80401.

Davis, John C., 1977, *Statistica i Analiz Geologich eskikh Dannwikh:* 571 p., hardbound, translation issued by Izdatelstvo "MIR," Moscow.

Guillaume, André, 1977, *Analyse des Variables Regionalisees:* 180 p., paperback, issued by Doin Editeurs, 8, Place de l'Odéon, 75006 Paris.

Guillaume, André, 1977, *Introduction à la Géologie Quantitative:* 200 p., hardbound, issued by Masson S.A., 120 Bd. Saint-Germain, 75280 Paris.

Harbaugh, John W., John H. Doveton, and John C. Davis, 1977, *Probability Methods in Oil Exploration:* 269 p., hardbound, issued by Wiley-Interscience Publications, 605 3rd Avenue, New York, New York 10016.

Mather, Paul M., 1976, *Computational Methods of Multivariate Analysis in Physical Geography:* 532 p., hardbound, issued by John Wiley & Sons Ltd., Baffins Lane, Chichester, Sussex PO19 1UD, England.

Merriam, Daniel F. (ed.), 1977, *Capture, Management and Display of Geological Data:* 96 p., paperback, issued as V. 2, No. 3 of Computers & Geosciences, Pergamon Press, Headington Hill Hall, Oxford OX3 0BW, England

Rogers, David F., and J. Allan Adams, 1976, *Mathematical Elements for Computer Graphics:* 239 p., paperback, issued by McGraw-Hill Book Co., 330 West 42nd St., New York, New York 10036.

Taylor, Peter J., 1977, *Quantitative Methods in Geography:* 386 p., hardbound, issued by Houghton Mifflin Co., 53 West 43rd St., New York, New York 10036.

Williams, W. T. (ed.), 1976, *Pattern Analysis in Agricultural Science:* 331 p., hardbound, issued jointly by CSIRO, 372 Albert Street, East Melbourne, Australia 3002, and Elsevier Scientific Publ. Co., 335 Jan van Galenstraat, P.O. Box 211, Amsterdam, The Netherlands.

"This must be Fibonacci's."
American Scientist

THE INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY

"The International Association for Mathematical Geology is affiliated with the International Union of Geological Sciences and the International Statistical Institute. The aim of the Association is to promote international cooperation in the application and use of mathematics in geological research and technology. This is done through the organization of meetings (commonly in association with the International Geological Congress), of field excursions, and of visits to centers of research and technology; by the issuance of publications on the application of mathematics in the geological sciences; and by cooperation with other organizations professionally concerned with applications of mathematics and statistics to the biological sciences, earth sciences, and planetary sciences....

"The IAMG accepts as members geoscientists, statisticians, and other interested individuals."

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I.A.M.G.
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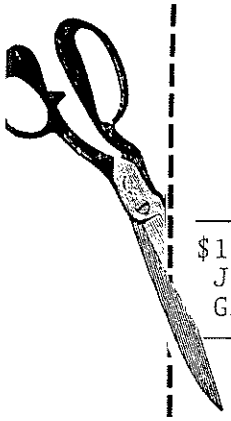
no. 14



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