

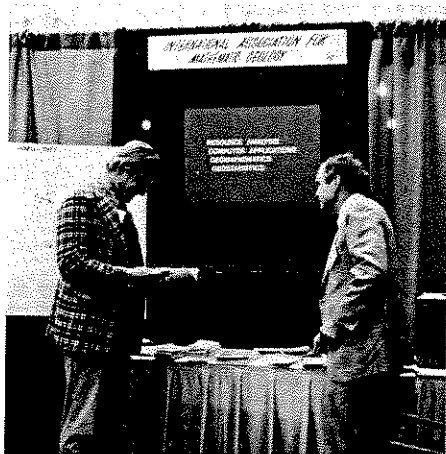
IAMG News Letter No. 15



WILLIAM CHRISTIAN KRUMBEIN MEDAL

Shown above are the obverse and reverse of the William Christian Krumbein Medal, the highest award which can be presented by the International Association for Mathematical Geology. The medal measures 10 centimeters in diameter, and contains slightly over 500 grams of bronze. It was cast at the Fonderia Marinelli in Firenze, Italy, by sculptor Abbott Pattison. Mr. Pattison, a graduate of the Yale School of Fine Art and a well-known sculptor and painter, resides in Winnetka, Illinois. The sculptor, whose home was only a few houses away from Bill Krumbein's, reports that he was especially pleased to have been commissioned to create this tribute to an old friend.

The Association has commissioned the casting of a supply of the medals for future presentation. The first Krumbein award (1976) was made to John Griffiths; the presentation ceremony will be held at a later date. The second award (1977) was to Walther Schwarzacher, whose medal was presented at the Geological Society of America meetings in Seattle.



IAMG Recruiting Effort

Dick McCammon (r.), MATH. GEOLOGY editor, puts the hard sell on John Southam (l.) in the IAMG booth at the Seattle GSA meetings in Washington. As part of the Association's drive to recruit new members, displays have been placed at the major US and Canadian geological conventions this year.



IGBA

The International Geological Correlation Project (IGCP) has approved IGBA--IGneous BASE--as its project 163. IGBA is to compile a retrospective data base for igneous petrology. Membership is open to all interested petrologists; currently there are more than 35 participants from 19 nations, and national groups have been organized in India, Italy, Yugoslavia, Spain, Turkey, and the USA. IGBA functions will include: (1) developing a common grammar and structure for data files; (2) assigning unique ID numbers for specimens and analyses; (3) assigning responsibility for coding; (4) providing current lists of data sources; (5) distributing coding forms; (6) keypunching data; (7) coordinating proofreading; and (8) distributing machine-readable copies of data files to contributors. For information, contact: Felix Chayes, Geophysical Laboratory, Carnegie Institution of Washington, 2801 Upton Street NW, Washington, DC 20008 USA.



INTERNATIONAL CONFERENCE ON

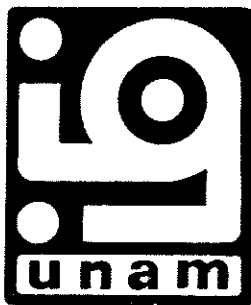
COMPUTER MAPPING FOR RESOURCE ANALYSIS

THE USE OF COMPUTERS IN THE
PREPARATION AND ANALYSIS OF MAPS
FOR PLANNING, EXPLORATION, AND DEVELOPMENT
OF NON-RENEWABLE NATURAL RESOURCES

MEXICO CITY

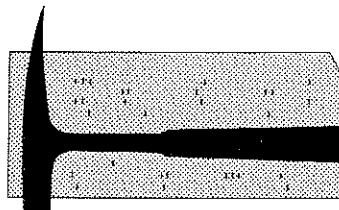
MAY 8-12, 1978

A COGEODATA Conference sponsored by the



INSTITUTO DE GEOGRAFIA (UNAM)

and



KANSAS GEOLOGICAL SURVEY

OBJECTIVES

- To promote a dialogue between specialists who map and analyze data on natural resources, and planners who need the results of these analyses
- To bring together the scientific disciplines concerned with mapping and analysis of non-renewable natural resources
- To examine the information requirements of resource managers in private business, national governments, and international agencies
- To describe the state-of-the-art of computer systems for mapping and analysis of natural resource data

The Conference will be attended by scientists who specialize in computer-aided mapping and analysis of the critical natural resources such as minerals, fuels, soils, and water. In addition to these specialists, computer scientists involved in data bank management and graphic display of such information will be in attendance. Planners and program managers from industry, government ministries, and international agencies who require factual information on these resources will be present to discuss their needs. The requirements for data displays to aid exploration, exploitation, and conservation of natural resources will be considered. Transfer of technology between disciplines and to the emerging nations will be stressed.

The INTERNATIONAL CONFERENCE ON COMPUTER MAPPING FOR RESOURCE ANALYSIS is supported by UNESCO, the United Nations Educational, Scientific, and Cultural Organization. It is co-sponsored by the INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY. Directors of the Conference are Dr. John C. Davis of the Kansas Geological Survey and Dra. Silvana L. de López of the Instituto de Geografía, UNAM.

The Conference will be held in the Central Auditorium of the Institutes of Science on the Campus of the Universidad Nacional Autónoma de México. The Registration Fee for the Conference is \$45.00 US. A limited number of grants are available to partially defray travel costs of participants. Attendance is limited and by invitation only. For application forms, write:

Dr. John C. Davis, COGEODATA Conference Chairman
Kansas Geological Survey, The University of Kansas
1930 Avenue "A", Campus West, Lawrence, KS 66044 USA.



The Geomathematics and Computer Applications Division (GCAD) of the Canadian Society of Petroleum Geologists is the Canadian Regional Organization of the IAMG. The Division holds monthly technical meetings (in Calgary), disseminates information on computer applications to geology, and reports on geomathematics and computer applications to the CSPG. Membership is open to Canadian members of the IAMG, and members of CSPG who are interested in computer applications.

Current Executive Officers of GCAD include P. J. Lee, Chairman; Robert Bolton, Vice Chairman; and Sherry Carroll, Program Director. The post of Secretary is temporarily vacant. For information on joining the GCAD and the program of technical meetings, contact:

P. J. Lee, GCAD Chairman
Home Oil Company Ltd.
2300 Home Oil Tower
324 8th Avenue S.W.
Calgary, Alberta T2P 2Z5



The Geomathematics and Computer Applications Division of the Canadian Society of Petroleum Geologists will present a special symposium at the International Conference on Facts and Principles of World Oil Occurrence. The symposium will occupy one day of the International Conference, which will be held at the Calgary Convention Centre, in Calgary, Canada, from June 26 to 28, 1978.

Keynote Speech before the General Assembly of CSPG:

The Role of Computer Systems and Geomathematics in Petroleum Exploration,
- by E. J. Klován

Symposium topics include:

Relationship between Mineral Resources and Geological Diversity,
- by J. C. Griffiths, A. T. Watson
and D. W. Minzie
Probabilistic Reserve Estimation, Taglu Gas Field, Canada,
- by R. O. Grieve and B. D. Stewart

Pros and Cons of Ziff's Law as a Resource Appraisal Tool,

- by E. C. Dahlberg
Recognition of Subtle Features in Geologic Maps,

- by J. E. Robinson and D. F. Merriam
Probability Methods and Assessment of Drilling Outcomes in Frontier Areas,

- by J. C. Davis and J. W. Harbaugh
The Practical Relevance of the Choice between a Stationary and a Nonstationary Geostatistical Model,

- by P. Switzer
Constraints in Estimating Field Sizes

- by K. J. Roy and W. A. Ross
Mineral Resource Estimation and Statistical Exploration,

- by F. P. Agterberg
An Analysis of Petroleum Discovery Data, A Forecast of the Date of Peak Production,

- by D. H. Root and E. D. Atlánasis

Panel Discussion:

Mathematics in Geoscience - A Usable Tool in Exploration?

Registration materials for those desiring to attend the International Conference on Facts and Principles of World Oil Occurrence may be obtained by writing the Canadian Society of Petroleum Geologists, 612 Loughheed Building, Calgary, Alberta, Canada T2P 1M7.



November Seminar

The GCAD will hold a one-day seminar on *Spatial Data Analysis* in Calgary next November. The seminar will emphasize practical examples from Western Canada. The time and place of the meeting will be announced later. Contact: P. J. Lee.

SPECIAL MEMO TO
CANADIAN MEMBERS OF IAMG

Please be sure to remit your 1978 dues in US dollars. Because of the differential between US and Canadian dollars, plus banking charges, the Association incurs a significant loss if Canadian dollars are accepted at par for dues and subscriptions. If you cannot send a check or money order payable in US funds, please add 12% (dues are then \$16.80, \$36.96, or \$50.40 Canadian) to your payment in Canadian funds.

EDITORS NOTE: The News Letter is a service for all members of the International Association for Mathematical Geology. Any Regional Organization may request a full page to report on its activities--just write to the Editor, Office of the Western Treasurer. Only one special page per year, please!



Krumbein Medal Awarded

Walther Schwarzacher (l.) accepts the 2nd William Christian Krumbein Medal from D. F. Merriam (r.), President of the IAMG. The medal is the highest recognition given by the IAMG, and acknowledges original contributions to the science, service to the profession, and support of the Association.

Holder of the Chair in Mathematical Geology at Queens University, Belfast, Walther is widely known for his contributions to carbonate petrology, to stratigraphic analysis, and for his applications of time series statistics to the study of geologic problems. Throughout his work, he has attempted to establish formal models of geologic processes, and to state these models in an explicit manner that permits their testing. Much of his work in this area is summarized in his recent book, "Sedimentation Models and Quantitative Stratigraphy," published in 1975 by Elsevier.

The Krumbein Medal was presented to Walther Schwarzacher on November 8, 1977, at the MGUS Symposium on Predictive Models in the Earth Sciences, during the Geological Society of America meetings in Seattle, Washington.

Help Needed!

CODATA, the Committee on Data for Science and Technology of the International Council of Scientific Unions, has a special task group on time and space dependent data. The group consists of representatives of 14 scientific disciplines charged with preparing synoptic reports on the state-of-the-art within their respective fields. Persons are now being solicited to assist with the preparation of the geological report. Especially needed are specialists to write 2- to 5-page reviews on the following topics:

Mapping and analysis of category (choroplethic) data.
 Analysis of point distributions.
 Stereological analysis.
 Analysis of lithologic successions.
 Analysis of instantaneous events.
 Storage and retrieval of data.
 Multidimensional time series.

Also needed are 2- to 4-page contributions on computer hardware for display of spatial or temporal data, and on the availability of software systems and packages. It is hoped that the first draft of the geological report can be prepared by April 1978. The final document is to be prepared by September 1978, with publication in January 1979. The ultimate objective of this effort will be to establish funded, interdisciplinary research groups working on problems of common interest in spatial and temporal analysis.

If you can assist, please contact the geology working group chairman, John C. Davis, 1930 Avenue "A", Lawrence, KS 66044 USA. Copies of the report outline and CODATA committee reports will be sent to all interested persons.



Short Courses on Probability Methods in Petroleum Exploration

- September 17-22, 1978, Houston, TX, USA
 - November 12-17, 1978, London, England
- These five-day short courses, taught by John Harbaugh, John Davis, and John Doveton, will treat all aspects of probability analysis in oil exploration. Included will be regional resource evaluation, Monte Carlo methods, mapping, multivariate analysis, and conditional analysis of plays and prospects. Participants will apply probabilistic concepts in the conduct of a simulated exploration program during workshop sessions. This is a repeat of an earlier course in which applications exceeded available space. Contact: Probability Short Course, Stanford University P.O. Box 8888, Stanford, CA 94305 USA.



IX International Conference on Cartography
 July 26-August 2, 1978, College Park, Maryland. Topics to be emphasized include automation in cartography. Contact: Ninth International Cartographic Conference, University of Maryland, University College Center of Adult Education, College Park, MD 20742 USA.

A Christmas Present to Good Little Boys and Girls...

who pay their 1978 IAMG dues! If you send in your dues NOW (or have already paid them), you will receive a free copy of Ricardo Olea's new publication, "Measuring Spatial Dependence with Semivariograms." With 30 pages of text, illustrations--and a COMPUTER PROGRAM!-- this \$3.50 volume is our absolutely free gift to you for sending in your dues RIGHT NOW!

This is an especially valuable contribution to the literature on regionalized variables, because it contains examples of semivariograms computed from real--not hypothetical--data. The data and semivariograms are shown for properties such as structural elevations, bathymetric depths, topography, magnetic intensities, and seismic reflection times. The FORTRAN IV program calculates semivariograms in a variety of ways especially useful for analysis of regionalized variables.

If you are into geostatistics, computer mapping, time series analysis, or just want a snappy-looking publication with a shiny four-color cover, you need "Measuring Spatial Dependence with Semivariograms." And all you have to do to get it is simply pay your 1978 IAMG dues PROMPTLY! To help you do this, the last page of this News Letter contains yet another copy of the DUES NOTICE. Please fill in all the appropriate blanks and return it with your check (US dollars only, please!) for the appropriate amount. Your free Christmas goodie will be sent to you upon

receipt of your dues, courtesy of the Kansas Geological Survey. Those 'specially good members who have already paid their 1978 dues will receive their publication automatically. This offer expires soon, so ACT NOW!



MGUS Symposium on Petrologic Information Systems

October 1978, Toronto, Ontario, Canada. The US Regional Organization, Mathematical Geologists of the United States (MGUS), will sponsor a symposium of invited papers on Applications of Petrologic Information Systems to Geological Problems at the Annual Meeting of the Geological Society of America (Oct. 23-26). Co-conveners are Michel David of Ecole Polytechnique and Felix Mutschler of Eastern Washington University. The half-day symposium emphasizing applications will be accompanied by a poster session which will allow geologists to actually use (via remote terminals) some of the existing petrologic information systems. Contact: Felix Mutschler, Dept. of Geology, Eastern Washington University, Cheney, WA 99004, USA or Michel David, Dept. de Genie Mineral, Ecole Polytechnique, Montreal, Quebec H3C 3A7 Canada.

PETROBRAS/KGS Coop Project

Fred Laier of PETROBRAS will spend the spring semester at the Kansas Geological Survey as Visiting Industrial Scientist. He will work on systems level computer programming for geologic applications. Laier is the first in a series of Brazilian geologists who will come to the Kansas Survey.

The I.A.M.G. News Letter is made possible by a grant from the Kansas Geological Survey.

I.A.M.G.
KANSAS GEOLOGICAL SURVEY
1930 Avenue "A" Campus West
University of Kansas
Lawrence, Kansas 66044

No. 15



2nd Notice !

INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY

OFFICE OF THE WESTERN TREASURER

IAMG DUES FOR 1978

LOOK!

\$15.00 US (Includes JOURNAL OF MATHEMATICAL GEOLOGY)	•	\$33.00 US (Includes COMPUTERS & GEOSCIENCES)	•	\$45.00 US (Includes MATHEMATICAL GEOLOGY and COMPUTERS & GEOSCIENCES)
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ENCLOSED ARE MY 1978 DUES IN THE AMOUNT OF \$_____. *see below

[Complete following. Please PRINT
all information.]

(title--Mr., Dr., etc.)

(new member write "NEW")

(name)

(organization)

(street address or postal box)

(city)

(state or province)

(country)

(postal or ZIP code)

• Back issues of the JOURNAL OF MATHEMATICAL GEOLOGY may be ordered directly from J.S. Canner & Co., 49-65 Lansdowne Street, Boston, Mass. 02215 USA at the Special Member's Rate of \$12/vol. (Vol. 1 is \$6), plus postage.

• Back issues of COMPUTERS & GEOSCIENCES may be ordered from the publisher, Pergamon Press Ltd., Headington Hill Hall, Oxford, OX3 0BW, England at the Special Member's Rate of \$30/vol., plus postage.

**Members outside U.S.--Want to receive IAMG NEWS LETTER sooner? Add \$2.50 for Airmail postage. (Airmail shipment of the journals can be arranged upon special request, but the postal charges are very high.)*

The IAMG, which strives to promote the development and application of quantitative methods in the Earth sciences, presently includes over 380 members. It is an affiliate of the International Geological Union and the International Statistical Association. IAMG Regional Organizations are also affiliated with numerous national societies, including the Geological Society of London, the Geological Society of America, and the Canadian Society of Petroleum Geologists.

MAIL YOUR CHECK, MONEY ORDER, OR
UNESCO COUPONS, TOGETHER WITH THIS
FORM, TO:

DR. JOHN C. DAVIS, WESTERN TREASURER
INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY
1930 AVENUE "A", CAMPUS WEST
LAWRENCE, KANSAS 66044 U.S.A.