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GIS OFFICERS

The new GIS Executive Committee for 1974 is:

PRESIDENT, Dr. Evelyn Sinha, Principal Investigator, Ocean Engineering Information Service, P.O. Box 989, La Jolla, Calif. 92037 (714/454-1922)

VICE-PRESIDENT and PRESIDENT-ELECT: Jack L. Morrison, Project Director, Oil Information Center, Univ of Oklahoma Research Institute, Norman, Okla. 73069 (405/321-6812)

SECRETARY: Ruth L. Keefer, Reference Librarian, Technical Information Section, Field Research Laboratory, Mobil Research and Development Corp., 3600 Duncanville Road, Dallas, Tex. 75211 (214/331-6531, ext. 524)

TREASURER: Aphrodite Mamoulides, Head Librarian, Shell Development Co., P. O. Box 481, Houston, Tex. 77001 (713/667-5661, ext. 633)

PAST PRESIDENT: Hartley K. Phinney, jr., Supervisor, Technical Information Center, Chevron Oil Field Research Co., P.O. Box 446, La Habra, Calif. 90631 (213/691-2241, ext. 2366)

The new officers assume their positions on 1 Jan 1974.

1973 GIS ANNUAL MEETING in DALLAS, Tex.

The 8th Annual Meeting of the Geoscience Information Society was held 12-13 November 1973 in Dallas, Tex., in conjunction with the annual meetings of the Geological Society of America (GSA) and its associated societies. Chairman of the GIS Annual Meeting was Vice-President **Marjorie W. Wheeler** (Lamar Univ, Beaumont, Tex.), who arranged for a technical session, a symposium, the annual luncheon and annual business meeting, an open-house cocktail party, and informal visits to the libraries at Southern Methodist Univ.

The papers presented at both the technical session and the symposium will be edited by Mrs. Wheeler and will be published sometime in 1974 as volume 4 of the *GIS Proceedings*; the title will be *Geoscience information*. All GIS members will receive complimentary copies of the proceedings. Price and date of publication will be announced later.

Summaries of each event at GIS-73 are given below.

GIS ANNUAL LUNCHEON and BUSINESS MEETING

The Annual Luncheon was held Monday noon, November 12, at Brennan's restaurant in Dallas. There were 45 GIS members and guests present for an excellent chicken repast arranged by Margaret McLean (Atlantic Richfield Co., Dallas). President Hartley K. Phinney commented that the luncheon was the most outstanding one in the history of GIS, and asked for and received a round of applause for Mrs. McLean.

The Annual Business Meeting immediately following the luncheon was convened at Brennan's at 1:35 p.m. by President Phinney. The more than 40 GISers in attendance represented possibly the finest turnout for a GIS business meeting.

The minutes of the 7th Annual Business Meeting of GIS (held 13 Nov 1972 in Minneapolis, Minn.) were read by Secretary Ruth L. Keefer and approved. Treasurer Janet Meserve gave her report (see page 5 of this newsletter for the GIS financial statement); she indicated that the Society opened a savings account (\$700.00) for the first time, in order to obtain a higher return on GIS funds. The report was approved by the members.

Vice-President Marjorie W. Wheeler, chairman of GIS-73, reported briefly on the GIS technical meetings to be presented the following day, and thanked those who worked on her committee, namely, Henry F. Yarbrough, Aphrodite Mamoulides, Margaret McLean, and Beverly J. Holmes.

GIS Newsletter. Editor Robert (Skip) McAfee, jr. (American Society for Information Science) reported that 5 issues have been published thus far during 1973 (February, April, June, August, October), totalling 40 pages, with a sixth issue scheduled in December. This year marked the first time that the newsletter was issued on a regular, bi-monthly schedule. Costs for printing, collation, and mailing of the first five issues were \$418.84. Printing costs have increased, but overall mailing costs were less due to piggybacking the newsletter with other GIS mailings or having various members' employers absorb the costs. There are 13 paid subscriptions (at \$10/year), including seven to foreign addresses; subscriptions could be increased five- or six-fold if a special effort were made to promote the newsletter. Response from GIS members regarding input of materials and news has been gratifying, although more interaction is desired. Assistant Editor Amy Bumberg (U.S. Geological Survey, Washington, D.C.) was acknowledged for her contributions, esp. in reviewing the geologic literature and providing bibliographic items. Mr. McAfee expressed his wish to be relieved as Editor effective at the end of 1973; after serving 8 years as Editor, he felt it was time to involve some newer members and suggested that GIS reconsider the idea of an editorial board to cover newsletter topics on a regional and topical basis. [Mrs. Regina Ann Brown, head of the Orton Memorial Library for Geology at The Ohio State Univ, has volunteered to serve as Editor of the newsletter during 1974].

Membership Committee. Committee chairman Mary Woods Scott (Geology Library, 326 Leonard Hall, Univ of North Dakota, Grand Forks, N.D. 58201) reported that some 60 letters were sent to geoscience librarians, partic. to State geological survey librarians, soliciting membership in GIS. She is just beginning to get response. One of the problems in recruiting members is obtaining the names of potential members, and distributing information on GIS to the outside world. President Phinney encouraged GISers to recruit prospective members among their work colleagues and professional associates, and reminded GISers that a new, revised brochure describing GIS is available from Mrs. Scott. Current GIS membership is now at 192, an 18% increase from 163 at this time last year.

GIS Representative to AGI Governing Board. The GIS representative to the American Geological Institute, Dr. Roy W. Graves

(Univ of Tulsa), reported that there has been a reorganization of AGI's governing structure, implementation of a new constitution, and considerable realignment of thinking with respect to the overall activities of the Institute. He mentioned AGI's financial problems. The Board is currently taking a look at various programs and priorities. Dr. Graves hoped that there will be a "more definitive objective" regarding the proposed direction of AGI in years to come.

GIS Representative to the AGI Committee on Geoscience Information. The GIS representative, John F. Price (U.S. Library of Congress), who is completing the term of the late Logan O. Cowgill, reported that the committee is "between subject studies" at this time, and will review some of the areas that were suggested when the committee was originally established in the late 1960's. There will be more to report on later. [See page 7 of this newsletter for information on Committee activities].

Constitutional Revision Committee. President Phinney reported that the proposed amendment to Article VI (Officers) of the GIS Constitution was approved by the membership in a mail ballot. The amendment provides for the Vice-President to assume the position of President-elect, effective with the election of officers to serve beginning 1 Jan 1974. Due to some problems with the wording of the amendment, as well as a need to redefine the duties of the Executive Committee, President Phinney has appointed a Constitutional Revision Committee to review the entire Constitution. The committee consists of Dederick C. Ward (Univ of Colorado), Harriet W. Smith (Univ of Illinois), Roy W. Graves (Univ of Tulsa), and Lee Swift (Geological Society of America), chairperson.

Nominating Committee. In the absence of Committee Chairman Louis I. Briggs (Univ of Michigan), President Phinney announced the results of the election of GIS officers for 1974. The winning candidates were introduced (see page 1 of this newsletter). Of the 191 ballots that were mailed, 135 were returned (71% of the membership). President Phinney commented that the heavy return indicated the great concern by, and involvement on the part of, GIS members in the Society, and the very strong slate of candidates chosen by Prof. Briggs' committee.

Publications Committee. President Phinney expressed the need for such a committee to accept standing orders and to warehouse and distribute GIS publications, preferably from a fixed address. There is a need to simplify the order fulfillment process; GIS publications are currently available from various sources, and a central dissemination point is desirable. The committee, or "publications chairman", would not be involved in editorial, compilation, policy, or publishing matters.

Circum-Pacific Energy and Mineral Resources Conference. President Phinney announced that GIS has agreed to be a "supporting society" of this Conference, to be held 26-30 August 1974 in Honolulu. The purpose of the Conference is to exchange information to aid in the search for energy and mineral resources of the circum-Pacific area. There will be approx 120 papers given, and an integrated series of maps bringing together the latest information on geologic features and mineral, geothermal, and hydrocarbon resources will be published. Michel T. Halbouty, General Chairman, was made aware of the fact that GIS does not have a member in Hawaii, but all publications of the Conference will be brought to the attention of GIS members. Joseph C. Carl (Gulf Research & Development Co., Pittsburgh, Pa.) volunteered to acquire any pertinent material presented at the Conference and to make it known to GISers.

GEO•REF. Joel J. Lloyd, director of science information at the American Geological Institute, discussed the current status of GEO•REF, the Institute's computer-based bibliographic file of the world's geologic literature. As a result of the nation's energy crisis, there is a possibility that more money or renewed money will be available to GEO•REF beyond the terminal grant from the National Science Foundation (NSF). Mr. Lloyd related that some of the money Congress will allocate for the energy crisis may go to the

Office of Science Information Service (OSIS) at NSF, and thereby to GEO•REF. In July 1973, AGI discussed with Engineering Index, Inc. (Ei) and the U.S. Atomic Energy Commission (AEC) the establishment of a mission-oriented information system on energy resources, to be operated by Ei, and with AGI and AEC contributing and having access to it. The proposal on the compilation of such an energy file is now at NSF. Mr. Lloyd briefly discussed the arrangement made with the System Development Corporation (SDC) for an on-line service to the GEO•REF data base, and urged GISers to attend the demonstration given every day by SDC at the AGI booth in the exhibit area (see also page 6 of this newsletter for information on the SDC service).

Dr. Cornelius F. Burk, Jr. (Canadian Centre for Geoscience Data) commented further on GEO•REF. He noted that GIS' substantial contribution (\$500.00 "on the barrel head") earlier in the year helped to alleviate GEO•REF's financial crisis; in fact, the GIS contribution played a "significant role" in keeping GEO•REF "alive and running" and influencing NSF to continue its support of GEO•REF by providing deficit funding during 1973 and 1974. The challenge to AGI was to reduce a deficit of about \$200,000 or \$250,000 to zero by 1 Jan 1975. The joint AGI/GSA Steering Committee was given the task of setting up a series of priorities and contingency plans, and finding increased markets. Dr. Burk said GEO•REF "will survive", but perhaps in a different or an amended form. Commenting that every cloud has a silver lining, he noted that the energy crisis may "save" GEO•REF even though we may not have lights or fuel. NSF's OSIS has been charged with actively coordinating the information services in the U.S. that have a bearing on energy: NSF is moving away from the passive role of doling out dollars to an active role in supporting research & development in the energy area. NSF wants input and decisions from the information community by "next month"; Dr. Burk views this as an acknowledgement by NSF of the importance of information as related to the energy crisis. However, he is disturbed to see the balls from NSF bounce here and there with new sets of rules all the time; what is required is not only a national science information policy, but also the machinery to develop such policy. There are no broad guidelines for judgment, so that when emergencies like the energy crisis come along, science information activities are unable to contribute on a qualitative level. Harriet Smith (Univ of Illinois) commented that GISers should take this message back to their users, the scientists, and suggested that they urge their own professional societies to support GEO•REF, noting that it is they, the users, who will "suffer" if the system does not succeed. President Phinney emphasized the need for the user to become familiar with GEO•REF and what the system contains, esp. the researcher who does not use the library frequently.

Directory of Geoscience Libraries. There was discussion of revising the 1968 edition of *Directory of geoscience libraries; U.S. and Canada*, compiled by Richard D. Walker (Univ of Wisconsin), and listing 230 geoscience collections. John Price indicated that his operation at the Library of Congress could provide, at no cost, a printout of all the libraries listed in the National Referral Center's data base. Prof. Walker recommended that the directory be revised, noting that a directory done "properly" would be a very useful tool as well as a source of income to GIS. There was discussion of expanding the geographic coverage to include foreign geoscience libraries, such as a listing in an appendix. A motion presented by Harriet Smith that the directory be completed by November 1974 was passed. [Diane C. Parker, geology/reference librarian at the State Univ of New York at Buffalo, has agreed to work with Prof. Walker on developing the revised directory].

Proposed Article for Library/Information Science Encyclopedia. President Phinney discussed the invitation from Allen Kent, senior editor of the multi-volume *Encyclopedia of library and information sciences* published by Marcel Dekker, Inc., to GIS to prepare a suggested article entitled "Mining, Minerals, and Geoscience Libraries and Collections". The article should serve to "refresh"

and update the previously published article on "Geological Libraries and Collections" in volume 9. President Phinney said this represented an opportunity to interpret the subject area from the "American viewpoint", since the authors of the prior article are from London, Eng. Many members spoke against the preparation of the proposed article on the following grounds: (1) the encyclopedia article is not an appropriate reply mechanism; (2) the title is confusing and appears to be contrived in an attempt to include geoscience material now that the "G" volume has been published; (3) readers would not know to turn to the "M" volume to get information on geologic libraries; (4) GIS is not necessarily competent to discuss mining and minerals libraries; and (5) it is uncertain whether information on libraries in closely related fields, such as petroleum and paleontology, should be included. A motion presented by Harriet Smith that a committee be appointed by the President to prepare the proposed article was defeated.

NCLIS Presentation. President Phinney discussed the possibility for GIS to submit testimony and make a presentation before the National Commission on Libraries and Information Science (NCLIS) during the latter's regional hearings in San Antonio on 27 April 1974. The Commission is eager to hear from users of discipline-oriented information systems, as well as learn about information problems in the Southwest area. President Phinney noted that an appearance before NCLIS is a "fine opportunity" for GIS to explain its function and to state its needs. Written testimony from GIS would be included in the official record of the hearings, whether or not GIS is invited to testify in person. A motion presented by Harriet Smith that the President or a designated representative be given the authority to prepare written testimony for the April 1974 regional hearings conducted by NCLIS was passed. [Dr. Julie H. Bichteler, assistant professor in the Graduate School of Library Science at The Univ of Texas at Austin, has agreed to prepare draft testimony for approval by the GIS Executive Committee. She will try to obtain input from geologist-users of GEO•REF, as well as to assess the needs of GIS members in the Southwest area].

Announcements. (1) Marjorie Hooker (U.S. Geological Survey) announced that the International Mineralogical Association's commission on museums will soon publish a world directory of 230 mineral collections in various colleges, universities, and museums in 25 countries; (2) President Phinney reminded the members about the technical meetings on the following day and apologized for scheduling both the technical session and the symposium on the same day but felt it was "probably happier for the Society if we met on Tuesday all day rather than Wednesday afternoon for one session"; and (3) Skip McAfee invited any GISers to a dinner meeting to discuss the formation of a potential Texas Chapter of the American Society for Information Science.

The Annual Business Meeting was adjourned at 2:45 p.m. The 9th Annual Meeting of GIS will be held in Miami Beach, Fla., during the annual meetings of the Geological Society of America, 18-20 Nov 1974.

An open-house cocktail party for GIS members was held following the Annual Business Meeting along the balcony overlooking the Baker Hotel ballroom. It was the first such informal gathering ever held by GIS for its members at an annual meeting. The only drawback was having to make trips downstairs to get a drink; thankfully, Joe Carl served as our on-call waiter and distributed his supply liberally.

GIS TECHNICAL SESSION

The GIS Technical Session, entitled **Progress and Innovation**, was held Tuesday morning, November 13, in Rooms N224-N227 of the Dallas Convention Center. Nearly 100 people attended the session at various times. The session was organized by Hartley K. Phinney (Chevron Oil Field Research Co., La Habra, Calif.) and presided over by Henry F. Yarbrough (Mobil Research and Development Corp., Dallas).

Short summaries of the speakers' presentations are given below (see *GIS Newsletter* no. 26 for the abstracts of the papers):

Barbara J. Orosz (Union Oil Company of California, Brea, Calif.) discussed the company's computerized information retrieval system, UNISRCH. The system, designed to handle any keyworded data base, is "very simple" to operate. The library assumes all charges for searching. UNISRCH is available for licensing.

The Sea Grant Program and information sources was described by **Leatha F. Miloy** (Texas A&M Univ). The program's scope is broad and interdisciplinary, with no single mission, although coastal zone problems are emphasized at TAMU. TAMU abstracts its own technical reports as one way to keep up with user demand (an SDI service of sorts, with audience feedback). TAMU's free monthly newsletter, *Sea Grant 70's*, reviews new publications and research, abstracts publications received, and features articles on Sea Grant activities across the U.S. In a commentary on NTIS services, the speaker noted that TAMU prepares documents for NTIS but "can't locate our own materials once we've submitted them".

Philip A. Turner (U.S. Army Coastal Engineering Research Center, Ft. Belvoir, Va.) described the use of a generalized data management system for processing, storing, and retrieving sediment-sample information. The system, named QUICK QUERY, consists of two separate programs: file definition & maintenance, and query & report generator. Disadvantages of the system include tape orientation (records are filed sequentially), data fields lying within computer-word boundaries, knowledge of FORTRAN to do routine tasks, and rigid format for control cards. Successful implementation requires: cooperation of users (essential!), integrity of data (get rid of optical scanner), and keeping related data together.

Indexing from the indexer's point of view was discussed by **Dirgham Salahi** (American Geological Institute), chief editor of GEO•REF. Some problems faced by GEO•REF indexers are: need for machine control of GEO•REF's vocabulary (but this is costly); "tremendous number" of synonyms in the geologic literature; changes of indexing methods requested by clients; scope of fields to be covered, proliferation of terms, and expanding size of the literature; and quality of indexing, which depends in part on the quality of the papers to be indexed. The speaker favors "geoscience indexing be done by geoscientists who know their subject well". Problems of indexers include varying approaches depending on training and experience, availability and training of personnel, monotony of the work, and (particularly among the GEO•REF staff) security. Recommendations: inclusion of keywords with the abstracts; editors "designing" authors' abstracts and titles "for the reader and the indexer"; badly needed assessment of the indexing service by geologists and librarians ("their opinions are highly valued for the success of an information retrieval system"); and a move toward a "more concerted effort to improve cooperation and coordination between editors, librarians, and indexers so as to evolve indexing terms or procedures that are acceptable to all".

To counter-balance the preceding talk, **Julie H. Bichteler** (Univ of Texas at Austin) discussed the user's view of GEO•REF (see also page 5 of this newsletter for a detailed summary of Dr. Bichteler's study of GEO•REF). Eleven sample searches reflecting current research interests of nine geoscientists of an academic department were evaluated on a four-point scale (directly relevant, peripheral interest, questionable, irrelevant) and used to calculate retrieval statistics. Precision, which ranged from 95% to zero, was quite good, but recall was low (some articles that should have been retrieved, were not). The users were generally happy with the searches, although some commented that many documents were incorrectly indexed, and that information was sometimes missing.

Wendell Cochran (American Geological Institute), managing editor of *Geotimes*, gave a brief talk on "geowriting", defined as the

writing, editing, and dissemination of earth science information. In 1970, 95% of geologists surveyed by AGI said technical writing is the most important technical skill a geologist should acquire; in a 1973 survey, geological employers complained that their new employees cannot write well. Few professional geologists are professional writers, and this failing detracts from their status as geologists. The systems approach urges every geologist to consider the information-transfer chain (writing, editing, printing) as one process.

GIS SYMPOSIUM

The GIS Symposium, entitled *New and Unusual Publications in Geoscience*, was held Tuesday afternoon, November 13, in Rooms N218-N219 of the Dallas Convention Center. More than 100 people attended the symposium at various times. The symposium was organized by Beverly J. Holmes (Southern Methodist Univ) and presided over by Aphrodite Mamoulides (Shell Development Co., Houston).

Short summaries of the speakers' presentations are given below (see *GIS Newsletter* no. 26 for the abstracts of the papers):

Vivian S. Hall (Univ of Kentucky) outlined a proposed selected bibliography on environmental geology. More than 2200 titles, with bibliographic data, have been gathered and grouped into 10 categories: resources, geologic hazards, pollution, environmental impact, urban geology, land-use planning, wastes, legal aspects, water management, and weather modification. The bibliography will be ready for the printer in March 1974; three agencies have expressed interest in publishing it. Mrs. Hall distributed lists of (1) selected environmental titles published or in process by State geological surveys, and (2) State geological survey addresses.

Geoscience document distribution in Canada was described by **Doreen M. Sutherland** (Geological Survey of Canada, Ottawa). "Open files", inaugurated in 1967, are becoming more popular as conventional printing becomes more expensive; these files contain unfinished work, research results needed urgently by industry, information not suitable for inclusion in any published series of the Survey, and information that would occupy too much space if published in a regular series. Other forms of dissemination include: translations (700 geoscience translations have been prepared since 1968); theses (available on microfilm from the National Library); provincial documents (available on microfiche via the new ProFile service); aerial photos, ERTS imagery, & other channels of release, such as those being established by the technical information service at the Canada Centre for Remote Sensing; and CAN/SDI, a national system that disseminates current awareness of all types of literature, using data bases (such as GEO•REF) created externally, to 116 geoscientists scattered throughout Canada, "at a price, of course".

Michael Inglis (Technology Application Center, Univ of New Mexico, Albuquerque), pinch-hitting for William A. Shinnick, discussed the TAC as an information source for the geoscience/natural resource community. TAC is a non-profit organization that disseminates the results of NASA-sponsored research and development to secondary users, primarily business and industry in the Rocky Mountain Southwest. It trains geology and geophysics graduate students to search 28 data bases (including *Bibliography and index of geology*). A monthly current awareness service in remote sensing is available.

Aerial photography—uses, users, and where to find it, was the topic of **Don L. Hopkins** (U.S. Geological Survey, Washington, D.C.). The Survey's Map Information Office (MIO) is a one-step information center for aerial photos, having extensive records on all Federal agencies that acquire aerial photos, including information on high-altitude Army Map Service maps. Prices for Federal aerial photos are set by an interagency committee. The MIO, scheduled to expand into the National Cartographic Information

Center within a year, is cooperating with Federal and State agencies, and regional planning organizations, in order to direct users to the proper source for obtaining the most suitable photo coverage.

Raymond W. Fary, Jr. (EROS Program, U.S. Geological Survey), substituting for Robert G. Reeves, described the Earth Resources Observation Systems (EROS) Data Center, a new source of earth science information. The Center is located 18 miles northeast of Sioux Falls, S.D., in a new building which will house all of the Center's function (except the photoreduction laboratory) by 1 Jan 1974. Sources of data include ERTS imagery, high-altitude aerial photography & imagery, conventional aerial photography, and other remote sensing techniques. Coverage of the whole Earth is available, on various scales. Infrared, thermal infrared, Skylab, and radar mosaic information is also available. Turn-around time for requests is 3-4 weeks. Catalogs identifying various coverages can be purchased for \$1.25.

U.S. Geological Survey open-file reports were described by **George Becraft** (U.S. Geological Survey, Washington, D.C.). These reports vary from a couple pages to several hundred pages; many have maps, which causes difficulty in copying due to complicated format and color. The reports undergo only very quick review; e.g. geologic names are not checked. One copy of each report is deposited at the Survey's Washington, D.C. library, and at each of USGS's three branches; arrangements are made with State geological surveys to deposit either one copy, or a reproducible copy for the State to distribute on its own (as in Nevada). The system for obtaining copies of open-file reports on request is admittedly "archaic", since, legally, only a commercial organization is allowed to make copies; but in a few years, the system will be replaced.

The last speaker was **Joe Ann Clifton** (Litton Industries, Inc., Woodland Hills, Calif.) who discussed the "dissipation of Babel—obtaining Federal information". After describing the efforts of the Los Angeles Regional Technical Information Users Council, established in 1970 to act as an unofficial collective forum of communication with Federal technical information agencies, the speaker encouraged the formation of similar geological user groups. More work is needed on improving services from NTIS and GPO.

SMU HOSTS GIS-73 ATTENDEES

GISer James G. Stephens, librarian of the Science/Engineering Library at Southern Methodist Univ, invited attendees at the GIS Annual Meeting to visit the SMU campus and its libraries. In a letter to all GIS members prior to the meeting, Mr. Stephens offered "the complete use" of his library, staff, duplicating facilities, and secretarial help to GISers in Dallas—to serve as "your library away from home". Besides taking members on tours of the Science/Engineering Library and other campus highlights, Mr. Stephens and his staff served as message takers, displayed several "geologic treasures", answered reference questions, and provided coffee and donuts. President Phinney expressed the appreciation of GIS for this generous welcome by Mr. Stephens and two of his staffers, reference librarian Beverly Holmes and map librarian Nancy Pruett.

STATEMENT OF INCOMING GIS PRESIDENT

Evidence of the growth and achievements of GIS was clear to all who attended the successful 8th Annual Meeting in Dallas. The success was due to the splendid work done by the outgoing officers, the committees, and various cooperating members who, working as a harmonious team, made it all possible.

On behalf of the membership, I thank all the outgoing officers and committee members for their dedication and their major contributions to GIS during the 1973 term.

Special thanks are due to Robert (Skip) McAfee, jr. for his many years of consistently excellent service as Editor of the *GIS Newsletter*. He has forged the newsletter into a medium that has not only bound us together but has, in fact, stimulated the continued growth of GIS. In a very real sense the newsletter has been the life line of GIS.

Those of us who assume responsibilities for the 1974 term hope we might measure up to the standards of excellence exemplified by the outgoing and all former officers and committee members.

Best Wishes for the New Year.

Dr. Evelyn Sinha
GIS President, 1974

GIS TREASURER'S REPORT

The following unaudited report was given by Janet R. Meserve, GIS Treasurer, at the GIS Annual Business Meeting, 12 Nov 1973:

On hand (1 Jan 1973)	\$2,619.51
Income during 1973 (dues payments, subscriptions to newsletter, sale of publications)	2,814.16
	<u>\$5,433.67</u>
Less:	
Expenses during 1973	\$2,616.61
Postage, mailings, <i>GIS Newsletters</i> no. 21-25, membership directory, ballots	\$1,107.29
Flowers for Bill Woods	12.60
Advance to GIS President	250.00
Printing of <i>GIS Proceedings</i> , v. 3	564.72
AGI dues	180.00
Contribution to GEO•REF	500.00
Refund to subscription agent	2.00
On hand (11 Nov 1973)	\$2,817.06

GISers in the NEWS

Cornelius F. Burk, Jr., national coordinator of the Canadian Centre for Geoscience Data, is undertaking a three-month study to develop a philosophy and concept for an Earth Resources Data System (ERDS) within the Canadian Dept of Energy, Mines & Resources. Dr. Burk will develop a "systematic framework" whereby the Dept can coordinate the acquisition and dissemination of data within and outside the Dept. Temporarily taking his place at the Canadian Centre for Geoscience Data is Katherine L. Gunn, systems coordinator for the Centre.

Mark W. Pangborn, Jr., curator of maps at the U.S. Geological Survey Library, Washington, D.C., has been appointed Map Bibliographer at the library. One of his primary responsibilities will be the compilation of map bibliographies; he will also be available to work on demand-type, map-oriented bibliographies for USGS scientists as required.

NEW MEMBERS OF GIS

Ansari, Mrs. Mary B.: Mines Librarian, Univ of Nevada, Reno Library, Reno, Nev. 89507
Arwas, Clement: Geology Librarian, Dept of Geology, Univ of Montreal, P.O. Box 6128, Montreal, Quebec H3C 3J7, Canada
Baughman, Miss Dorothy: Librarian, Western Uranium Project, Lucius Pitkin, Inc., P.O. Box 1889, Grand Junction, Colo. 81501

Cabeen, S. Kirk: Director, Engineering Societies Library, 345 East 47th St, New York, N.Y. 10017
Davidson, Dr. Martin J.: Associate Professor of Economics, North Texas State Univ, Denton, Tex. 76203
Patton, Mrs. Marie B.: Librarian, Hudson's Bay Oil & Gas Co. Ltd., 320 Seventh Ave, S.W., Calgary, Alberta T2P 0X5, Canada
Peck, Mrs. Loretta B.: S.R. Librarian, Montana College of Mineral Science and Technology, Butte, Mont. 59701

FOREIGN MEMBERSHIP in GIS

GISer Kevin M.W. Marshall, head of the Technical Information Service at the Caribbean Industrial Research Institute, Trinidad, Trinidad & Tobago, in a letter to the GIS Secretary, has asked if the GIS Executive Committee "has... ever given any thought as to how foreign members could be made to participate more fully in GIS affairs? Frankly, I remain a member because I am interested in GIS and its work, which I find to be of value to me, professionally. Perhaps there are more pressing matters calling for your attention at the moment, but I thought I should take the opportunity of raising the point".

The matter of involvement by foreign members in GIS is a valid one. May we hear from other members outside the U.S.? Write to the GIS President if you have comments and suggestions.

BIBLIOGRAPHY OF THESES IN GEOLOGY

Ward, Dederick C., ed. (1973) *Bibliography of theses in geology, 1967-1970*. Geological Society of America. Special paper 143. 274p. \$15.00 ISBN 0-8137-2132-1.

This bibliography is a cooperative project of AGI, GSA, and GIS. It lists geological theses completed at universities and colleges in the U.S. and Canada during the period 1967 through 1970, plus a few older theses not included in previous bibliographies. This is the final bibliography in the series that was inaugurated in 1958; citations of masters and doctoral theses for 1971 and subsequent years have been published in the monthly issues of the *GSA Bibliography and index of geology* since July 1972 where they will continue to be cited and indexed (at present, there are no plans to pull and publish future titles in a separate publication). Theses are group into 21 categories. There are indexes by subject, author, geologic names, and degree-granting institutions.

GEO•REF—THE USER'S VIEW

(During late 1973, Dr. Julie H. Bichteler, assistant professor at the Graduate School of Library Science, The Univ of Texas at Austin, conducted searches for the American Geological Institute for the purpose of evaluating the effectiveness of the GEO•REF file, AGI's "bibliographic reference center for the geosciences and means of automatic information retrieval". The cost of the computer processing involved in this evaluation was covered by AGI. Dr. Bichteler reported on her work at the GIS Annual Meeting in Dallas. She has also prepared a summary of her study, as given below)

GEO•REF was investigated from the point of view of the user, ranging from computer personnel responsible for implementation to the geoscientist who participates in an SDI service or who requests retrospective searches. Much of the criticism offered below can be traced to the historical fact that GEO•REF... was conceived three years after AGI started computer-producing the *Bibliography and index of geology*. GEO•REF was to use as its base the data already existing on magnetic tape, accumulated in producing the *Bibliography*. The format of these tapes was not

well suited to the purposes of GEO•REF; in the early days apparently little, if any, thought had been given to the future use of the data base for retrospective and current literature searching.

Problems of implementation are two-fold:

1. The mnemonics or tags used for fields are inconsistent. The meanings of some of these tags, as well as their presence and absence on the tapes, have varied somewhat over the years. Furthermore, for three of the current mnemonics, the meaning depends upon the type of publication being processed.
2. Index terms may repeat for a single document in different index sets and at different levels. Since tape users treat these index terms as keywords, without regard to level, care must be taken that duplicate terms are not loaded for a single item. Thus, GEO•REF tapes are more expensive and difficult to process than those of other data bases with standardized and unique tags and with non-repeating sets of index terms used to describe a document.

Tape users suggest that the most serious problem in search formulation is that no controlled vocabulary or thesaurus exists for GEO•REF. One must rely on a keyword listing of 60,000 to 80,000 terms generated from the tapes, supplemented by printed texts, glossaries, and treatises.

In order to investigate user reactions to retrospective GEO•REF searches, nine geoscientists were asked to propose queries based on their research interests. Results of running these searches on the entire data base were evaluated by the users on a four-point scale. The document surrogate consisted of author(s), source, original and translated title, and keywords on which the item was retrieved. Precision, calculated as (number of directly relevant articles)/(total articles), averaged 51%. Most users were pleased with the results; the most frequently suggested improvement was to include an abstract or annotation to aid in evaluation.

In summary, recommendations for GEO•REF are: (1) use controlled index terminology from a standardized thesaurus, and provide subscribers with a thesaurus tape; (2) standardize mnemonics and make them unique; and (3) consider basic questions concerning the indexing philosophy itself. For example, a point can be made that ease of producing the printed *Bibliography and index of geology* ought not to dictate the indexing-term format. Also, it might be desirable to let annotations take the place of the in-depth indexing presently used.

GEO•REF NOW AVAILABLE ON-LINE FROM SDC

System Development Corporation (SDC) and the American Geological Institute (AGI) completed an agreement in October 1973 whereby SDC will offer on-line bibliographic search service of the GEO•REF data base. The agreement calls for a 6-month experimental period, after which the service will be evaluated. AGI will derive royalties from use of the GEO•REF tapes.

GEO•REF provides worldwide coverage, from 1967 to the present, of the geoscience literature in 21 different fields. The data base covers approx 3000 journals and includes conference proceedings and major monographs. The SDC GEO•REF file contains more than 190,000 records, with more than 3000 new records added each month by AGI. SDC will update the GEO•REF file monthly.

Records in the SDC/GEO•REF file contain 13 different categories of bibliographic information:

title	* descriptors
original title	* language
* author	* journal CODEN
source	* category code
* identification number	* publication year
symposium information	* update code
title annotation	

Eight of these categories (shown with asterisks) are directly searchable but all categories can be searched on subsets of the file through a special text-searching feature. All information in a citation can be requested by the user through various "print" commands.

The system uses the TYMSHARE nationwide communications network, an IBM 370/158 computer in Santa Monica, Calif., and SDC's ORBIT retrieval program.

Prices for SDC/GEO•REF services are as follows:

Hourly rate for each computer-connect hour,	
rounded to the nearest 100th of an hour \$60.00
Off-line printing, for each citation15
TYMSHARE communications (optional), per hour,	
rounded to the nearest 100th of an hour 10.00

The only additional cost to the user is for telephone charges to the nearest TYMSHARE city (if required) and the monthly rental or purchase of a terminal. On request, SDC will assist customers in selecting appropriate terminals and making arrangements with terminal suppliers. There are no minimums or subscription charges of any kind.

As a special offer, SDC will provide up to 5 free hours of computer time during the first 30 days of service to help new users (i.e. those who have not previously used ORBIT) gain experience with the SDC system. The customer pays only for communications and off-line printing for those 5 hours. The standard rate schedule applies thereafter.

SDC is also negotiating with the American Petroleum Institute and the Univ of Tulsa regarding on-line service of the petroleum data bases.

During the annual meetings of the Geological Society of America in Dallas last month, SDC demonstrated its on-line searching service of GEO•REF at the AGI exhibit booth. It was the first time GEO•REF was directly accessed by librarians.

GIS members should seriously consider this service for their libraries or information centers. For further information, contact System Development Corporation, 2500 Colorado Ave, Santa Monica, Calif. 90406.

GEO•REF REPORT

(The following article, written by GISer Gerald L. Ochs, acting coordinator of GEO•REF, is the first in a series of reports on GEO•REF news to be published as a regular column in the *GIS Newsletter*)

In line with our desires to satisfy the information needs of greater numbers of geoscientists, the GEO•REF file has been made available on-line through System Development Corporation. Hopefully, the near future will see an expanded line of products and services from GEO•REF.

In order to make the file itself more applicable to the needs of the geologic community, we issue a call for comments on GEO•REF products, structure, scope, and depth. With a good level of user feedback, we can become dynamic enough to keep in step with user requirements. Please forward any such comments to: GEO•REF Feedback, American Geological Institute, 2201 M St., N.W., Washington, D.C. 20037.

The AGI booth at the GSA meetings in Dallas saw large numbers of visitors. The GEO•REF on-line demonstration was a big hit with geologists who were interested in seeing their names being printed out on our terminal. There were also frequent requests for information on various areas of proposed thesis work. Unfortunately, a few budding geologists found that their theses had already been written.

OTHER NEWS of GEO•REF

A grant from the National Science Foundation, dated 27 Sept 1973, provides \$365,000 for partial support of GEO•REF during the 18-month period beginning 1 July 1973. This is the final grant from NSF for GEO•REF support. The project must be financially self-supporting by 1 Jan 1975.

GEO•REF expects to achieve an annual rate of 50,000 citations for the year 1974. This rate falls short of the 60,000 articles which GEO•REF had hoped to process annually, but is 10,000 more than that handled for the previous year. Despite streamlining of procedures and improved motivation of existing staff, certain problems in the editorial operation have delayed an increased production rate.

GEO•REF has been considering the concept of GEO•REFEE, in which GEO•REF staff members would identify "significant papers" which in their judgment consist of new data, observations, and syntheses that are of particular geological significance. There may be as many as 100 selections every two weeks. Those papers which achieve a consensus of favorable judgment (perhaps only 20 to 30 every two weeks) would then be earmarked as of likely pivotal importance in geology. Bi-weekly publication of the titles of such papers, or collections of these papers into some kind of compendium, might be both valuable to the profession and profitable to the GEO•REF enterprise. A description of this proposed service is found in *Geology*, Nov 1973, v.1, no.3, p. 130.

GEO•REF is also considering a scheme of decentralized indexing in which organizations such as State geological surveys would be called upon to assure literature coverage and perform indexing on geographically defined (and possibly subject-matter-defined) areas. Central to the idea of decentralized indexing is the preparation of copy in machine-readable form, either in the form of magnetic tapes, punched paper tapes, or possibly OCR sheets. The machine-readable copy would be checked against computer-stored glossaries of legitimate index terms, under the control of an experienced editor of AGI. After error correction, machine-readable copy would be forwarded to the photocomposer for preparation into GEO•REF format. Possible economies in this manner of operation, as opposed to the labor-intensive multiple recording and editing steps presently in force, should more than pay for the extra cost of hardware and computer time.

As part of a cooperative project between AGI and the California Division of Mines and Geology, Gordon B. Oakeshott, retired deputy director of the Division, will collect and index references to California geology published between 1960 and 1970. The indexed citations will then be added to the GEO•REF file and produced as photocomposed pages for a bibliography of California geology.

GEO•REF staff members met with the Smithsonian Science Information Exchange (SSIE) in August 1973 to discuss joint marketing arrangements for GEO•REF and SSIE information products. AGI representatives also met with the Council of the Geological Society of America (GSA) to stress the important relation between GEO•REF and the GSA *Bibliography and index of geology* and the fact that the *Bibliography* is and will continue to be the principal source of income for GEO•REF. There is a feeling that the GSA *Bibliography* is underpriced, compared with secondary journals in other fields.

The joint AGI/GSA Steering Committee for GEO•REF, established in May 1973 to guide the reorganization of the GEO•REF system as a result of the financial crisis it faced in December 1972, has held several meetings to review project operations, preliminary to making recommendations to the presidents of the two organizations on ways to improve these operations and to make the GEO•REF project financially self-supporting by the end of 1974. A final report is due in March 1974. In the meantime, the chairman of the joint committee, GISer C.F. Burk, Jr. (Canadian Centre for Geoscience Data), has resigned because of the imposition of other duties in Canada, and the steering committee has (or will be) disbanded, with the general functions of

the committee to be assumed by the AGI Committee on Geoscience Information. The question of demarcation between AGI and GSA responsibilities for GEO•REF and the *Bibliography* has been "awkward", and a special committee headed by George Becraft (U.S. Geological Survey) and including top-level personnel from GSA will address itself to this question.

Also resigning in late November were Brian A. McGee, project manager of the GEO•REF project, and Dirgham Salahi, chief editor of GEO•REF. Mr. McGee had entered on duty as manager of GEO•REF on 2 July 1973, after serving with the Canadian Centre for Geoscience Data. He plans to do consulting work in the Washington, D.C. area. The AGI Committee on Geoscience Information has recognized that finding a new project manager is of high priority and that a careful search to determine all likely candidates is mandatory. In the meantime, GEO•REF is presently operating under the general direction of Linn Hoover (executive director of AGI), with the day-to-day managerial assistance of Charles Carter (production manager), Ghassan Rassam (in charge of editing), and Gerald Ochs (in charge of customer services and general project coordinator). Dr. Hoover has also submitted his resignation.

AGI COMMITTEE ON GEOSCIENCE INFORMATION

John F. Price (U.S. Library of Congress), the GIS representative to the American Geological Institute's Committee on Geoscience Information, has been taking an active role in the affairs of the Committee, which meets every month in Washington, D.C. Committee members include Burton W. Adkinson (recently retired from the American Geographical Society), George E. Becraft (U.S. Geological Survey), Roy C. Lindholm (George Washington Univ), Mr. Price, A.F. Spilhaus, jr. (American Geophysical Union), Robert Van Nostrand (of Alexandria, Va.), and James F. Mello (Smithsonian Institution), chairman.

The Committee is once again considering the idea of a pre-publication abstract journal in order to alleviate three problems facing geologists who attempt to keep up with the geologic literature: increasing number of papers published, increasing cost to obtain even partial coverage of the literature, and loss in timeliness of information. Coverage of the proposed abstract journal would be focussed on products of Federal and State geological surveys since they produce about one-fourth of the volume of the geologic literature; abstracts would be of papers on North American geology that have been accepted for publication in as many geologic publications as could be covered (the Committee noted that about 25 journals are responsible for producing the great majority of information on the geology of North America). Abstracts would be printed by offset direct from the authors' typescript. Approx 200 abstracts would be published monthly; publication of the abstracts should be within two months prior to publication of the full article. Copies of an article describing the planned pre-publication abstract journal are being sent to the major geological journals for their comment and reaction.

The Committee resolved that AGI prepare an NSF proposal for the study of readership habits in the geological sciences. The Committee noted its ignorance as to what and how much the average geologist reads. It is the opinion of the Committee that a thorough study, perhaps conducted by an experienced marketing analyst under the direction of AGI, could reveal much information that might be vitally important to the member societies and to the geological profession. The general objectives of such a survey would be to determine how the individual geologist approaches the literature and how the geological profession as a whole makes use of the literature. The survey could treat such questions as why geologists subscribe to journals, what they read from the journals they subscribe to or seek out in libraries, how they use the personal libraries which they develop, and what problems can be envisioned with a continuation of conventional publication practices.

Mr. Price described to the Committee the activities of the National Referral Center (NRC), and distributed a listing of

geologic resources identified by the Center. He is readying an article on NRC for a forthcoming issue of *Geotimes*.

In September 1973, the Committee decided to conclude its full-time consideration of GEO•REF and to once again turn to other matters concerning geoscience information. The Committee wished to receive only brief summaries on the status of GEO•REF at each monthly meeting of the Committee. However, due to recent changes in the operation of GEO•REF (see page 7 of this newsletter), the Committee will be forced to reconsider GEO•REF matters. A special AGI committee recently created a priority list of programs which AGI ought to undertake: of the seven major programs identified, "geoscience information" was ranked fourth; of 34 major projects identified, GEO•REF was given eighth priority. In discussion of priorities, no funds were earmarked for geoscience information programs, including such programs as the pre-publication abstract journal and the readership habits survey of geologists. The Committee will seek reconsideration of funding for geoscience information programs; specif. it will request support for activities which it might initiate and for "continuing international systems with regard to GEO•REF and the abstracting program".

Other topics being considered by the Committee include: publication of separate articles as a substitute for journal publication; publication of individual sections of the *Bibliography and index of geology*; cooperative indexing with other indexing operations such as the Chemical Abstracts Service and the American Institute of Physics; special publication of "hot topics" using the GEO•REF data bank; and the role which AGI should play in exposing geology to the public, and how to make the public aware of geology.

GSA TO EXPERIMENT WITH SDI SERVICES

At the GIS Annual Business Meeting in Dallas, Dr. Cornelius F. Burk, Jr. (Canadian Centre for Geoscience Data) reported on the activities of an ad hoc study group on bibliographic information dissemination. The study group, affiliated with the Publications Committee of the Geological Society of America (GSA), is interested in developing new and better ways for GSA to disseminate bibliographic information, and has recommended that GSA look into the feasibility of offering an SDI (selective dissemination of information) service to GSA members.

Two pilot projects are being considered. The first, to be implemented now, is a "familiarization" project to educate geologists as to what an SDI service is. Eleven GSA members will take out trial subscriptions to the CAN/SDI service (administered by the National Science Library in Ottawa) for six months. Only one data base (GEO•REF) will be searched.

The second project, to begin in mid-summer 1974, is a pilot project to evaluate the effectiveness of SDI services for geologists. The service would be open to the general public, with computer searches done by the National Science Library in Ottawa. A proposal is currently being prepared for consideration by GSA.

ASSOCIATION OF EARTH SCIENCE EDITORS

The 7th Annual Conference of the Association of Earth Science Editors (AESE) took place in Ottawa, Ont., 30 Sept to 3 Oct 1973, under the baton of Stuart E. Jenness (National Research Council of Canada), with AESE Chairman Richard V. Dietrich (Central Michigan Univ) presiding. It was the first meeting of AESE held outside the U.S. About 80 people were in attendance. The National Research Council of Canada acted as host.

Technical sessions were devoted to composition systems, alternatives to journal publication, automated cartography, information systems, and publication financing. Papers that aroused considerable discussion included one by David L. Staiger (Society of Automotive Engineers) on alternatives to journal publication, and one by Jessie Furman (Microfiche Publications, New York City) on the National Auxiliary Publications Service (NAPS).

Other events consisted of an ice-breaker on the eve of the conference, a geologic field trip to the Precambrian terrain of the Gatineau Hills (in the rain and fog, which dampened no one's spirits, however), and a banquet at the La Scala restaurant, during which GISer Edwin B. Eckel (executive secretary of the Geological Society of America) received the first AESE award for outstanding editorial contribution. The after-dinner speaker was Melville W. Thistle (professor of journalism, Carleton Univ, Ottawa), an internationally known author, poet, and expert on communication.

AESE has discontinued cooperation with its European counterpart, the European Association of Earth Science Editors (Editerra). New AESE officers for 1974 include Chairman Mary R. Hill (California Division of Mines and Geology) and Vice-Chairman George E. Becraft (U.S. Geological Survey). The 1974 Annual Conference may be held in California.

(This report was prepared with the assistance of GISers Thomas Rafter and Marie Siegrist who attended the AESE Annual Conference).

NEWS FROM GEOSYSTEMS

Geosystems, a division of Lea Associates Limited, was set up in London, Eng., in 1968 by Graham Lea, in order to develop a geoscience information network. Despite several start-up problems, Geosystems' services are in demand and the firm seems to have remained financially viable without external funding. This is in contrast to the problems encountered by the NSF-supported GEO•REF service provided by the American Geological Institute.

Geosystems' output includes three serial publications (*Geotitles weekly*, a current-awareness service; *Geocom bulletin/programs*, treating the use of computers in geoscience; and *Geoscience documentation*, a newsy bulletin of developments in geoscience information, with extensive bibliographic citations), and *GeoArchive*, a computerized information-retrieval system for geoscience.

The continuing growth of Geosystems is evidenced by the following projects:

- 1) Continuing the Society of Vertebrate Paleontology's (SVP) annual *Bibliography of vertebrate paleontology* in the form of quarterly, un-indexed installments, for at least the next three years. The termination of the "Camp et al" bibliographic team at the Univ of California, Berkeley, which had prepared yearly compilations for the bibliography, forced SVP to turn to other compilation services.
- 2) Allowing *Geoscience documentation* to serve as the newsletter for the Geological Information Group (GIG) of the Geological Society of London. A similar offer to GIS in 1972 was turned down by GIS.
- 3) Computerizing the serial holdings of the Institute of Geological Sciences (IGS) libraries, as a result of receiving a contract from the Natural Environment Research Council. The IGS library service is the National Reference Library of Geology. A shelf-by-shelf check is expected to indicate more than 6000 serials, including holdings from the Edinburgh, Leeds, Exeter, and other IGS libraries.
- 4) Producing by early 1974 a new edition of *Geoserials*, a world list of geoscience serials, as a result, in part, of automating the IGS serial holdings. Geosystems is entering the holdings of other major libraries to create a union list. The *Geoserials* record contains: full title; *International list* abbreviation; Geosystems' serial abbreviation code; subject classification; geographical classification; place of publication; year first published (and/or terminated); former & subsequent title(s); frequency of most issues; library holdings, missing parts, and shelf mark & acquisition source; present or last publisher; and language(s).

5) Indexing the geological literature of Morocco, as a result of winning a contract from the Moroccan Division of Geology.

6) Publication of a new edition of *Geosaurus*, Geosystems' thesaurus for geoscience (see next article in this newsletter).

GEOSAURUS

Lea, Graham; Charles, Rosalind; and Shearer, James (1973) *Geosaurus: Geosystems' thesaurus for geoscience and guide to Geotitles weekly*. London: Geosystems. 5 pounds (U.K. & Europe), 15 pounds (elsewhere). ISBN 0-901806-01-3.

The publishers of *Geotitles weekly*, a current-awareness bibliographic service for the geosciences, have announced the publication of a new edition of its thesaurus for geoscience. The publisher, Geosystems, claims that *Geosaurus* is "the only major classification of geology to be devised this century". The initiative for the classification is based on Geosystems' experience of indexing more than 300,000 geological papers. The cover illustration for the thesaurus is *Geosaurus*, a Jurassic sea crocodile.

The purpose of *Geosaurus* is to formalize the basic terminology of geoscience for information retrieval. It consists of a hierarchical structure superimposed on Version 10 of Geosystems Decimal Classification of geoscience.

The thesaurus has a substantial theoretical basis—geoscience information is seen as a milieu defined by three intersecting axes of subject, location, and time. Each axis has a direction of generality and specificity so that users may enter *Geosaurus* at any point and modify their search accordingly. Scope notes make the usage of the thesaurus terms clear, while broader and narrower term relationships are readily evident from the different typographic sizes and indentation. The use of phototypesetting rather than computer printout creates a more pleasing appearance.

In addition to the hierarchical presentation, *Geosaurus* is provided with a complete alphabetical index "and is therefore a true thesaurus, unlike many so-called thesauri which are really lexicons". There are about 3000 terms in the three "species" of *Geosaurus*: *Geosaurus geologici* (subject thesaurus, expanded six-fold from the previous edition); *Geosaurus locati* (geographical and physiographical thesaurus, devised to replace the UDC auxiliaries of place and the physiographical auxiliaries); and *Geosaurus stratigraphici* (stratigraphic table, with divisions to the level of international stage names). Nearly 4000 additional terms are included in the alphabetical indexes. "*Geosaurus* is, therefore, the most sophisticated indexing system for geology" (from the Preface).

Review copies of *Geosaurus* are available on request. Write to Geosystems, P.O. Box 1024, Westminster, London SW1, England.

ENCYCLOPEDIA ARTICLES ON GEOLOGICAL INFORMATION

Volume 9 of the eighteen-volume *Encyclopedia of library and information science*, edited by Allen Kent, Harold Lancour, Jay E. Daily, and William Z. Nasri, and published in 1973 by Marcel Dekker, carries two articles pertaining to geological information:

- "Geological libraries and collections" (p. 283-309), by Graham Lea, Phyllis M. Briers, and Anthony P. Harvey
- "Geological literature" (p. 309-364), by Graham Lea, Judith Diment, and Anthony P. Harvey

The first is a poorly prepared paper that does *not* discuss "geological libraries and collections", despite the title, but does give an overview of "geological organizations" (trends in national development; geological surveys & related organizations; and organization of international geoscience) and "professional aspects" (geological information science activities; geological authorship, editing, and publishing; museums & curatorship; and libraries & librarianship). The bulk of the article (p. 284-303) is a useful listing of the names and addresses of the world's geological surveys or other "important sources of information on the geology of each country". GIS is briefly mentioned (p. 305-306) in one paragraph.

The article on geological literature is much better, although its thinly veiled, anti-U.S. bias and its drumbeating for the authors' bibliographic services detract from its usefulness. There are 56 pages to the article, yet GEO•REF, the major bibliographic reference system in the geosciences, merits only one medium-size paragraph (3 sentences, plus a list of the 14 fields it covers), whereas Geosystems, of which the senior author is director, and its services are mentioned or cited on 29 pages (52%).

The article gives a review of the history and development of geological documentation and bibliography, as well as an appraisal of its current status. It is divided into three sections; primary literature; secondary services; and guides to the literature and reference works.

The section on primary literature begins by defining geology and alluding to its growing importance. There follows a discussion of the characteristics of the geological literature (size, growth, and language & geographic distribution). Some interesting statements regarding the geological literature include the following:

- "it is estimated that there will be 100,000 items of geological literature published in 1972" (p. 313).
- the model: $\log_e y = 0.110x + 0.752$, in which y is the volume of literature in inches/year of uniformly printed volumes and x is year of publication, "gives a good approximation" to the growth of geological literature (in *Bulletin signalétique*) (p. 313-314).
- "It is estimated that the pre-1970 geological literature consists of 1.9 million items, and that during 1971 the two-millionth item would have been published" (in geology) (p. 314).
- 56% of the geological literature is in the English language, 32% in Russian, and 12% in all other languages (p. 316).
- Of the geological serials cited in *Geotitles weekly*, 62% are in the English language, and 39% are from Western Europe and 27% from North America (p. 316-317).
- "It is estimated . . . from a study of books included in *Geotitles weekly* that there will be up to 2000 books pertaining to geology published in 1972. Conference proceedings, books of collected papers, Festschriften, and sborniki will probably add another 500 items" (p. 321).

The first section also includes a discussion of the development of the primary literature, nature of geological information, media of geological communication, nomenclature and terminology, and ranking of serials.

The best part of the article is the section on secondary services. The history, scope, and coverage of the general bibliographic services from Germany, Great Britain, France, U.S., Russia, and Japan are detailed. We learn here that "it is doubtful whether a quarter of the total geological literature has yet been documented by all the general services combined" (p. 326).

Unfortunately, undue attention has been given to Geosystems' services, out of proportion to the others. One can challenge such self-serving statements as: "*Geotitles weekly* is now by far the largest geological documentation service in any language" (p. 315), or "Of the abstracting and indexing services, only *Geotitles weekly* attempts to cover all forms of geological literature" (p. 321), or *Geotitles weekly* is "the largest and most comprehensive indexing service for geology" (p. 328). This section includes discussion of national and regional bibliographic services, and of specialized (subject) services.

The last section, on guides to the geological literature and reference works, is marred by lack of discussion (citation only) of Dederick Ward's *Geologic reference sources* (1967) or of the revised edition published in 1972. Another omission is the total lack of discussion of various U.S. efforts regarding comprehensive geological dictionaries, such as the AGI glossaries. There is a useful list of abbreviations (p. 358-361) restricted to organizations, committees, and programs connected with geology.

Volume 9 of the *Encyclopedia of library and information science*, containing 546 pages of articles from "Fore-Edge Painting" to "Germany", is available for \$50.00 from Marcel Dekker, Inc., 95 Madison Ave, New York, N.Y. 10016 (212/674-3991).

Reviewed by Robert McAfee, jr., Editor of *GIS Newsletter*

LITERATURE CITATIONS

(GISers indicated in **Bold Face**)

Anonymous (Oct 1973) *Marie Stegrist, GSA's favorite bibliographer, retires*. The geologist, v.8, no.4, p.1.3.—Three of Marie's friends, who prefer to remain anonymous, prepared this article on the occasion of her retirement 1 Aug 1973 after working 37 years with the Geological Society of America. She was editor of the *GSA Bibliography and index of geology* at the time of her retirement. The article details Marie's career which constituted "a lifetime of gentle but persistent dedication" that had "its impact on local, national, and international geologic circles". A charter member of GIS, the article failed to mention Marie's service to the Society among the many professional organizations of which she is a member.

Ansari, Mary B. (Nov 1973) *Planning a modest map room for the University of Nevada, Reno Library*. Western Association of Map Libraries. Information bulletin, v.5, no.1, p.40-46.

Bergen, John V. (Nov 1972) *Geographers, maps, and campus map collections*. Professional geographer, v.24, no.4, p.310-316.—A philosophical statement that builds a framework for action by the practicing geographer, vis-a-vis map collections. "Geographers have an obligation to educate administrators as well as librarians to the importance of the map both as a useful historical document and as a plan for action" (p.314).

Bergen, John V. (March 1973) *Map collections in Midwestern universities and colleges; survey tables and bibliography*. Western Illinois Univ. Geography Dept. Special publication no. 1.—Tabulation of map collections (p. 6-45), with selective bibliography (p. 46-55) covering all pertinent aspects of map librarianship.

Burk, C. F., Jr. (1973) *Computer-based storage and retrieval of geoscience information; bibliography 1970-72*. Canada. Geological Survey. Paper 73-14. 38 p.—The 3rd bibliography prepared for the IUGS Committee on Storage, Automatic Processing and Retrieval of Geological Data (Cogeodata). There are 211 worldwide references, including relevant papers presented at the 24th International Geological Congress held in Montreal in 1972. Papers in the fields of remote sensing, hydrology, and oceanography are largely excluded. Indexes by geoscience discipline/topic, information aspect, system name/acronym, nation, organization (origin of work), and author.

Charlesworth, Lloyd J., jr., and Passero, R.N. (c1973) *Physical modeling in the geological sciences: an annotated bibliography*. Edited by Jackson E. Lewis. Council on Education in the Geological Sciences. CEGS Programs publication no.16. 85 p.—"... identifies, describes, and evaluates devices and techniques discussed in the world's literature to demonstrate or simulate natural physical geologic phenomena in classroom or laboratory teaching or research situations" (p. v)

Dacey, Michael F. (Jan 1971) *Linguistic aspects of maps and geographic information*. Evanston (Ill.): Northwestern Univ,

Dept of Geography. 32 p. (NTIS. ED 068 396). microfiche 95¢, hard copy \$3.00.—An attempt to clarify the ways in which maps and other formulations of geographic information constitute a language. Emphasis is placed on the use of linguistic concepts for study of models of geographic information which are treated as components of a geographic information system.

Debain, P., and others (1971) *Standards and specifications for the preparation of geological maps*. Ottawa: Geological Survey of Canada. 56 p.

Ekimov, Roza (Nov 1973) *Library party for your users*. Special libraries, v. 64, no. 11, p. 6A.—A "library party" can convert non-users into enthusiastic patrons.

Gass, I. G.; Smith, Peter J.; and Wilson, R.C.L., eds. (1973) *Understanding the Earth; a reader in the earth sciences*. Sussex (Eng.): Artemis Press. 356 p. \$8.95. (Open University set book).—Distributed in U.S. by M.I.T. Press, Cambridge, Mass.

Gilliland, J. A., and Grove, G. (1973) *Some principles of data storage and information retrieval; their implications for information exchange*. International Association for Mathematical Geology. Journal, v. 5, no. 1, p. 1-10.—Any fundamental (basic) data free of interpretation cannot be discontinuous.

Gillmor, C. S., and Terman, C. J. (Oct 1973) *Communication modes of geophysics: the case of ionospheric physics*. EOS, v. 54, no. 10, p. 900-908.—Uses three sources of data in discussing communication modes; historical growth of the literature; survey of ionospheric physicists; and literature citation data for 1971. The published journals "most nearly fulfill all three functions of aiding current awareness of field, technical information, and theory" (p. 907). In ionospheric physics, theory has a half-life of 7.5 years; technical information, 6 years; and current awareness, 4 years.

Gralewska, A. (Nov 1970) *An evaluation study of Rock Mechanics Information Services*. London: Imperial College of Science and Technology, Rock Mechanics Centre. 3 fiches. 3 pounds. (Rock mechanics development reports, D19).

Hall, Vivian S. (Sept 1973) *A one-card-geographical-retrieval system, or the cataloging of maps in the University of Kentucky Geology Library*. Special Libraries Association. Geography and Map Division. Bulletin, no. 93, p. 27-54.—Detailed manual outlining the fundamental guidelines and procedures for the one-card-per-map cataloging system.

Harris, C. D., and Fellmann, J. D. (1973) *Current geographical serials 1970*. Geographical review, v. 63, no. 1, p. 99-105.—Includes a section on major U.S. collections.

Howie, R. A. (Oct 1973) *Informative abstracts*. Geotimes, v. 18, no. 10, p. 14.—Letter to the editor, from the editor of *Mineralogical abstracts*.

Hubaux, A., comp. (Feb 1972) *Recommendations [of Cogeodata]*. International Union of Geological Sciences. Committee on Storage, Automatic Processing and Retrieval of Geological Data (Cogeodata). Document 33. 26 p.—Recommendations for establishing standards to promote consistency in records of geologic data and to normalize data files so that meaningful comparisons may be achieved. Chapters include reference numbering, geographic location, stratigraphic data, paleontological data, geochemical data, rock description, and mineral deposits. "These recommendations should not be considered as standards, but rather as guidelines, which will hopefully be tested in a wide variety of environments".

Intergovernmental Conference of Experts for Preparing an International Geological Correlation Programme (IGCP). Paris, 19-28 Oct 1971 (1972) *Final report*. Paris: Unesco. 49 p. (ERIC Document Reproduction Service. ED 067 227). microfiche 65¢, hard copy \$3.29.—Summary of conference proceedings which introduces a discussion of the need for a standard

terminology and for the collection of compatible global data to enable progress to be made in correlational geology.

Ivanov, V. K. (1973) "Free use terms" as interpreted by geologists [translated title]. *Geologiya y geofizika*, 1973, no. 1.

Lea, Graham, and Harvey, Anthony P. (June 1973) *Bibliographical identification: some examples of bad practice from the literature*. *Geoscience documentation*, v. 5, no. 3, p. 39—Editorial urging improvement of "editorial professionalism". Gives examples of bad practice from the geology literature.

Lloyd, Joel J. (Dec 1973) *Concept relations in a multilingual thesaurus*. *Geology*, v. 1, no. 4, p. 152.—Brief description of the work by a group sponsored by ICSU/AB and IUGS to develop a thesaurus of the vocabulary of geology in Czechoslovakian, English, French, German, Russian, and Spanish.

MacKay, J. W. (1971) *An introductory guide to sources of information for the literature of geology*. London (Eng.): University College, Dept of Geology. 63 p.

McGee, Brian A. (Nov 1973) *Significant papers*. *Geology*, v. 1, no. 3, p. 130.—Description of proposed GEO•REFEREE service, in which lists of papers consisting of "new data, observations, and syntheses that are particularly significant to the corpus of geoscience" would be published bi-weekly by GEO•REF.

Mello, James F., and Collier, Frederick J. (1972) *New procedures in recording specimen-related data on fossils*. *Journal of paleontology*, v. 46, no. 5, p. 776-777.—The new procedures involve the use of punched paper tape to create labels and other hard copy.

Murdock, Lindsay, and Opello, Olivia (Oct 1973) *Computer literature searches in the physical sciences*. *Special libraries*, v. 64, no. 10, p. 442-445.—Lists selected computerized current awareness services and literature searches in the physical sciences.

Novikov, E. A. (1971) *Putevoditel' po geologicheskoi literature mira*. Leningrad: Leningradskoe Otdelenie, Izdatel'stvo "Nedra". 168 p.—Guide to the geological literature of the world, including secondary services. Critically reviewed by L. V. Bugel'skayr & others in *Akademiia Nauk SSSR's Izvestiya; seriya geologicheskaya*, 1973, no. 1, p. 152-156.

Pearl, Richard M. (1973) *Annotated bibliography of geology; part 2*. *Earth science*, v. 26, no. 4, p. 210.—Popular geology.

Rockwell, D.W., and Roberts, R. (1973) *Operation for application-oriented exploration data-base system shown*. *Oil and gas journal*, v. 71, no. 8, p. 62-78.

Sayer, Mimi (Nov 1973) *How to start a small map library*. *Western Association of Map Libraries. Information bulletin*, v. 5, no. 1, p. 5-11.—A bibliography.

Sinkankas, John (1973) *Gemstone and mineral data book*. London (Eng.): G. Prior Ltd. 352 p. 4 pounds.

Snowball, George J. (Aug 1973) *Geoscience serial publications of English speaking countries south of the Sahara and an inventory of Canadian library holdings*. *Geoscience documentation*, v. 5, no. 4, p. 66-74.—"It is recommended that a limited number of libraries should augment their present holdings so that the geographical distribution within Canada of comprehensive collections of African geoscience materials can be widened" (p. 66).

Strain, Paula M. (Sept 1973) *Regional Environmental Information Network*. *Special Libraries Association. Geography and Map Division. Bulletin*, no. 93, p. 55.—Description of two groups (one in Washington, D.C., the other in Portland, Ore.) whose aim is "to enable the user to locate and gain access to [environmental] information through personal acquaintance with the operators and collectors of data in his field of interest".

Thatcher, Edward P. (Winter 1972) *Criteria for atlas-map selection*. *Focus on Indiana libraries*, v. 26, no. 4.

U.S. Geological Survey (1973) *Resource and land information for South Dade County, Fla.* Its Investigation I-850. 66 p. \$2.45.—This report is a pilot product of the U.S. Dept of the Interior's Resources and Land Information (RALI) program aimed at providing information in more useful ways for the planner and decision-maker who must solve complex problems related to expanding populations, economic growth, resource depletion, and need for environmental protection.

Wall, Charles, and Wall, Janet (March 1973) *Resources and references in earth sciences*. *Journal of geological education*, v. 21, no. 2, p. 81-87.

Wood, D.N., ed. (1973) *Use of earth sciences literature*. London: Butterworth. 459 p. 7.5 pounds. ISBN 0-408-70448-9. (Information sources for research and development).—Covers aspects of the primary and secondary literature, and information systems in the earth sciences.

Woods, W. A., and Kaplan, R. M. (1971) *The Lunar Sciences Natural Language Information System*. Cambridge (Mass.): Bolt, Beranek and Newman. 321 p. (NTIS N72-23155).—LSNLIS is a prototype system for providing direct man-machine interaction (on-line access) with the data base of research results on the lunar samples brought back from the Apollo moon missions, and maintained by the Lunar Receiving Laboratory of the U.S. Manned Spacecraft Center, Houston, Tex.

COPYRIGHT DECISION REVERSAL

(The following article was prepared by GISer Thomas F. Rafter, jr., chairman of the Committee on Copyrights, Association of Earth Science Editors)

The *Washington Post* for 28 Nov 1973 reported that the U.S. Court of Claims overturned an earlier ruling in the Williams & Wilkins suit against the National Institutes of Health and the National Library of Medicine. The split decision (4 to 3) rules that photocopying of magazines and books by scientists and libraries does not violate copyright laws.

The majority opinion avoided defining "fair use" and admitted the term is "amorphous and open-ended", claiming that NIH and NLM did not abuse "fair use" because both have "declared and reasonable strict limitations" keeping duplication thereby "within appropriate confines".

The court felt it was up to Congress to decide on "fair" and "unfair" use. In addition, Congress should decide if copiers should be licensed, how much payment publishers should receive, and the special status, if any, of scientific and educational needs. Alan Latman, attorney for the medical journals, assumed the case would be appealed to the U.S. Supreme Court. He hoped the decision would be reversed.

Whatever one's personal reaction to the court's decision in this case, it is clear that the court acknowledges the present copyright law as inadequate. The complexity of issues now involved require a new copyright law and that can only come from Congress.

DATA PROCESSING in GEOLOGY and GEOPHYSICS

In Sept 1973, the Natural Environment Research Council (NERC) in London issued no. 7 in its Publication Series "B", entitled *Research in the geological sciences*. This is a "consultative document" comprising the reports from eleven NERC geological sciences working parties. One of the working parties, under the chairmanship of A. W. Woodland, dealt with "data processing in geology and geophysics"; its report is found on pages 1-7 of the NERC document.

The eleven reports are not statements of NERC policy. They represent "a stage in a consultative process from which policy decisions will emerge".

The report on geological data processing is concerned with those aspects of data processing in which automation does or could play a significant part in the next 5 to 10 years. The report notes that "it is important to create a pool of geologists skilled in data processing techniques who can take advantage of the common needs of the various sub-disciplines and provide the essential link with developments outside the geological sciences" (p. 1). The report also notes that "the ability to collect data must not be allowed to outrun the ability to process, integrate and communicate the results" (p. 1).

The conclusions (p. 7) of the working party are given under the following arbitrary headings regarding data processing:

Data Collection and Recording. NERC "should support the development of new techniques of data collection, both in the field and the laboratory. In this connection it will be necessary to develop general program packages. Successful development will depend on a better understanding of descriptive procedures and the ways in which data are to be subsequently used".

Data Treatment and Interpretation. The gap between the precise quantitative data of many geological projects and their crude qualitative interpretation can be bridged by quantitative modelling techniques on the computer. NERC should provide support for computer modelling and inversion projects, already an essential part of the methods of geophysics; the application of such techniques to the whole range of geological sub-disciplines should be actively encouraged.

Data Management. "The environmental sciences amass large quantities of diffuse data, the successful processing of which will require adequate systems of data management. This has so far been a largely neglected field where predominantly qualitative data are concerned. NERC is asked to encourage developments leading to the provision of adequate data management programs for all branches of geology".

Graphics. Computer methods provide highly promising possibilities for the development of pictorial representation and cartography, which have always been essential to the display of geologic data. NERC is urged to consider the benefits to be derived from research into the development of new graphic methods, particularly automated cartography which offers prospects of rapid publication of results of field surveys. Greater flexibility in methods of graphic presentation as a result of computer techniques would help in the area of perception psychology.

Archiving. The working party defines *data archive* as "a collection of selected files held by an organisation that accepts long-term responsibility for their preservation and accessibility" (p. 5), whereas a *data bank* is "a collection of integrated data files [organized collections of related records], comprehensive within a defined field and forming a resource for future use and the systems for adding to, updating and using the data" (p. 5). The working party recommends "the establishment of centralised computer data archives in selected fields within the geological sciences. These will promote the easy exchange of data between one organisation and another providing agreement is reached on standards relating to the basic observations. We do not recommend that comprehensive computer data banks be created out of existing collections of information for their own sake, and in the hope that they will eventually be used". Also, the working party concludes that "central computer indexes of existing geological files would be especially useful and could be established even though the data to which they refer does not conform to any particular standard". The working party strongly recommends that NERC establish a study group to lay down procedures for setting up such indexes and to define their scope and depth.

Coordination. When supporting projects that need the application of computer techniques, NERC "should urge upon all participants the great need for coordination and compatibility". Data files concerned primarily with the geological sciences will often be enhanced in their usefulness by correlation with data files in other disciplines. However, it is important that "new methods in early stages of development should not be hampered by the use of unsuitable computers or computer languages merely on the grounds of compatibility" (p. 6).

Education. "There is now an obvious need for all new entrants to research in the geological sciences to be aware of the importance of computers and data processing". An important contribution to the full development of computer techniques in geology would be the provision of a sound mathematical (in the broadest sense) training for all geologists. Further, summer schools and seminars on computerization in geology should be established with NERC support.

MAP LIBRARIANSHIP

Post, Jeremiah B., ed. (Oct 1973) *Map librarianship*. Drexel library quarterly, v. 9, no. 4. \$3.00.

This "realistic and practical" issue of the *Drexel library quarterly* was assembled to aid the beginning map librarian. The articles were written presupposing little prior knowledge or experience with maps and therefore will provide "the basic, minimum information needed by someone new to the field of map custodianship".

Contents: Introduction, by J. B. Post; Map librarianship—today and tomorrow, by Stanley D. Stevens; Selection and acquisition of materials for the map library, by David A. Cobb; Map cataloging—an introduction, by Gail N. Neddermeyer; Map classification, by Mary Larsgaard; Non-geographic methods of map arrangement and classification, by Ralph E. Ehrenberg; Preservation and maintenance of maps, by Marie T. Capps; The computer-produced map catalog: some considerations and a look at operating systems, by B. F. Phillips; and The administration of a map library, by Carlos B. Hagen.

Copies of the October 1973 issue can be obtained for \$3.00 from the office of the *Drexel library quarterly*, Graduate School of Library Science, Drexel Univ., Philadelphia, Pa. 19104.

EARTHQUAKE INFORMATION SERVICE SHIFTED TO USGS

The National Earthquake Information Service, formerly a component of the U.S. Commerce Dept's National Oceanic and Atmospheric Administration (NOAA), has now been shifted to the U.S. Geological Survey (USGS) in the U.S. Interior Dept. The Service was established in 1966 in order to refine and expand the presentation of seismic data to the scientific community and the general public.

The quake information group, located in Boulder, Colo., receives and analyzes worldwide seismic data, determines earthquake epicenter locations, collects earthquake damage data, and makes the data available through publications. The group also provides assistance to other Federal agencies concerning studies such as seismic effects of nuclear blast testing, building vibration studies, and nuclear power-plant siting.

The move of the earthquake information facility from NOAA to the USGS is part of a series of actions taken to consolidate the Federal program in solid-earth physics that began in May 1973

when seismological and geomagnetic research groups were moved from NOAA to the USGS. The entire consolidation will involve about 175 scientists, engineers, and technicians, as well as property and equipment at labs, offices, and observatories located in nine States and in Guam and Puerto Rico.

According to Arthur C. Tarr, geophysicist, and acting chief of the Service, "our major function is to provide scientists, the public, and disaster-relief agencies with timely data on important earthquakes that occur in the United States and worldwide. Although originally a basic data-processing operation, the addition and expansion of communications and computer systems has transformed our operation into an information-centered one. Continuous data coming in from several lines linked to a worldwide network give us the capability to locate any destructive earthquake within 30 minutes to an hour".

The earthquake information number in Boulder is 303/444-1139. After hours (5:00 p.m. to 8:00 a.m., Mountain Time) callers will hear a recorded voice identifying the duty geophysicist and how to reach him, if it is an emergency. The voice also lets callers leave a recorded message for seismologists to answer when they return during normal duty hours. The mailing address of the Service is: National Earthquake Information Service, USGS, R/O/S, Boulder, Colo. 80302.

M.I.T. LIBRARY PATHFINDERS

Library Pathfinders is a novel library search tool designed, developed, and tested at the Massachusetts Institute of Technology by the Model Library Program of Project Intrex. Each Pathfinder, printed on both sides of a single, sturdy, heavy sheet of 8.5" x 11" card stock, leads a library user through a checklist of selected information sources on a single, specific research topic. The Pathfinders are neither bibliographies nor comprehensive literature guides, but rather highly directed search devices to assist individual library users in the initial stages of information gathering.

The publishing schedule calls for 12 Pathfinders in geology and geophysics, to be available by June 1974. Specific topics have not been announced. Each Pathfinder costs \$1.00, and orders can be for as few as ten or as many as desired. Two preprinted catalog cards are included with each Pathfinder. Pathfinders can be photocopied on demand: libraries are given full internal reproduction rights.

In addition to listing selected texts, Pathfinders include references to abstracting and indexing services, bibliographies, handbooks, encyclopedias, pertinent journals, and reviews. Each reference incorporates either relevant subject headings or specific pages relevant to the Pathfinder topic. Spaces are allowed for entering local call numbers. Because many varieties of information sources are listed, each Pathfinder serves not only as a search tool but also as a library instruction tool.

Additional information, including samples, is available from Ms. Carole Schildhauer, Pathfinder Coordinator, Room 10-400, M.I.T., Cambridge, Mass. 02139 (617/253-2096). Ordering information is available from the commercial distributor: Addison-Wesley Publishing Co., Inc., Reading, Mass. 01867 (617/944-3700).

UNIV of TEXAS at AUSTIN SEEKS GEOLOGY LIBRARIAN

The Univ of Texas at Austin is seeking a librarian for its Geological Sciences Library. The librarian is responsible for all aspects of the operation of the Library, which has a collection of 60,000 volumes, 200,000 maps and aerial photographs, and 1500 serial

titles. Duties include collection development, reference service and user education, and supervision of clerical staff.

Qualifications: M.L.S. from an ALA-accredited program and a minimum of three years science-library experience. Academic background in geology and experience with map collections is desirable. Salary commensurate with qualifications and experience. Position available 1 Jan 1974.

Applications: Send resumes, including current salary, academic credentials, and the names of three professional references, to Ms. Nancy Eaton, General Libraries, MAI 2201, The Univ of Texas at Austin, Austin, Tex. 78712. The Univ of Texas is an affirmative action employer.

NEWS NOTES

GEOLOGY ON THE MOVE

The latest word has it that the U.S. Geological Survey Library in Washington, D.C. is scheduled to move to Reston, Virginia (zip code 22092) in March 1974. More than half of the Survey's offices have already relocated in the new town not far from Dulles International Airport.—In February 1974, the American Geological Institute will move its offices to Baileys Crossroads, Virginia (zip code 22041), a southwest suburb of Washington, D.C.

COMPUTER-BASED STORAGE and RETRIEVAL of GEOLOGICAL DATA

"For the field of computer-based data storage and retrieval in geology, the year 1946 may be considered as the Archaean. Interest in the technique has grown impressively since these early days, as illustrated by the continuing high rate of publication. In 1972, we may only have advanced to the Proterozoic, but the Cambrian is not far ahead, when the computer will be taken for granted, as is the polarizing microscope, and where a variety of computer-based data files will be used as an integral part of geological research and activity" (A. Hubaux, from the Foreword to *Computer-based storage and retrieval of geoscience information: bibliography 1970-72*, by C. F. Burk, Jr., published 1973 as Paper 73-14 of the Geological Survey of Canada).

RESOLUTION ON SCI/TECH INFORMATION

Be it resolved, that in order that the government be provided with the best scientific and technological information and direction, the Committee of Scientific Society Presidents urges a step such as creation of a Department of Science and Technology, the establishment of a Council of Science and Technology in the White House, or the elevation of the position of the Science Advisor to cabinet rank. This resolution was adopted 6 Oct 1973 by the Council of Society Presidents, which includes representation from the American Geological Institute. As the committee said: "Major problems facing the people of the United States increasingly require the effective utilization of science and technology. It is essential that all levels of government have a continuing source of scientific and technical information and advice. For example, the energy crisis, food supply, and preservation of environmental quality require scientific and technological solutions. The resolution of these problems demands the integrated action of various subdivisions of science, now partially represented in the various departments, and day-to-day contact with Congress and the White House" (see *Geotimes*, Nov 1973, v. 18, no. 11, p. 28).

PROPOSED NEW LUNAR SAMPLE PUBLICATION

Pending NASA approval, a new publication will be established devoted exclusively to studies of lunar samples. The new series will be part of the *NASA Special publication* (SP) series numbered under 3000. Issues in the series will be published approx four times per year and each issue will contain several papers. Each issue will carry two designations: NASA SP number, and a volume

& issue designation within the series. The series will be printed on slick paper with a soft cover and will be generally similar in format to the *Apollo preliminary science reports* which are also *NASA Special publications*. The first issue of the series should be published in mid-1974. It is possible for libraries to be placed on a supplemental distribution list for the series. The general NASA distribution for the proposed series (Group 30) will include most central university libraries as well as a number of university engineering libraries. Any additional libraries, and individual scientists and researchers, that would like to be put on the distribution list for the proposed series should send the appropriate mailing address to: Dr. William C. Phinney, Geology Branch, Code TN6, NASA-Johnson Space Center, Houston, Tex. 77058.

COGEOLOGICAL SEMINAR

A seminar on "The Use of Computer-based Techniques in Geologic Field Work and Geological Data-base Management" was held 5-9 Nov 1973 at Unesco headquarters in Paris, under the direction of W. W. Hutchison, chairman of the Committee on Storage, Automatic Processing and Retrieval of Geological Data (Cogeodata) of the International Union of Geological Sciences. The session was co-sponsored by Cogeodata and Unesco, in conjunction with the International Geographical Union. A report of the seminar is expected to be published in March 1974.

INTERNATIONAL BOOK PROJECT, INC.

The International Book Project, Inc. (IBP), 17 Mentelle Park, Lexington, Ky. 40502 (606/266-1407) is a non-profit, person-to-person organization, managed and supported by volunteers, that supplies names and addresses of individuals, schools, or libraries, esp. in the developing countries, who request urgently needed surplus books, journals, technical publications, and literature of all sorts. IBP classifies and files the requests until someone offers what is wanted, and ships reading material when supplies and funds permit. GISers with extra or duplicate publications are urged to make use of this service and provide fellow geologists and geology libraries with needed materials.

EARTH SCIENCE EDITORS in LATIN AMERICA

The 1973 Programme Activity Details for Unesco's Division of Scientific and Technological Information and Documentation, which administers UNISIST, lists as one of the activities under the project title "Developing Specialized Information Manpower", assistance to be given for "the establishment of a regional association of editors of earth science journals in Latin America". This activity is part of UNISIST's attempt to "promote collaboration between editors and publishers of journals in science and technology". A total of \$8400 has been budgeted for this activity.

EARTH ENVIRONMENT and RESOURCES CONFERENCE

The Call for Papers for the 1974 Earth Environment and Resources Conference (EERC) has been issued. EERC, to be held 10-12 Sept 1974 in the Marriott Motor Hotel, Philadelphia, Pa., is intended "to provide a forum covering all aspects of environmental and resources activities which would promote interdisciplinary interest and understanding". One of the specific topics of interest is "data management dissemination/interpretation". EERC-74 is sponsored by the United States Environment and Resources Council, the Institute of Electrical and Electronics Engineers, and the Univ of Pennsylvania. Information on submitting papers (deadline: 30 April 1974) can be obtained from the program chairman, E. P. Mercanti, 12415 Shelter Lane, Bowie, Md. 20715.

AQUATIC SCIENCES INFORMATION SYSTEM

Effective January 1974, the Aquatic Sciences and Fisheries Abstracts (ASFA) project will include input of all papers emanating from the U.S. National Oceanic and Atmospheric Administration (NOAA) and NOAA-sponsored research projects in the U.S. Others contributing to ASFA include the Natural Environment Research Council in London, the Centre National pour l'Exploitation des Oceans in France, the All-Union Research Institute of Marine Fisheries and Oceanography (VNIRO) in Moscow, and the Food and Agricultural Organization in Rome. All references input to the 1974 issues of ASFA are being standardized in accordance with UNISIST-recommended bibliographic recording rules, and converted to a machine-sensible communications format. ASFA is thus emerging as the most comprehensive literature retrieval and dissemination system relating to aquatic sciences.



GIS NEWSLETTER

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