

OBJECTIVES and POLICY COMMITTEE

GIS President Roy Graves has appointed GIS Past President, Dr. Cornelius F. Burk, jr. (Canadian Centre for Geoscience Data), to chair the newly established Objectives and Policy Committee. According to Dr. Burk, the committee will "consider the constitutional purpose of the Society in light of present and past de facto policies and its relationship to other societies in order to ensure that its objectives and policies are sound, realistic, and in the best interests of the geoscience community".

Upon reviewing the present objectives of GIS, the committee's general recommendations and report will be submitted, via the Executive Committee, to the membership at large before 15 Sept 1972 for consideration at the November 1972 Annual Meeting. Other committee members are Robert McAfee, jr. (American Society for Information Science), Thomas F. Rafter, jr. (American Geological Institute), and Roza Ekimov (Humble Oil & Refining Co., Los Angeles).

ADVISORY COMMITTEE to AGI's GEO-REF

GIS President Roy Graves has appointed GIS Vice-President, Hartley K. Phinney, jr. (Chevron Oil Field Research Co., La Habra, Calif.), to chair a newly established advisory committee to the GEO-REF system of the American Geological Institute. According to Dr. Graves, "this committee will have as its objective the furnishing of user-oriented advice to GEO-REF. The direction of such advice should be toward the improvement of GEO-REF as it evolves for use by the geoscience community".

GEO-REF is a bibliographic reference file to the world literature of the geosciences. Quoting from GEO-REF; report and forecast (issued Feb 1972 by AGI's Dept of Geoscience Information): "It is stored on magnetic tape and is computer-programmed to provide a range of services meeting the needs of the geological community. It is, today, the only comprehensive, indexed referral system to the geological literature that is being produced in the English language. In terms of electronic data processing, it is probably the most sophisticated bibliographic tool in the world serving geoscientists".

Any recommendations resulting from the activities of the advisory committee will be made, via the GIS Executive Committee, to the directors of GEO-REF. The directors are invited to suggest specific tasks or directions of inquiry. Among those who have accepted appointment to the committee thus far are Cornelius F. Burk, jr. (Canadian Centre for Geoscience Data), Marjorie Hooker (U.S. Geological Survey), V. Vern Hutchison (U.S. Bureau of Mines, Bartlesville,

Okla.), Ruth L. Keefer (Mobil Research & Development Co., Dallas), and Barbara Orosz (Union Oil Co. of California, Brea, Calif.).

CAPABILITY INDEX PROJECT COMMITTEE

GIS President Roy Graves has established the Capability Index Project Committee under the chairmanship of Arleen N. Somerville (head, Chemistry, Geological Sciences, and Life Sciences Libraries, Univ of Rochester). Dr. Richard D. Walker (Univ of Wisconsin) and Robert McAfee, jr. (American Society for Information Science) complete the makeup of the committee.

The committee will conduct a research project that aims to develop a technique for evaluating academic geoscience libraries on a nationwide basis by calculating their "Capability Indexes" (CI's) - that is, the capability of a library to supply documents its users need on demand. The CI is determined by substituting values in an equation developed by a group of researchers who measured the capabilities of medical libraries for providing representative documents.

A library is tested with a 300-document sample (which has been provided by GEO-REF) to determine if the library owns the documents and, if so, how long it would take the library user to retrieve these documents. The CI provides a means of comparing a library's performance with that of other similar libraries and also enables a library to set its own goals for improvement. If deemed desirable at a later date, this test could be used to develop national goals and standards. Repetition of the test at various intervals with updated sets of references enables one to follow the progress of a library in comparison with others.

By providing goals for document availability in geoscience libraries, the application of this test would put GIS in the forefront of such a pivotal area. The test procedure is expected to involve many GIS members and their libraries at academic institutions. GIS librarians interested in helping on the project are requested to contact Mrs. Somerville, Science Libraries Office, Univ of Rochester Library, Rochester, N.Y. 14627.

BIBLIOGRAPHY of THESES in GEOLOGY

The Geological Society of America (GSA) will publish a Special paper (number and date to be determined) that will include titles of theses in geology issued 1967-1970 by U.S. and Canadian academic institutions. Dederick C. Ward, chairman of the GIS Theses Bibliog-

LETTERS to the EDITOR

raphy Committee and editor of the compilation, also reported that titles of theses issued in 1971 and thereafter will be "filtered into" the monthly Bibliography and index of geology published by GSA.

The GIS committee is responsible for gathering the theses citations and forwards them to GEO.REF under the terms of a NSF grant awarded to the American Geological Institute. GSA will purchase the citations and index terms from GEO.REF in order to include the material in their reference publications.

Separate bibliographies of geologic theses will no longer be issued after the Special paper is published. Mr. Ward's committee has gathered 1971 titles, and will start collecting 1972 titles later this summer.

OTHER GIS MATTERS

** The seven papers delivered at the GIS Symposium, "Toward the Development of a Geoscience Information System", held 1 Nov 1971 in Washington, D.C., will be published later this year (hopefully by summer). The manuscripts are in the process of being edited, and printing bids are being obtained.

** Program chairman for the 1972 Annual Meeting of GIS (to be held in Minneapolis during the annual meetings of GSA, 13-15 Nov) is Vice-President Hartley K. Phinney, jr. He advises that plans are well in hand and the work underway to assure another fine program. Mr. Phinney will be the GIS representative on the GSA Joint Technical Program Committee, which will meet in Boulder, Colo., in August.

** GIS President Roy Graves has nominated Logan O. Cowgill, assistant manager of the U.S. Interior Dept's Water Resources Scientific Information Center, for appointment as the official GIS representative to the AGI Committee on Geoscience Information.

** Sara Aull (Univ of Houston), the GIS representative to the AGI House of Society Representatives, attended the April 1971 meeting of the House and reports that the new constitution and bylaws of AGI were approved unanimously, but the name of the Institute remains the same when the motion for a change of name was withdrawn and did not come up for a vote.

** Eleanore E. Wilkins, librarian at the Pacific Coast Center of the U.S. Geological Survey, has accepted the job of acting chairwoman for the purpose of organizing a Western Section of GIS. As presently contemplated, the Section would be made up of GIS members (providing they are willing) who reside in the States of California, Oregon, Washington, Idaho, Nevada, Arizona, and Alaska. Those in this area may expect to hear from Miss Wilkins in the near future. GIS President Roy Graves will be pleased to entertain suggestions for organization of other Sections. Any volunteers for jobs similar to the one taken on by Eleanore?

The problem of drawing together the broad functional and geographic interests represented in GIS in order to carry out programs and projects in the field of Geoscience Information has been forcibly impressed upon me this year (1971). Our individual interests tend to be sharply focused in one specific field - bibliographic control, librarianship, research, resource exploration, data processing, and so on. Our geographic distribution ranges throughout North America and beyond, with only a few areas having even a modest concentration of members. These facts have contributed to a low level of Society activity and member service, as compared with some other organizations. Many have commented on this apparent failing, some rather strongly.

But wait, what is on the other side of the coin? These characteristics of broad member interest, transcending the Information/Geoscience boundary, and wide geographic distribution, represent in fact the basis of our strength and afford us a unique opportunity for achievement not available to either more specialized societies or to larger, more affluent ones. With some imaginative programs to mobilize our considerable intellectual resources, this latent strength can effectively be brought to bear on the field of Geoscience Information.

Sincerely,
Cornelius F. Burk, jr.
Canadian Centre for Geoscience Data,
and GIS President, 1971

Generally speaking, the GIS newsletter is very serious, so I thought you might write something different.

I am employed as an exploration librarian by Humble Oil & Refining Co., Los Angeles. As in almost every oil company, I noticed some people are transferred to different locations, so for a person who is leaving, employees organize a party (coffee or punch plus cake or cookies). The same when a girl is getting married or is going to have a baby. But no one thought about the party for "Library Users" except me.

So I asked management for permission and money and organized a Library Users Christmas Party last year. I prepared statistics for 1971: how many orders of books, maps, microfilms, or photocopies of articles each employee ordered and how many books he checked out from the library during the whole year. Then I came out with special figures and as a result I announced the ten best readers, three of whom received awards during the party.

I think this gathering of readers with management, library personnel, and guest from USGS was very beneficial. It showed how much our company cares for people who improve their knowledge. I think every special library should arrange such an event once a year. I received many phone calls, thank-you cards, and expressions of appreciation.

Such library studies help to determine who are enthusiastic readers and who are stubborn non-users, and maybe by having such a party at the library we can help to convert non-users into enthusiastic readers.

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Re: About GIS as a whole. I hope this year the new management will be more successful than in past years. ... I am sure here in southern California, as well as in other locations, there are many prospective members who could join our Society. What we need is good management, publicity, and a membership chairman in each state who will be supplied with pamphlets describing GIS and membership application forms. Also, we need to arrange local (state) meetings for members from time to time so we will get to know each other better and cooperate better.

Very truly yours,
Mrs. Roza Ekimov
Exploration Librarian
Humble Oil & Refining Company
Los Angeles, Calif. 90067

GISers in the NEWS

Ruth Bristol has a part-time library job at the Miller School, a private boys' school near Charlottesville, Va.

S. Kirk Cabeen, director of the Engineering Societies Library, is president 1971/1972 of the New York Library Club.

Georgianna Conant, formerly of the bibliographic unit at the U.S. Geological Survey, is now with the Lexicon Office of the Geologic Names Division, USGS, Cafritz Bldg, 1625 I St, N.W., Washington, D.C.

Sharon R. Cook has graduated from the Univ of Wisconsin with a M.S. degree in Library Science and is now an assistant science librarian at the Univ of Kansas, Lawrence, where she is in charge of the Earth Sciences Library.

Logan O. Cowgill, assistant manager of the U.S. Interior Dept's Water Resources Scientific Information Center, has agreed to assume responsibility for coordinating a bibliographic program reflecting Federal library holdings relating to the American Revolution. He will report to the Federal Library Committee with a plan developed to consider problems and recommended solutions.

Roza Ekimov, exploration librarian at Humble Oil & Refining Co., Los Angeles, was featured in the Humble Hesperian, August 1971.

Carlotta G. Harvey is environmental studies librarian at Univ of Waterloo, Waterloo, Ontario.

M. Katherine L. Keener has assumed duties as geology librarian at the Univ of Oklahoma in Norman. She was formerly librarian at NASA's Lunar Science Institute in Houston.

Irvin V. Kuehner, Michigan Geological Survey member, has been promoted to Survey Editor and Supervisor of the General Geology Section.

Elisabeth S. Loud retired 8 Jan 1972 from the Geologic Division of the U.S. Geological Survey, Washington, D.C.

H. Robert Malinowsky, assistant director of libraries at the Univ of Kansas and chairman of the Education Committee of the Special Libraries Association, helped organize the Institute on Teaching Special Librarianship at the School of Library Science, Univ of Michigan, Ann Arbor, 22-23 May 1972. The SLA Education Committee co-sponsored the institute.

William H. Matthews, III, professor of geology at Lamar State College of Technology, Beaumont, Tex., has been appointed director of education for the American Geological Institute, effective 1 Sept 1972. He will succeed F.D. Holland, jr., who will return to his teaching post at the Univ of North Dakota in August.

Timothy C. O'Callaghan, formerly manager of GEO-REF at AGI, is now with General Publishing Services, 201 N. Washington St, Alexandria, Va. 22314.

Donald H. Owens, formerly associate chief of Information Systems Section at Battelle Memorial Institute, is now contract development representative for Battelle-Columbus Laboratories.

Richard M. Pearl, professor of geology at Colorado College, has established for the first time a system of mineral-collecting grounds for general public use. It is called Mineral Parks of Colorado, Inc., and has been incorporated as a non-profit enterprise for recreational purposes. For further description, see Mineralogical record, Sept/Oct 1971, v.2, no.5, p. 236-237.

Edward P. Thatcher, map librarian at the Univ of Oregon, has been elected president of the Western Association of Map Libraries for 1971-1972.

Judith Tomblin, librarian of the Seismic Research Unit at the Univ of West Indies in Trinidad, can be contacted c/o Seismographic Station, Univ of California, Berkeley, Calif. 94720, until Dec 1972.

Dorothy Vitaliano of the Geologic Division, U.S. Geological Survey, Bloomington, Ind., reports that "since termination of the USGS' Technical Bibliographies project, my office--namely myself and ½ typist--has become a translation center for the Geologic Division, doing custom translations of material not available in English through other channels".

NEW MEMBERS of GIS

Holmes, Mrs. Beverly J.: UTD (Univ of Texas at Dallas) Librarian at SMU, Rm.118, S.I.C., Southern Methodist Univ, Dallas, Tex. 75222

Horan, Carol L.: Reference Librarian, U.S. Geological Survey Library, GSA Bldg, Rm.1033, 18th & F Streets, N.W., Washington, D.C. 20242

Krick, Mrs. Mary: Geological Librarian, Illinois State Geological Survey, Natural Resources Bldg, Urbana, Ill. 61801

MacRobbie, D.C.: Senior Mineral Resource Analyst, Mineral Resources Branch, Dept of Energy, Mines & Resources, no.8 Temp. Bldg, Ottawa, Ontario, Canada

Meanley, Mrs. Carolyn: Science Reference Librarian, and Senior Literature Searcher for Regional Information & Communication Exchange (R.I.C.E.), Fondren Library, Box 1892, Rice Univ, Houston, Tex. 77001

Vaghani, Nanji P.: 65 Manor Dr, Apt.15D, Newark, N.J. 07106

Vap, Richard D.: Graduate Student, Mineral Economics, Colorado School of Mines, Golden, Colo. 80401

RECENT PUBLICATIONS in GEOSCIENCE INFORMATION

(GISers indicated in UPPER CASE)

- Brown, G., & others (1971) Information sources in geoscience. n.p., n.p. 4p. (mimeo).---Abstract of contribution to the Geological Information Group of the Geological Society of London meeting of 26 May 1971 entitled "The nature, sources and communication of geological information". Copies available from GIS Newsletter Editor.
- BURK, CORNELIUS F., jr. (1971) Computer-based geological data systems: an emerging basis for international communication. World Petroleum Congress. 8th, Moscow, 1971. Proceedings, v.2, p.327-355.
- BURK, CORNELIUS F., jr. (Apr 1972) Development of a national computer-based network of basic information on Canadian mineral deposits. Canadian mining journal, v.93, no.4, p.34-38.
- Canadian Centre for Geoscience Data (1972) The 'saurus of the Canadian Index to Geoscience Data. Ottawa: Canadian Centre for Geoscience Data. 201p. \$5.---Lists 34,000 terms, including geographic names.
- Carrington, David K., and Mangan, Elizabeth U. (1971) Data preparation manual for the conversion of map cataloging records to machine readable form. Washington, D.C.: U.S. Govt Printing Office. 317p. \$2.75.---Outlines in detail, with pertinent descriptions and examples, the procedures to be followed in preparing map cataloging data in both variable- and fixed-field positions for machine input.
- CORBETT, LINDSAY (Sept 1971) Controlled versus natural language: a report on the great debate. Information scientist, v.5, no.3, p.115-120.---Report of debate between D.J. Campbell & J.E.L. Farradane (controlled language preferable) and G.B.F. Niblett & A.R. Kent (natural language preferable).
- CRAMER, HOWARD R. (c1971) A bibliography of undergraduate geology curricula, p.58-66. In: Rhodes, F.H.T., & others. Undergraduate geology: a strategy for design of curricula. Washington, D.C.: Council on Education in the Geological Sciences. 79p. (CEGS programs publication no.8). ---Contains 231 titles of published articles dealing with complete curriculum suggestions and recommendations for undergraduate geology.
- DeGrasse, Richard V. (1971) Information systems and earth resources management. International Federation for Information Processing. IFIP Congress 71, Ljubljana, Yugoslavia, Aug 1971. Management and administration; booklet TA-5, p.12-15.---Presents a concept for planning and developing a worldwide earth resources management information system.
- Harrison, Ronald K., and Sabine, Peter A., eds. (1970) A petrological-mineralogical code for computer use. London: HMSO. 134p. Institute of Geological Sciences. Report no.70/6).---Presents an alphanumeric code (for rock, mineral, and related names) for computer use in which a fixed-format, hierarchical structure is adopted and only 4 columns of a standard 80-column punched card is used.
- HRUSKA, J., and BURK, CORNELIUS F., jr. (1971) Computer-based storage and retrieval of geoscience information: bibliography 1946-69. Canada. Geological Survey. Paper 71-40. 52p. \$1.50.
- Kelly, A.M. (1972) Recommended standards for recording the location of mineral deposits. Canada. Geological Survey. Paper 72-9. 8p. 75c.
- Laffitte, P., and Marelle, A. (1971) L'informatique géologique. Natural resources forum, v.1, no.1, p. 59-67.---Discussion of the types of problems posed by geologic data processing that may be resolved by combinations of simpler programs, such as: a) bank programs (data file storage, automatic documentation); b) computing programs; c) cartography programs (in which the computer produces a map on the basis of the data); and d) correlation programs involving semantic data. The authors describe the geology & mining data system being developed by the Ecole des Mines in Paris. English summary.
- Lloyd, Joel J. (Apr 1972) Order out of chaos. Geotimes, v.17, no.4, p.9.---Discussion of Cogeodata.
- LONG, HARRIET K. (Nov 1971) A bibliography of earth science bibliographies of the United States of America. Washington, D.C.: American Geological Institute, Dept of Geoscience Information. 19p. \$3.
- McGee, Brian A. (Apr 1972) New key to mineral information - Canadian Index to Geoscience Data. Canadian mining journal, v.93, no.4, p.43-47.
- McLaughlin, Pat (Dec 1971) Federal map libraries and the development of automation standards. Special Libraries Association. Geography and Map Division. Bulletin no.86, p.21-23.---Discusses attempts by Federal agencies to develop & encourage standardization of procedures throughout the American map library community.
- Moody, D.W., and Kays, Olaf (Jan-Feb 1972) Development of the U.S. Geological Survey bibliographic system using GIPSY. American Society for Information Science. Journal, v.23, no.1, p.39-49.---Discussion of the Generalized Information Processing System (GIPSY) developed by the Univ of Oklahoma & adopted by the USGS in 1968 to store & retrieve earth sciences literature.

REDDOUT, LYNDA R. (Sept 1971) Maps in the Texas A&M University Library. Texas library journal, v. 47, no.4, p.211-212.---Short description of map room initiated in Sept 1970.

RICHARDSON, H.G., ed. (1971) The Texas list. 3rd ed. Houston: Phil Wilson Pub. Co. 838p. \$175 per year including semiannual supplements in 1972 & 1973.---Lists holdings of serials in scientific, technical, business, and humanities fields in 127 academic, public, and special libraries in Texas. Prior editions published 1965 & 1968.

Rima, Donald R.; CHASE, EDITH B.; and Myers, Beverly M. (1971) Subsurface waste disposal by means of wells--a selective annotated bibliography. U.S. Geological Survey. Water-supply paper 2020. 305p. \$1.50.---Contains 692 references pertaining to injection wells, injection technology, and radioactive waste disposal.

Smith, Richard Daniel (Feb 1972) Maps; their deterioration and preservation. Special libraries, v.63, no.2, p.59-68.---A study of the paper in 12 U.S. Geological Survey maps printed between 1918 and 1971 suggests that the probably useful life of USGS maps is approx 100 years, implying that the maps are aging at rates similar to the deterioration rates of most 20th-century book papers. Experimental data indicate that both aqueous and non-aqueous deacidification treatments increase the potential life of most maps and that "nonaqueous treatment can produce more protection against the development of harmful acidity in the future than aqueous treatments can produce" (p.59).

SNOWBALL, GEORGE J. (Sept-Oct 1971) Survey of social sciences and humanities monograph circulation by random sampling of the stock. Canadian library journal, v.28, no.5, p.352-361.

Special Libraries Association. Geography and Map Division (Dec 1971) Recent practices in map libraries. New York: Special Libraries Association. 40p. \$3.75.---A reprint of papers previously published in Special libraries and presented at a map workshop panel of the Geography & Map Division at SLA's 60th Annual Conference in Montreal in 1969.

U.S. Office of Water Resources Research. Water Resources Scientific Information Center (1971) Water resources thesaurus. 2nd ed. Washington, D.C.: U.S. Dept of the Interior. 375p.---"A vocabulary for indexing and retrieving the literature of water resources research and development". Revision of 1966 ed. Prepared by the Smithsonian Science Information Exchange. Contains 4,288 main terms and 1,175 USE-reference terms.

Vetter, Richard C., comp. (1970) Oceanography information sources/70. Washington, D.C.: National Academy of Sciences. 51p. \$2.50.---A staff report of the Committee on Oceanography, Division of Earth Sciences, National Research Council. Sources include "places" to which one can write in search of information (industries, labs & depts of oceanography, govt agencies, & private organizations) and "publications" that can be found in

libraries or obtained through the mail (educational material, reference lists & directories, journals & bulletins, reports of NAS-NRC, and general-coverage magazines & newsletters).

Warner, Jeffrey L., and Fessenden, Dale H. (Oct 1971) Computer indexing of geologic papers. Geological Society of America. Abstracts with programs (1971 Annual Meetings), v.3, no.7, p.785.---Abstract. Discusses an operational computer program written in FORTRAN V for the Univac 1108 that reads the text of geological papers & extracts key words and phrases.

USGS REFERENCE LIBRARIAN OPENING

The U.S. Geological Survey Library in Washington, D.C., has a position opening for Reference Librarian, grade GS-9 or GS-11. Qualifications include bachelor's degree with strong subject background in the earth sciences, and master's degree in library science; the GS-11 position requires one year or more of experience in geoscience reference work at the GS-9 level. The incumbent functions as one of a team of reference librarians who are highly service-oriented and involved in all aspects of reference work, including reference-desk duty, book selection, and interlibrary loan activities. Contact: George H. Goodwin, jr., Chief Librarian, U.S. Geological Survey, Rm.1033, GSA Bldg, 18th and F Streets, N.W., Washington, D.C. 20242 (phone: AC 202/343-3863; code 183, ext.33863).

UNISIST

GIS members may be interested in the Report of the U.S. Delegation to the Intergovernmental Conference for the Establishment of a World Science Information System, commonly known as UNISIST. The Conference, convened by the United National Educational, Scientific, and Cultural Organization (Unesco) at Unesco House, Paris, 4-8 Oct 1971, reviewed the recommendations for improving international scientific communication made by the joint study committee of Unesco and the International Council of Scientific Unions (ICSU).

The results of this joint study of the feasibility of a world science information system, undertaken between January 1967 and May 1970, had been previously published by Unesco in two versions, the shorter one serving as the working paper of the Conference. The Conference was requested to advise the Director General of Unesco on the desirability of establishing a new program (also to be known as UNISIST) for the purpose of increasing voluntary cooperation in the international exchange of scientific and technical information. The key issues reviewed by the Conference were: (1) the principles underlying such a program; (2) the broad program objectives; and (3) the provisions for organization and management.

The Conference was attended by delegates representing 83 member and affiliated states of Unesco. The delegations of 16 of these countries were headed by

individuals of ministerial rank. In addition, a total of 39 intergovernmental and nongovernmental organizations was represented by one or more observers.

Considerable advance work went into the preparation of professional, technical, and political briefings for the U.S. Delegation. This help was provided by the COSATI Panel on International Information Activities, members of the National Academy of Sciences, professional societies, and other groups of the governmental, academic, and industrial sectors. This resulted in draft positions on the 22 program recommendations of the UNISIST published report, together with a draft resolution on the organization and management of a UNISIST program.

The delegations of the U.S. and the U.S.S.R. jointly sponsored a draft resolution (D.R. 5) together with 12 other delegations, including those of France, India, and the United Kingdom. The key elements in this joint draft resolution concerned the management of the UNISIST program, namely: (1) creation within Unesco of a permanent secretariat which would be responsible for the preparation and implementation of measures concerning the budget and programs; (2) establishment of an intergovernmental Steering Committee to advise on program priorities and development; and (3) establishment, in consultation with ICSU and other organizations, of an Advisory Committee of scientists, engineers, and information specialists to assess periodically the ability of the UNISIST program to meet the needs of, and provide services to, the world's communities of scientists and engineers.

This draft resolution served as the base for the draft resolution (D.R. 15) which in its second revision was passed as the Conference resolution. The adopted Resolution gave the Steering Committee supervisory, rather than advisory, authority over program priorities and development. Copies of D.R. 15 are available from the GIS Newsletter Editor.

The U.S. Delegation in its formal remarks and informal interactions with other delegations strove to promulgate a clearer interpretation and understanding of the concept of UNISIST as a program, based on voluntary cooperation between existing and future autonomous national, regional, and international scientific and technical information services and systems, and not as a single, monolithic system.

The U.S. Delegation has noted several post-Conference requirements that the United States will be faced with in the interim between the UNISIST Conference and the convening of the Unesco General Conference in October 1972:

First, the program plans and budget for the UNISIST program will be developed by the UNISIST Secretariat for submission to the Unesco Executive Board, and subsequently to the General Conference of Unesco which meets in October 1972. It is highly important that U.S. representatives on the Unesco Executive Board and U.S. representation at the next General Conference of Unesco be adequately briefed on the technical and professional, as well as the political, aspects of UNISIST.

Second, to ensure protection of U.S. interests in the UNISIST program, consideration should be given now to the nature of adequate U.S. representation on the intergovernmental Steering Committee and the Advisory Committee that will be established when the October 1972 Unesco General Conference approves the UNISIST Conference Resolution.

Third, the United States should have a clearly stated position on those UNISIST projects to be developed in the interim (Nov 1971 to Oct 1972) by Unesco which were identified as (1) an International Serials Data System, (2) training programs, and (3) assistance to developing countries.

IUGS GEOLOGICAL DOCUMENTATION COMMITTEE

The Committee for the Study of Geological Documentation of the International Union of Geological Sciences is planning two sessions (August 24 and 25, 1972) at the 24th International Geological Congress (IGC) to be held in Montreal. The Committee will consider two major subjects: (1) automation of geological documentation processing and cooperation between existing centers; and (2) preparation of reviews.

The multilingual thesaurus (Czech-English-French-German) will be presented and the Committee hopes that this will be "the first step to a worldwide accepted multilingual thesaurus in geology".

The preparation of reviews has been the object of long discussions and "no satisfactory solution has been found for the regular selection, preparation, and publication of reviews". Committee chairman L. Delbos will appoint a Special Review Board which will be responsible for "the necessary contacts with the specialists able to select or to prepare the reviews and to define the way of cooperation with the publishers, etc."

COGEODATA

The Committee on Storage, Automatic Processing and Retrieval of Geological Data (Cogeodata) of the International Union of Geological Sciences has issued a 48-page draft report (Document 31, Dec 1971) entitled: Geological data files; results of an international inquiry. This is a compilation of 159 "geological data files", defined as collections of "measurements and observations made on a series of geological objects of the same kind".

The list, believed to be the first of its kind to be established on an international level, is "probably a fair representative sample of the diversity of geological data files which are created and processed today". The source and title of each data file is given, as well as its subject coverage, purpose, physical state of the storage support, and degree of availability. There are indexes for each of these parameters as well as an index of files to which original and available programs are directly related. After the present draft has been corrected and re-

vised, Cogeodata intends to publish it in CODATA bulletin in time for the 24th International Geological Congress (IGC) to be held in Montreal, August 1972.

At plenary sessions of Cogeodata during the IGC, a full review of the Committee's progress and recommendations will be undertaken, together with plans for the period 1972-1976. The fact that this IGC will be the first of its kind to have a section on "computer-based storage, retrieval, and processing of geological information" illustrates the growing interest of the geological community in building and exchanging data files. There is also a growing awareness of the fact that unless a permanent secretariat for Cogeodata is established, much time and effort will be lost. Various approaches to establish this permanent secretariat have been explored and are still under investigation (from Cogeodata Document 29, Dec 1971).

CODATA CONFERENCE

The 3rd International CODATA Conference on the Generation, Compilation, Evaluation and Dissemination of Data for Science and Technology will be held 26-30 June 1972 in Le Creusot, France. The CODATA Conferences are designed to bring together compilers and users of numerical data and representatives of organizations and agencies responsible for the establishment and management of data-compiling groups and data centers of various types from all interested countries and international organizations.

The program of the third conference will reflect the modifications of the scope of CODATA by encompassing "the bio-, geo- and cosmic sciences" and by putting more weight on the general problems of interest of several disciplines. Coordination, correlation, and evaluation in the biologic, geologic, and environmental sciences will be included in the discussions. For further information, contact: CODATA Conference, c/o Prof. Boris Vodar, B.P. 30, 92-Bellemeuse, France.

EXCERPT FROM AGI SUMMARY OF ACTIVITIES for the 3-month period ending 31 Dec 1971

"The GEO-REF staff added 10,759 bibliographic citations to the computer file during the quarter, bringing the total for 1971 to 38,283 citations. ... The GEO-REF file was used to prepare indexes for the 1971 volumes of GSA Bulletin, American mineralogist, Journal of sedimentary petrology, and Canadian journal of earth sciences. During 1972, AGI will prepare indexes for these journals, plus Tectonophysics, Marine geology, Geoderma, Atmospheric and oceanic physics, Geotectonics, Review of geophysics and space physics, Journal of geophysical research, and the American Museum of Natural History's Bibliography and index of micropaleontology - a total of 12 journals. In 1972, the GEO-REF file will be converted to CODEN, a system of 5-character unique abbreviations used to represent serial titles in computer-based files".

"After some delay due to uncertainty about the Phase II guidelines, renewal notices at increased subscription rates were sent to subscribers of the four AGI translation journals. A proposal for terminal support for the Translations Program has been submitted to the National Science Foundation".

EXCERPT FROM AGI SUMMARY OF ACTIVITIES for the 3-month period ending 31 March 1972

"The GEO-REF staff added 15,250 bibliographic citations to the computer file during the quarter. They hope to add a total of 60,000 citations to the file during 1972. The monthly GEO-REF computer tapes have been leased to Marathon Oil Company (Littleton, Colo.), in addition to the National Science Library of Canada and the University of Georgia".

"All of the terms (approximately 30,000) for the third edition of the AGI Glossary have been entered into the data file, and final proofreading and correction are underway. During its meeting on March 15, the Committee on Publications reviewed the progress of the Glossary, discussed details of book production, and considered plans for the next edition".

OTHER NEWS FROM AGI

On 10 March 1972, GEO-REF was awarded a 12-month grant for \$420,000 from the National Science Foundation. GEO-REF looks for self-support by 1975.----Joel J. Lloyd, AGI's director of science information, is president-elect of the National Federation of Science Abstracting and Indexing Services.----AGI has compiled a card file of the addresses and other information for more than 200 professional societies in the earth sciences. If there is sufficient interest in such a list, it will be made available from AGI. Contact: Wendell Cochran, AGI, 2201 M Street, N.W., Washington, D.C. 20037.----An interesting sequence of correspondence has been appearing in Nature after that magazine commented on the "abandoning" of abstracts in geology (26 Nov 1971, v.234, p.167). Joel Lloyd responded (11 Feb 1972, v.235, p.347) and Keith M. Clayton replied (17 March 1972, v.236, p.127-128). Keep watching for a possible tempest in a teapot in future issues of Nature.

BULLETIN SIGNALÉTIQUE

In January 1972, Bulletin signalétique of the Centre National de la Recherche Scientifique (CNRS), Paris, began publishing 44 monthly bibliographical bulletins covering the exact, biological, and medical sciences and technology. Sections 220-227 covering the geologic sciences have absorbed Bibliographie des sciences de la terre issued by the Bureau de Recherches Géologiques et Minières (BRGM), Orleans. The combined publication provides an expanded titles and keywords service. Sections 210, 214, and 216 of Bulletin signalétique are superseded in part by sections 220, 226, and 227. Titles for sections 220-

227 beginning with volume 33 (1972):

<u>sect</u>	<u>title</u>
220	Cahier A. Minéralogie. Géochimie. Géologie extraterrestre.
221	Cahier B. Géologie. Economie minière.
222	Cahier C. Roches cristallines.
223	Cahier D. Roches sédimentaires. Géologie marine.
224	Cahier E. Stratigraphie. Géologie régionale et générale.
225	Cahier F. Tectonique.
226	Cahier G. Hydrologie. Géologie de l'ingénieur. Formations superficielles.
227	Cahier H. Paléontologie.

BIBLIOGRAPHY WORKING GROUP OF GSA

The Publications Committee of the Geological Society of America (GSA) met in Boulder, Colo., 1-2 March 1972, and one result of the meeting was the establishment of a "bibliography working group" chaired by GIS Past President C.F. Burk, jr., of the Canadian Centre for Geoscience Data, Ottawa.

The general purpose of the working group is to review the role of GSA regarding publication and distribution of bibliographic information, and to make specific recommendations regarding the current monthly publication, Bibliography and index of geology, which will undergo critical evaluation from various points of view. The working group will consider a plan whereby the comprehensive, but expensive, hard-copy monthly Bibliography can be replaced by a more responsive medium for disseminating bibliographic information on geology. The group's report will be submitted to the GSA Council in about a year.

GEOPHYSICAL ABSTRACTS IN PRESS

In the Sept 1971 issue of EOS, the transactions journal of the American Geophysical Union (AGU), "Geophysical Abstracts in Press" (GAP) appeared for the first time. GAP is an experiment designed to provide rapid access to a cross-section of the literature in geophysics, thereby making research results available immediately after final acceptance for publication. GAP originally included only AGU journals; recently, abstracts of selected Professional papers of the U.S. Geological Survey have been covered, and the intent is to increase coverage beyond AGU journals.

Abstracts are processed on the day they arrive in the AGU office from journal editors, normally between three months and four months prior to publication in the journal. The abstracts are published in EOS two to six weeks after receipt. Thus they are available to the research community more than two months before the publication of the full article. Mailing addresses are given for the senior authors, enabling readers to contact them directly for preprints or further information.

GAP resulted from discussions in the AGI Committee on Geoscience Information. According to A.F. Spilhaus, jr., AGU executive director, "This committee has been studying possible avenues of evolution that primary journals might follow. This is a matter of major concern because of the ever increasing per-page costs of publication coupled with an increasing number of pages. This latter factor not only compounds the financial problem, but also increases the burden on the individual scientists who must let more and more material slip by him unnoticed. The AGI committee feels that a primary abstract journal might ultimately substitute for the publication of many papers that are now made widely available at great expense but that are of relatively narrow interest. ... The purpose of the present experiment is to test the acceptance and feasibility of a single abstract journal covering a substantial fraction of the literature in geophysics" (from EOS, Nov 1971, v.52, no.11, p.755).

PALYNOLOGY-PALEOBOTANY DATA BANKS

A fact-finding committee of the American Association of Stratigraphic Palynologists, chaired by G.O.W. Kremp (Univ of Arizona) and consisting of an international group of scientists, is looking toward establishing a cosmopolitan organization of comprehensive data banks for palynology, paleobotany, and associated fields. The work consists of 3 phases:

- 1) Compiling for computerization the complete bibliography of the fields involved. This phase is about to reach completion and now must be kept current.
- 2) Compiling of taxa mentioned in these papers, including their geologic, geographic, and ecologic distribution, and their taxonomic status. The backlog on fossil pollen and spores covering Western literature is about 70% complete, and that concerned with dinoflagellates, acritarchs, and chitinozoans has been started by a project ongoing at the Univ of Arizona.
- 3) Recording by means of consistent codes the morphographic data. This phase most likely will be completed with international cooperation.

Reporting in Geotimes (Apr 1972, v.17, no.4, p.30), Dr. Kremp noted that: "Discussions are going on now with scientists in Argentina, Belgium, Canada, Germany, India, Britain, Taiwan and elsewhere to bring to reality the plans concerning a world consortium of palynological data banks. If these efforts are successful palynology might advance into a usefulness that we now can see only dimly".

SPECIAL MAP PROCESSING PROJECT AT LC

For the past 21 years, the Geography and Map Division of the U.S. Library of Congress has sponsored a Special Map Processing Project, first initiated in 1950 for the purpose of processing large volumes of non-current maps and charts received on transfer from various Fed-

eral agencies and libraries. Workers designated from, and supported by, geography depts and libraries serve as temporary processing assistants in the Division during the summer months. For each week of contributed labor, the designated representatives are allowed to select up to 1000 cartographic items from the surplus duplicates for their institutional libraries and map collections.

This very successful project has contributed greatly to the processing of masses of cartographic material at low cost to the Library. By the exchange of surplus duplicates for labor, reference collections have been strengthened in other cartographic centers. The project has also strengthened the Division's professional ties with geography departments throughout the country.

An incidental benefit for participants is the training and experience they receive from working with a large map collection. They also participate in tours to several Federal mapping agencies, and Division professional staff members conduct weekly seminars for project and permanent staff members on such topics as map acquisitions, reference works on the history of cartography, MARC map cataloging procedures, selected maps and atlases to illustrate the history of cartography, and early Oriental maps and atlases.

The number of participants during the 21 successive projects is 280 from 87 colleges and universities. They have processed some two million pieces, of which approx 750,000 were added to the permanent collections of the Division. More than a million and a quarter duplicate maps, charts, and atlases, surplus to the needs of the Library, have been distributed to institutions who have sponsored workers.

TRANSFER of WORLD DATA CENTER A: GLACIOLOGY

In June 1971, World Data Center A: Glaciology, which was housed in the Dept of Exploration and Field Research at the American Geographical Society (AGS), was transferred to the General Hydrology Branch of the U.S. Geological Survey, in Tacoma, Wash. (address: 1305 Tacoma Ave South, Tacoma, Wash. 98402). Glaciological notes, the Center's quarterly listing of accessions, will continue publication under the auspices of the USGS.

Prior to the transfer of the collection to Tacoma, G.K. Hall & Co. issued in book form the author/title, subject, and geographic catalogs of the glaciology collection of AGS' Dept of Exploration and Field Research. These catalogs serve as a guide to the combined holdings of the library of the Dept (which still exists) and the collections of the World Data Center. The 3 volumes are available for \$245 (in the U.S.) or for \$269 (elsewhere) from G.K. Hall & Co., 70 Lincoln St, Boston, Mass. 02111.

GEOLOGIC DATA-HANDLING SYSTEM at UNIV of CAMBRIDGE

The project on the storage and retrieval of geologic data at the Sedgwick Museum in the Dept of Geology, Univ of Cambridge, has reached the end of its first phase. During the course of the project, users' requirements for a geologic data-handling system have been examined and a system has been designed for the input, storage, and processing of data. The package of computer programs developed for these tasks has been used to produce sample catalogs and indexes, and will be adapted for use on the University's new IBM 370/165. The final report of the project will soon be available in the Report Series of the U.K. Office for Scientific and Technical Information (OSTI).

OSTI has now awarded a grant for a second phase of research. This project, costing £18,300 over two years, is under the supervision of H.B. Whittington and is concerned with the evaluation of the whole system. It includes a rigorous testing of the system to meet the needs of the curators of the Sedgwick Museum, an assessment of its cost and effectiveness in this context, and the production of catalogs and indexes of the material as required. In addition, ways will be sought to inform potential users (geologists and other scientists) of this approach to data handling, in the hope that they can be helped to organize and make the best use of their records and data.

Three aspects of storage and retrieval of small and medium-sized files are being given particular attention. First, by providing comprehensive programs for interpreting tagged data produced on tape typewriters, it should be possible to design input formats which closely match the natural format in which the data come to hand. It should also be possible to alter these formats without reprogramming.

Secondly, facilities for extensive data vetting will be provided in order to cut down on the amount of effort now expended in curating data for inclusion in files. An on-line method of data input, using a small computer as interface, will in addition be evaluated.

Thirdly, the files will have a standard data structure. It will be possible without additional programming to make modifications within this structure to meet the needs of each user. Also the search programs will operate on any file arranged with the standard structure.

The programs will be tested by a major pilot study involving the catalog of Lower Paleozoic fossils in the Sedgwick Museum, and several smaller studies with other geologic data.

LATIN AMERICAN SERIES

The U.S. National Section of the Pan American Institute of Geography and History (PAIGH), an official

international organization affiliated with the Organization of American States, is initiating a series of occasional publications on Latin American geography, history, cartography, and, eventually, geophysics. This series is designed to stimulate research and writing on Latin America, to provide a forum for the dissemination and coordination of information, and to keep Latin Americanists abreast of current research priorities and goals. The scope of this series will be quite broad; particular emphasis, however, will be given to the problems of ecology and economic development.

The first of these occasional publications, A bibliography of Latin American coastal geomorphology, by Norbert P. Psuty (Rutgers Univ), was issued Sept 1970. This 17-page bibliography includes references from the early 20th century (although most date from the middle 1950s) and should provide an important guide to current research frontiers and problems in Latin American coastal geomorphology. Cost: 75¢.

Libraries interested in obtaining the publications of this series should contact the U.S. National Section, PAIGH, Dept of State, Rm.8847, Washington, D.C. 20520.

NEWS NOTES

FIRST SUPPLEMENT TO USGS CATALOG DUE SOON! The long-awaited first supplement to the 25-volume Catalog of the United States Geological Survey Library is scheduled to be in subscribers' hands by Sept 1972. This is the latest word from the publisher, G.K. Hall & Co., 70 Lincoln Street, Boston, Mass. 02111. The 175,000-card supplement is a bibliographic record of all publications added to the U.S. Geological Survey Library system between late 1964 and 31 Dec 1971. Although not determined at this writing, the price of the eleven-volume compilation will probably be \$700-775. A blurb describing the work in more detail is available from the publisher at the above address.

NETWORK FOR MEASUREMENT OF EARTH'S SURFACE

An enormous network of data, ultimately numbering 1,350,000 pages of computer printout and results, is being compiled by the Worldwide Geometric Satellite Triangulation Program, a part of the National Geodetic Satellite Program with NOAA. Utilizing computers, more accurate determination of the size and shape of the Earth is now possible, via a worldwide network of observation stations and satellites whose widely separate positions could be accurately determined by simultaneously photographing them against the star background. Surveying, cartography, spacecraft navigation, and other fields concerned with areal measurement on the Earth's surface should benefit from the network. The observational data collected from the worldwide 45-station network will be made available by NASA (in accordance with their regulations) as the machine processing continues.

GEOPHYSICAL TRANSLATIONS

The American Geophysical Union (AGU) has inaugurated a service whereby rough, unedited translations

intended for ultimate publication in one of AGU's Russian journals may be obtained directly from AGU at a nominal, per-page cost. The titles of papers to be translated are published in EOS as soon as possible after the receipt of the Russian original. Included with the unedited Russian translation is a copy of the original text for reference purposes. This service should make it possible for users to receive translations approx 6 weeks after the Russian originals are received in the AGU offices. For further information, contact AGU, 1707 L Street, N.W., Washington, D.C. 20036 (phone: 202/293-1144).

EARTHQUAKES AND LIBRARIES

Requests from the Los Angeles Public Library for money to rebuild two branches devastated by the 1971 earthquake have been denied by the Federal government. The reason: the buildings are not eligible because they were not constructed according to modern earthquake-resistant standards, and Federal money is granted only for repairs, not for building replacement. Even if the buildings are repaired, the two branches will not pass city inspection standards and will not be permitted to open for service.

EARTHQUAKE ENGINEERING INFORMATION CENTER

The National Science Foundation will establish an Earthquake Engineering Information Center, which will be divided in two units: (a) Earthquake Engineering Research Laboratory (Caltech, Pasadena), to be headquarters for collection, evaluation, processing, and dissemination of data about strong earthquake ground motions; and (b) Dept of Civil Engineering (Univ of California, Berkeley), to be the center for information regarding computer methods in structural analysis and for dynamic tests of soils and structures. Basic library facilities and services will be duplicated to provide a relatively complete reference collection at each center, and other services will be divided between the two units.

COMPUTERIZED FILE FOR TOPOGRAPHIC MAPS

The Bancroft Library at the Univ of California, Berkeley, has developed a computerized control file for topographic quadrangle maps. The new system has resulted in a substantial time and cost saving, and has provided a marked improvement in patron service by having an up-to-date list easily available in several places in the library. Libraries may obtain a technical description of the project and the computer program free of charge by writing Phil Hoehn, Map Librarian, Bancroft Library, Univ of California, Berkeley, Calif. 94720.

ROCK MECHANICS INFORMATION SERVICE

The Rock Mechanics Information Service at Imperial College of Science and Technology, London, acts as an international center for rock mechanics and related fields. A fully computerized system provides output in the following forms: the quantity journal, Rock mechanics abstracts; a KWIC index to rock mechanics literature from 1870 to 1968, which is also available in magnetic-tape form; and SDI and retrospective services. Detailed literature searches on specialized topics are also undertaken. With the installation of the new CDC 6600 and 6400 computers the opportunity has been taken to update and improve existing programs while modifying for use on the new system.

UNIVERSITY OF KENTUCKY GEOLOGY LIBRARY

The University of Kentucky Geology Library moved during Dec 1971 from Miller Hall, which was built in the 1800s and where one climbed a 12-ft ladder in order to reach certain publications, into 100 Bowman Hall, a modern, well-lit, air-conditioned building. Activities of interest in the library include plotting and posting earthquakes on a world map from information received from the Smithsonian Institution Center for Short-Lived Phenomena and the National Earthquake Information Center of the U.S. Dept of Commerce. Apollo shots have been plotted also on a Rand McNally map of the moon which is housed in the library, as is the world map for the earthquakes.

HYDROGEOLOGICAL MAP LEGEND

The 101-page International legend for hydrogeological maps, available for \$6 from Unipub Inc., P.O. Box 433, New York, N.Y. 10016, introduces a standardized legend of symbols used in preparing hydrogeological maps. It also includes an international bibliography and a list of published maps, based on the international legend.

JAPANESE OCEANOGRAPHIC DATA CENTER

The Japanese Oceanographic Data Center, established in 1965, collects and analyzes the oceanographic data around Japan, and reports its findings to the World Data Center for Oceanography. The "station data" (physical and chemical data obtained by oceanographic ships at various depths and in various locations in the ocean) are processed on an IBM 360/40 and output onto punched cards for storage, classification, and international interchange. About one million data cards are now available.

STATE GEOLOGICAL SURVEY REPORTS

The Microform Division of Greenwood Press, Inc., is in the process of compiling a bibliography for retrospective collections of the serial reports of State geological surveys. The bibliography will be used in preparing a microform edition of the survey reports as part of Greenwood's Official State Serial Publications microform program. For further information, contact: Microform Division, Greenwood Press, Inc., 51 Riverside Ave, Westport, Conn. 06880 (phone: 203/226-3571).

PERIODICAL SUBSCRIPTIONS

In 1971, the average periodical subscription costs for the subject areas mathematics, botany, and geology were \$20.06, as compared with \$16.71 for 1969 and \$18.11 for 1970.

IMPERIAL OIL COMPUTERIZED INDEXES

Imperial Oil Ltd., Technical Information Services, Calgary, has developed a computerized system to produce indexes based on the material in the Bulletin of Canadian petroleum geology, the Journal of Canadian petroleum technology, the Canadian mining and metallurgical bulletin, and other sources. A second-stage Science Information System (SIS II) represents a cooperative effort to upgrade Imperial's SIS I (which was designed to operate on a tape-oriented computer) to exploit the third-generation computer.

ENVIRONMENTAL AWARENESS READING LIST

The Environmental awareness reading list (EARL), a semi-monthly listing of current publications dealing with environmental matters, compiled by the Office of Library Services of the U.S. Dept of the Interior, is available from the National Technical Information Service on subscription at \$16 per year (\$20 overseas). The citations include full bibliographic information; annotations are included only if they appear in the publications cited. The arrangement is alphabetical by author, or title, and the annual index will include a subject arrangement as well. The selections are intended to reflect the current developments and discussions concerning environmental and natural resources matters appearing in a variety of both popular and technical publications. A list of the journals regularly reviewed is included in each issue of EARL. In addition, more than 100 other publications are reviewed periodically. Subscriptions are available from NTIS, 5285 Port Royal Road, Springfield, Va. 22151.

GEOSCIENCE DOCUMENTATION

Geoscience documentation, the "journal for geoscience information produced by Geosystems, is back on schedule after a more-than-one-year lapse in publication following the February 1971 issue (v.3, no.1). Certain printing problems have been overcome, and subscribers should soon receive all back issues.

OCEAN DATA MANAGEMENT AND IDOE

The Environmental Data Service of the U.S. National Oceanic and Atmospheric Administration will serve as lead agency for data management and information services for U.S. programs in the International Decade of Ocean Exploration (IDOE). Improvement of international environmental data exchange is said to be one of the U.S. goals for the IDOE. The Environmental Data Service plans to establish a systematic procedure to ensure that data will be "adequately" documented, cataloged, stored, and disseminated. All IDOE program data will be distributed internationally as well as within the U.S. Centers providing data services include: the National Oceanographic Data Center, which will handle IDOE data inventories and program information, and chemical, geologic, physical, and biological oceanographic data; the National Geophysical Data Center, for marine geophysical data; and the National Climatic Center, for marine meteorological data.

NSF GRANTS AND CONTRACTS

The following grants and contracts have been awarded recently by the National Science Foundation in support of improved dissemination of geoscience information:

- * Development of a publicly available electronic library of rock analyses (Carnegie Institution of Washington)
- * Development of World Data Center A for Oceanography (U.S. National Oceanic and Atmospheric Administration)

- * Preparation of the Bibliography of fossil vertebrates (Univ of California, Berkeley)
- * Maintenance of 84 foreign standard seismological stations and provision of attendant photographic copying of the original records at NOAA's Seismological Data Center (U.S. National Oceanic and Atmospheric Administration)
- * Cataloging and evaluating previous studies of the geology and geophysics of the deep-water portions of the Gulf of Mexico (Texas A&M Univ)

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