



GSA news & information

VOLUME 4, NUMBER 2

G.S.A. ARCHIVES

FEBRUARY 1982

LETTER TO THE MEMBERSHIP from the *Bulletin* Editors

Many, if not most, of the members of the Geological Society of America joined the Society primarily to receive the publications and to be part of a strong professional organization. The strength of the Society has traditionally resided in the publications program, but that strength has been eroded in the past few years.

We have accepted the task of being Editors of the *Bulletin* with the primary goal of restoring it to its former position as one of the most prestigious geological journals in the world. The obvious way to achieve this goal is to publish only the best papers.

The *Bulletin* is a generalist journal, and manuscripts related to any basic or applied field of geology, geophysics, or geochemistry will be considered. The primary criterion for acceptability for publication will be quality of scientific results. We intend to follow established tradition in the *Bulletin* that papers should report significant interpretations that follow from a sound data base including new data. *Bulletin* articles should report complete and well-documented studies that demonstrate effective use of the scientific method and that lead to conclusions significant to advancement of our science. Review articles of high quality are also welcome. Papers published in the *Bulletin* should be of such quality and written with sufficient clarity that they may reasonably be expected to rank among the classic papers of geology.

Our goal as Editors is to progressively improve the scientific quality of the *Bulletin*. The Board of Associate Editors will carry much of the weight of upholding the highest quality standards by maintaining and strengthening the existing review process. Members of the board will represent all of the subdisciplines of geology, will include experience in all of the major geologic regions of North America, and will be selected from universities, government agencies, and industry. The Associate Editors are to be active scientists whose work has placed them at the top of their respective disciplines. The Associate Editors will be charged to identify and solicit particularly significant papers for the *Bulletin*.

All will be expected to work to maintain a steady increase in quality.

Although most papers in the *Bulletin* are expected to approximate 10 printed pages, and the recommended maximum length is 70 manuscript pages, longer papers of exceptional quality may be accepted. Within budgetary constraints, we anticipate that the *Bulletin* will increase to about 125 printed pages per issue and then maintain that level. Thus, a kind of competition for space in the *Bulletin* will accompany the decision to accept any particular paper, and the exceptionally long paper must of necessity be of such potential significance that it merits displacing shorter papers that might occupy the same pages. In a very real sense, each paper (long or short) must earn the space it occupies. Furthermore, we will not allow the build-up of a large backlog of papers awaiting the press, and we expect to keep publication time to less than one year from the time of submittal of a manuscript. To meet that timetable, we must conduct reviews efficiently and must accept only as many manuscripts as can be accommodated within the page limitations. Ideally, we can achieve timely publication of accepted manuscripts while progressively increasing quality of accepted manuscripts.

Options such as color and foldouts are available on a cost basis to authors; costs will be in addition to the voluntary (nonmandatory) page charges. We are also investigating methods of including large amounts of data (e.g., chemical analyses, stratigraphic sections, petrographic data, etc.) which would be otherwise impossible to publish, in such forms as microfiche cards, data banks, etc. The cost of these options would of necessity be borne by the author. However, we hope to provide the most flexible set of publication options available.

The success of any organization rests on its membership; and, if the publication program of GSA is to prosper, it needs your support. The *Bulletin* has certain advantages which favor its renewed success. Its circulation is one of the largest of
(continued next page)

any journal in the field. In addition to the membership, most university and survey libraries throughout the world receive the *Bulletin*. From the standpoint of an author seeking a forum in which his or her ideas may be widely disseminated, the *Bulletin* is one of the best available. For the *Bulletin*, we hope to receive the very best manuscripts containing new concepts; many of these will be innovative and perhaps con-

Bob Hatcher

Bill Thomas

Robert D. Hatcher, Jr., William A. Thomas
Editors of the *Bulletin*

UPDATE

Fulbright Awards to U.S. Scholars, 1981-1982

Following is a list of Fulbright Awards to U.S. Scholars, 1981-1982, for university teaching and advanced research abroad (earth science):

Nolan B. Aughenbaugh—Prof Geological Engineering, U Missouri, Rolla. Appraise problems relating to an expansion of coal mining in New Zealand; U Otago, Dunedin, New Zealand, 3/81-8/81.

Robert A. Gastaldo—Asst Prof Geology, Auburn U, Alabama. Junior researcher on coal basin geology; U Utrecht, Netherlands, 3/82-6/82.

Yvonne Herman-Rosenberg—Assoc Prof Geology, Washington State U, Pullman. Research on Black Sea quaternary benthonic foraminifera as indicators of sea level fluctuations; U Bucharest, Romania, 5/82-7/82.

James D. Howard—Prof Marine Geology, Skidaway Institute of Oceanography, Savannah, Georgia. Research on trace fossils and depositional facies in proterozoic sediments of the Godavari Valley; Indian Statistical Institute, Calcutta, India, 11/81-2/82 (Indo-American Research Fellowship).

Markes E. Johnson—Asst Prof Geology, Williams College, Williamstown, Massachusetts. Research on paleobathymetry and community evolution in the lower Silurian of Norway; U Oslo, Norway, 3 months within 7/81-7/82.

George V. Keller—Head and Prof Geophysics, Colorado School of Mines, Golden. Lecture on exploration for geothermal energy; Moscow State U, U.S.S.R., 9/81-12/81.

Robert D. Lawrence—Assoc Prof Geology, Oregon State U, Corvallis. Lecture on structural geology; U Peshawar, Pakistan, 9/81-6/82.

Walter H. Munk—Prof Oceanography, Scripps Inst Oceanography, La Jolla, California. Research on mapping the ocean by remote acoustic sensing; U Cambridge, United Kingdom, 9/81-6/82.

George I. Smith—Geologist, Climate Program Coordinator, U.S. Geological Survey, Menlo Park, California. Research on Pleistocene geology; Australian National U, Canberra, Australia, 4/81-10/81.

Norman D. Smith—Prof Geological Sciences, U Illinois, Chicago. Research on sedimentology of the Kosi River deposits; School Tropical Medicine, Calcutta, India, 1/82-4/82 (Indo-American Research Fellowship).

George D. Stanley, Jr.—Geologist/Research Associate, National History Museum, Smithsonian Institution, Washington, D.C. Comparative study of Triassic corals and reef structures of Western North America and Northern Limestone Alps; U Erlangen, West Germany, 7/81-5/82.

Carl I. Wunsch—Prof Physics Oceanography, Massachusetts Inst of Technology, Cambridge. Research on the application of inverse methods, acoustic tomography and satellite altimetry to the problem of determining the ocean circulation through global measurement systems; U Cambridge, United Kingdom, 9/81-6/82.

troversial. Papers that are "ahead of their time" are the most difficult to review and evaluate, but they may be the classic papers of several decades hence.

Your suggestions for further improvements in the *Bulletin* will be appreciated, and we look forward to receiving more good manuscripts from the GSA membership.

NEW: History of Geology Division Award

The History of Geology Division has voted to establish an award for significant contributions to our understanding of the history of the geological sciences. The award will be a Paul Revere bowl of polished pewter accompanied by a certificate.

The division is planning to present the first award at the 1982 meeting in New Orleans. It is now seeking (1) voluntary contributions from its affiliates to support the award and (2) nominations, from any member of GSA, for the 1982 candidate. According to criteria adopted by the division, achievements deserving of the award may include any of the following:

... the publication of papers or books of distinction that contribute new and profound insight into the history of geology (based either on original research or on a synthesis of existing knowledge); discovering rare source materials and making them available to scholars; providing comprehensive bibliographic surveys; editing a thematically integrated collection of articles; organizing meetings and symposia that generate interest in the history of geology; conducting innovative research into original sources; making creative interpretations of data; translating key materials; and performing exceptional service to the History of Geology Division.

Please make out checks to GSA Foundation; earmark them for the History of Geology Award Fund; mail them to Clifford M. Nelson, U.S. Geological Survey, 904 National Center, Reston, VA 22092.

Please send your *nominations*, accompanied by a statement of the candidate's accomplishments, to Ursula B. Marvin, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138.

Nominations must be received by April 1, 1982.

GSA News & Information

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Prepared from contributions from the staff and membership by John C. Frye, Executive Director; James R. Clark, Production and Advertising Sales Manager; June Thomas and Ann H. Fogel, Production Assistants.



CENTENNIAL NEWS

Workshops on the Centennial Field Guides planned for section meetings

The Centennial Field Guide project is about to get under way. The text printed below grew out of a meeting with section representatives at Cincinnati. There will be open Centennial Field Guide workshops at all section meetings this spring. Time and place will be indicated in the program books for each meeting and announced in this column in March. These field guides are an opportunity to document some of the "ground truth" for the synthesis volumes on the Geology of North America. Plan to come to the workshops and help prepare Field Guides that we can all be proud of.

1. *Rationale.* The Centennial Field Guides will provide short descriptions of localities throughout North America that show important geologic relations. Their purpose will be to provide geologists with a guide to key localities where important aspects of regional geology can be examined, or where superb examples of geological principles are displayed. They should be designed for use either for self-teaching or as a basis for field trip stops.

2. *Theme.* The 100 best localities from the area of each section—in acknowledgment of the Centennial.

3. *Type of publication.* A 400-page 8½ x 11 book, published with a choice of either hardbound or punched for a 3-ring binder and sold as a unit (no separates). One book for each GSA section.

4. *Organization of contents.* An editor or small editorial committee will be identified for each section to evaluate site proposals and to arrange the de-

scriptions of the chosen localities in some geologically logical manner within the Field Guide.

5. *The text.* Each locality will be allotted no more than four (4) published pages, including illustrations and references (one published page absorbs four double-spaced typescript pages). The authorship for each locality description will be indicated in the text with the description.

Text for each locality should include (a) *locality information* in the form of an index map, preferably from a 1:24,000 topographic base, with the site marked and the quadrangle, county, state, and/or (if appropriate) latitude/longitude coordinates indicated; (b) *accessibility information*, indicating how the locality can be reached (by foot, 4 WD, passenger car, bus), and, if on private land, giving precise instructions for obtaining permission to visit it; (c) *geologic information* about the locality, including a description and/or illustration of key features of the site that will enable the interested professional to fully understand the relationships demonstrated there and their significance; (d) *illustrations*, which can be line drawings with patterns as needed, or black and white photographs with clear labels of the important information being illustrated; and (e) *key references* which can lead the user into the literature on the locality.

6. *The localities.* Each locality should illustrate important geological relations that bear on an understanding of regional geology (structural relations, intrusive relations, stratigraphy, key landforms, mineralization, etc.) or be an outstanding example of an illustration of some basic geological principle. Mineral or fossil collecting sites are *not* to be included.

Each locality should be robust and accessible by wheeled vehicle, or foot—preferably with a minimum of complicated arrangements with owners to obtain access.

7. *Schedule of production.* All localities to be included in the Field Guides should be identified by June 1983. Manuscripts and illustrations for each locality should be to the volume editor(s) no later than January 1, 1984. Publication will be within one year of receipt of the book manuscript at GSA headquarters. Thus, the Field Guides should be published during 1985.

STUDENT ASSOCIATES, MEMBERS, FELLOWS

Are you deducting your member discount from your orders for GSA books and maps? GSA order clerks cannot deduct it for you. You must do it yourself. It is easy to do. Here's how . . .

1. Write your GSA I.D. number opposite your name on your order. This is the 8-digit number on your membership card and mailing labels on *News and Information*, *Geology*, and *Bulletin*.

2. Deduct the discount from the total amount of your order. (Colorado residents: do this before you add the appropriate sales tax.) See reverse side of your membership card for the amount of discount allowed.

3. Send your order and payment to GSA Order Department, P.O. Box 9140, Boulder, CO 80301.

Complete details of Membership Purchase Privileges are printed on the back side of your membership card. Keep your card handy for reference whenever you are placing an order.

UPDATE

· ATTENTION ·

WE NEED YOUR COLOR SLIDES

The preparation of a slide presentation for use by student groups to promote membership in the Society was recommended at the last Council meeting by the Membership Committee. If you have slides of GSA field trips, section meetings, Penrose Conferences, or other Society activities that you are willing to donate for possible use in this project, please send them to headquarters. No return, no guarantee, no credit line, just our thanks.

Memorial preprints ready for free distribution

The following memorial preprints are now available, free of charge, by writing to GSA, P.O. Box 9140, Boulder, CO 80301:

Ian Campbell
Morgan J. Davis

James Edward Gill
James Gilluly
Arthur Lloyd Howland
Theodore August Link
John Beaver Mertie, Jr.

Percival Robertson
Robert Ingersoll Roth

by Richard H. Jahns
by Wallace E. Pratt and
Dean A. McGee
by P. R. Eakins
by J. Fred Smith, Jr.
by E. C. Dapples
by W.D.C. Mackenzie
by William C. Overstreet and
Robert M. Chapman
by Frederick C. Marshall
by John W. Skinner

33rd Annual Highway Geology Symposium

The 33rd Annual Highway Geology Symposium will be held in Vail, Colorado, September 15--17, 1982. For further information, contact Jeffrey L. Hynes, Colorado Geological Survey, 1313 Sherman St., Rm. 715, Denver, CO 80203. Phone (303) 866-2611; or Martin C. Everitt, U.S. Forest Service, 11177 W. 8th Ave., Box 25127, Lakewood, CO 80225. Phone (303) 234-4405.

Input needed for three career information booklets

The American Association for the Advancement of Science, Office of Opportunities in Science, funded by the Women's Educational Equity Act Program (Department of Education), will produce three career information booklets—one each for mathematics and computer science, engineering fields, and the physical sciences. The project staff are now collecting samples of career pamphlets about work in these fields and information about financial aid for education and training. These booklets are being designed to be relevant and especially inspirational to American Indian, Black, Mexican American, and Puerto Rican girls, and will present minority women professionals in the designated fields as role models. Minority women scientists and individuals with information on careers are encouraged to contact Paula Quick Hall or Patricia Boulware for details. S/E Careers Project, AAAS-OOS, 1776 Massachusetts Avenue, N.W., Washington, DC 20036, phone (202) 467-5433.

Necrology

Notice has been received of the following deaths: Charles L. Camp, San Jose, California; Denis E. Marchand, Menlo Park, California; Frederick L. Stead, Dallas, Texas; Alfred D. Wandke, Dallas, Texas.

NAGT provides summer field course clearinghouse service

Students who are having trouble finding an open summer geology field course and summer field camps that have unfilled openings can be put in touch with each other by contacting Tom Hendrix, Department of Geology, Grand Valley State Colleges, Allendale, MI 49401, ph. (616) 895-6611, X191. Updates of field camp openings will be made March 1 and April 1 and will be sent free of charge to students upon request. Inquiries about openings should be by letter (with self-

addressed, stamped envelope for reply) or by phone (no collect calls will be accepted). Field camps that wish to be included with the service should fill out the form below and return it to Tom Hendrix (address above). Requests for field camp updates will be sent out February 15 and March 15.

This service is not meant to evaluate new or existing summer field courses or to solicit enrollment for any particular camp.

Summer Field Course Openings

Institution _____ Course Site _____
Date(s) of Course(s) _____ Sem. or Qtr. Credits _____
Will your course accept outside students? _____ Yes _____ No
Number of outside openings remaining as of _____ (date)
If full, will you accept names for a waiting list? _____ Yes _____ No
Name and address of Field Camp Director: _____

Calendar of Penrose Conferences

April 11-16, 1982

THE ANTARCTIC PLATE: A GLOBAL PERSPECTIVE
Skyland Lodge Shenandoah National Park, Luray, VA 22835

Conveners: Ian W. D. Dalziel, Lamont-Doherty Geological Observatory, Columbia University, Palisades, NY 10964; David H. Elliott, Institute of Polar Studies, Ohio State University, Columbus, OH 43210

May 20-25, 1982

HYDRODYNAMICS AND GEOCHEMISTRY OF ORE GENERATION IN SEDIMENTARY ENVIRONMENTS
Millstone Lodge, Gravois Mills, MO 65037

Conveners: William C. Kelly, Department of Geological Sciences, University of Michigan, Ann Arbor, MI 48109; John H. Sharp, Department of Geology, University of Missouri, Columbia, MO 65211; Donald E. White, USGS, 345 Middlefield Road, Menlo Park, CA 94025

May 23-28, 1982

TECTONIC HISTORY OF THE OUACHITA OROGEN
DeGray State Park Lodge, Arkadelphia, AR 71923

Conveners: William A. Thomas, Dept. of Geology and Geography, University of Alabama, P.O. Box 1945, University, AL 35486; George W. Viele, Dept. of Geology, University of Missouri, Columbia, MO 65201.

August 8-13, 1982

ORIGIN OF FLUIDS AND METALS IN PORPHYRY AND EPITHERMAL MINERAL DEPOSITS
Holiday Inn, Dillon, CO 80435

Conveners: P. James LeAnderson, Department of Geology, Colorado School of Mines, Golden, CO 80401; Arthur A. Bookstrom, Climax Molybdenum Company, 13949 West Colfax Avenue, Golden, CO 80401; Steve Ludington, USGS, 959 National Center, Reston, VA 22092

August 15-29, 1982

MODELS OF DIAGENESIS IN CLASTIC RESERVOIRS
Kona Surf Hotel, Kailua Kona, HI 96740

Conveners: James R. Wood, Jr., Chevron Oil Field Research Company, 3282 Beach Boulevard, LaHabra, CA 90631; James R. Boles, Department of Geological Sciences, University of California, Goleta, CA 93106; Ian E. Hutcheon, c/o James R. Wood, Jr., Chevron Oil Field Research Company, 3282 Beach Boulevard, LaHabra, CA 90631

August 22-28, 1982

LARAMIDE DEFORMATION OF THE ROCKY MOUNTAIN FORELAND

Rock Creek Mine Lodge, Red Lodge, MT 59068

Conveners: David R. Lageson, Department of Earth Sciences, Montana State University, Bozeman, MT 59717; Gary D. Couples, AMOCO Production Company, 1670 Broadway, Denver, CO 80202

September 7-13, 1982

THE SONOMA OROGENY AND PERMIAN TO TRIASSIC TECTONISM IN WESTERN NORTH AMERICA
Scott Shady Court Motel, Winnemucca, NV 89445

Conveners: John H. Stewart, USGS, 345 Middlefield Road, Menlo Park, CA 94025; Hubert Gabrielse, Geological Survey of Canada, 100 West Pender Street, Vancouver, BC V6B 1R8; Walter S. Snyder, Research and Development, Phillips Petroleum Company, Bartlesville, OK 74004

MORE UPDATE

Tenth International Congress of Carboniferous Stratigraphy and Geology

The Permanent Committee and Spanish Organizing Committee of the Tenth International Congress of Carboniferous Stratigraphy and Geology take pleasure in inviting you to attend this Congress, which will be held in Madrid, 12-17 September 1983.

X-ICC is co-sponsored nationally by the Comisión Nacional de Geología and Instituto Geológico y Minero de España, with the collaboration of the Universities of Madrid (Complutense) and Oviedo and Empresa Nacional Adaro de Investigaciones Mineras. Additionally, the Congress will depend on the cooperation of the Serviços Geológicos de Portugal and the University of Porto.

Inquiries concerning the Congress should be addressed to

Comité Organizador del X Congreso Internacional del Carbonífero
Instituto Geológico y Minero de España
Ríos Rosas, 23, Madrid (3), Spain

November 1982 international conference

An International Conference on the Petroleum Geology of the Southeastern North Sea Including the Onshore Areas is scheduled for November 24-26, 1982, at The Hague, The Netherlands.

For information, contact Netherlands Congress Centre, P.O. Box 82000, 2508 EA, The Hague, The Netherlands. Telephone (0) 70-51.28.51 / Telex 31700 necon nl

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Notice to all Student Associates, Members, and Fellows!

The price of the Membership Certificates is being changed from \$8.00 to \$10.00.

If you are interested in ordering one of the Membership Certificates, please contact the Membership Department, GSA headquarters, for information.

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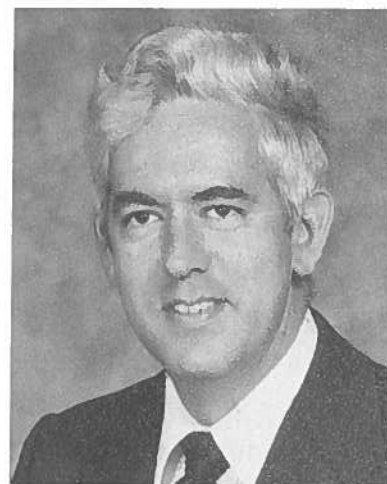
MEET YOUR GSA EDITORS

Editors for the *Bulletin*

Robert D. Hatcher, Jr., one of the Editors of the *Bulletin*, is Professor of Geology at the University of South Carolina, Columbia, South Carolina. Bob is currently serving as Councilor of GSA.

Born in Madison, Tennessee, October 22, 1940, he received his B.A. in 1961 and M.S. in 1962 from Vanderbilt University and the Ph.D. in geology in 1965 from the University of Tennessee. He was employed by Humble Oil and Refining Company in 1965-1966; he served on the faculty of Clemson University from 1966 to 1978; and he was Professor of Geology at Florida State University, 1978-1980.

His interest in the nature and origin of orogenic belts has led him to current projects in the Blue Ridge and western Piedmont of the Carolinas and Georgia. Application of new geophysical data toward the solution of large-scale geologic problems in the Appalachians has been another research undertaking. Cooperative research projects with the U.S. Geological Survey and COCORP (at Cornell University) have involved interpretation of magnetic, gravity, and seismic reflection data from the Appalachians. Bob has emphasized the importance of integrated study in his work in solving both local and tectonic problems.



Robert D. Hatcher, Jr.

William A. Thomas, one of the Editors of the *Bulletin*, is Professor of Geology at the University of Alabama, Tuscaloosa, Alabama. His current research focuses on stratigraphy and structure of the southern Appalachians and adjacent foreland basins and on Appalachian-Ouachita structures beneath the Gulf Coastal Plain. This work is aimed at better understanding of the timing of Appalachian orogenesis primarily from the perspective of evolution of clastic wedges and thrust belt structures. Because clastic wedges encompass significant deposits of petroleum and coal, results of the work are applicable to energy resources as well. His publications are concentrated on Appalachian-Ouachita geology but include studies in the Gulf Coastal Plain and Rocky Mountains.

Thomas, who was born in Kentucky in 1936, received B.S. (1956) and M.S. (1957) degrees in geology from the University of Kentucky and the Ph.D. degree in geology from Virginia Polytechnic Institute in 1960. He was employed as a geologist by The California Company (Chevron) from 1959 to 1963 and has held faculty appointments at Birmingham-Southern College (1963-1970), Queens College of the City University of New York (1970-1972), and Georgia State University (1972-1979). He also served as chairman of each of those departments. Thomas, a Fellow of the Geological Society of America, has served the Society as General Chairman of the 1980 Annual Meeting in Atlanta, as Vice-Chairman of the Special Publications Study Committee, and is currently a member of the Membership Committee. He and his wife Rachel have two daughters.



William A. Thomas

Editor for *Geology*

Eldridge M. Moores, born in Phoenix, Arizona, October 13, 1938, received his B.S. degree (with honor) in geology from the California Institute of Technology in 1959. He received his Ph.D. degree from Princeton University in 1963; his thesis concerned Late Tertiary tectonics in the eastern Basin and Range Province. From 1963 to 1966 he was a postdoctoral fellow at Princeton, during which time he studied the Vourinos Ophiolite complex in northern Greece. He has been on the staff of the University of California, Davis, since 1966, where he currently is a Professor of Geology. During this



Eldridge M. Moores

(Moore, continued)

time, he has worked extensively on problems of ophiolites, Alpine ultramafics, and the tectonics of ophiolite-bearing deformed belts. He also has maintained an interest in the paleontologic consequences of plate tectonics. He has done field work in Greece, Cyprus, California, and Pakistan, and has traveled in the U.S.S.R., the Mediterranean region, the Greater Antilles, the western Pacific, and Canada, pursuing ophiolite-related tectonic problems. He is fairly fluent in Greek, French, and German and can survive in Italian. He is married to the former Judith Riker of Newburgh, N.Y., and they have three children. His hobbies include violoncello, piano, hiking, and old house repair.

Editor for all GSA books

The Editor for GSA books, W. Glen E. Caldwell, is Head of the Department of Geological Sciences, University of Saskatchewan, Saskatoon, Canada. Born in Millport, Scotland, in 1932, Caldwell received the B.Sc. in geology in 1954 and Ph.D. in 1957 from the University of Glasgow. He was Assistant Lecturer at that university in 1956-1957. He has been a member of the faculty at the University of Saskatchewan since 1957.

Caldwell was chairman of the American Commission on Stratigraphic Nomenclature, 1976-1977; chairman, Earth Science Grants Selection Committee, National Research Council, Canada, 1976-1977; chairman, Scientific Publications Grants Selection Committee, Natural Science and Engineering Research Council, 1980-1981; and is currently a member of the Advisory Board on Scientific Publications to the National Research Council. He is a Fellow of the Royal Society of Canada; the Geological Society, London; the Geological Association, Canada (president, 1980-1981); and the Geological Society of America. He is a member of the Paleontological Society and the Association of Earth Science Editors, among others.

To his publishing credit, he is coauthor of *Cretaceous Rock and their Foraminifera in Manitoba Escarpment*, 1981; and has been author of numerous articles. He was editor of *Cretaceous System in Western Interior of North America*, 1975, and has been an associate editor of the *Canadian Journal of Earth Sciences*, the *Bulletin of Canadian Petroleum Geology*, and *Geoscience Canada*.

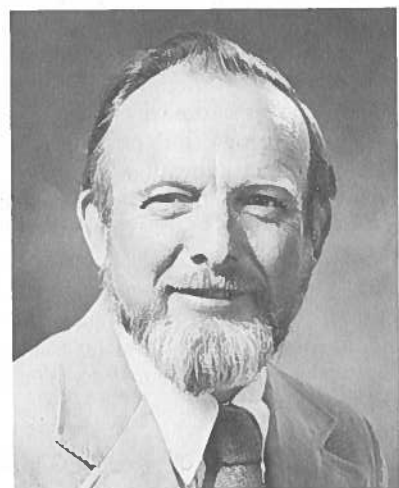


W. Glen E. Caldwell

Editor for the GSA Map and Chart series

Jack Reed joined the U.S. Geological Survey in 1953 after completing graduate studies at Johns Hopkins University where he received his Ph.D. in 1954. His Survey assignments have included photogeologic mapping on the Colorado Plateau; reconnaissance geologic mapping of the Mount McKinley quadrangle, Alaska, and the Leadville quadrangle, Colorado; and detailed mapping, structural, and petrologic studies in the central and southern Appalachians and the Teton Range, Wyoming. During a tour of active duty with the U.S. Army Corps of Engineers, he helped develop methods for the preparation of terrain intelligence maps in southern Alaska and the Coast Ranges of California. He was coeditor of the volume *Studies in Appalachian Geology* in honor of Ernst Cloos, and he prepared the tectonic map that accompanied the volume. He has served as Chief of the Eastern States Branch and Chief of the Office of Environmental Geology.

Jack is currently engaged in studies of the Precambrian rocks of northern New Mexico, is serving as coeditor of the D-NAG volume on the Precambrian of the conterminous United States, and is one of the compilers of the new geologic map of North America.



Jack Reed

ROCKY MOUNTAIN SECTION, GSA, May 7-8, 1982

The 35th Annual Meeting of the Rocky Mountain Section of the Geological Society of America will be held on the campus of Montana State University, Bozeman, Montana, May 7 and 8, 1982, with pre- and post-meeting field trips. The meeting will be hosted by the Department of Earth Sciences at Montana State University.

REGISTRATION

Registration is required for all those attending the meeting, field trips, social events, and exhibits. Student Associate Members of GSA and those students who are not Associate Members will be offered reduced registration rates upon presentation of student verification. Guests not formally attending the technical sessions and field trips are welcome and will not be charged a registration fee.

Preregistration is encouraged by the local committee so that proper plans can be made for the meeting. *Please mail the attached preregistration form together with check payable to MSA-GSA to*

Dr. Stephan G. Custer
Registration Chairman
Department of Earth Sciences
Montana State University
Bozeman, MT 59717

Registered field trip participants may pick up their packets in the lobby of Holiday Inn, North 7th Avenue and I-90, from 7:00 to 9:00 p.m. on the evenings of May 4 and 5, and on the mornings prior to departure of each field trip. Meeting registration will be in the lobby of the Holiday Inn from 1:00 to 9:00 p.m., May 6, and will be conducted on the second floor foyer of Reid Hall on the MSU campus from 7:00 a.m. to 4:00 p.m., May 7 and 8.

Requests for advance registration and field trip refunds will be honored in full through April 1, 1982. After April 1, 25 percent of the total will be deducted from all refunds. An exception to this rule will be made for oversubscribed or cancelled field trips which will be refunded in full regardless of the date.

GENERAL PROGRAM

Technical Sessions: Two days of technical sessions will be held in Reid, Johnson, and Gaines Halls on the MSU campus, May 7 and 8. Depending upon the abstracts submitted, there will be sessions on tectonics and structural geology, geomorphology, paleontology, stratigraphy and sedimentology, economic geology, engineering and environmental geology, geochemistry, geophysics, mineralogy and petrology, hydrogeology, general geology, and geologic education.

Student Paper Awards: The Rocky Mountain Section will award a Brunton International Compass to the first-place winner and three Bausch and Lomb Hastings triplet hand lenses to the runners-up in the student paper competition. To be eligible for these awards, papers must be single-authored by students. Students should identify themselves on their abstract forms. *Initial judging will be based on the abstract: final judging will consider quality of the presentation.*

Symposia:

1. Structure and Tectonic Evolution of the Fold and Thrust Belt (David R. Lageson, Convener)

a. Structural Geology of the Western Montana Fold and Thrust Belt (Edward T. Ruppel, Chairman)

b. Tectonics and Regional Geophysics of the Northwestern United States (M. Dean Kleinkopf, Chairman)

c. Oil and Gas Resources of the Northern Rocky Mountain Region (John Tonnsen, Chairman)

2. Geologic Aspects of the Disposal of High-Level Nuclear Waste in Igneous Rocks (Klaus Keil, Convener; Al Lappin, Co-Convener)

Projection: Carousel projection equipment will be provided for 2" x 2" (35mm) slides only. Please bring your own identified and loaded carousel trays. Dual projection will be arranged for symposia papers only.

Poster Sessions: One or more poster sessions will be scheduled for individuals who request that form of presentation. An award will be given for the poster session judged to be highest in quality.

SPECIAL EVENTS

Welcoming Party: There will be a no-host welcoming party at the Museum of the Rockies, South 7th Avenue, MSU campus, from 8:00 to 10:00 p.m., Thursday, May 6. All registrants and guests are invited to renew field experiences with fellow geologists amidst the interesting museum atmosphere.

GSA Banquet: The GSA banquet will be held in the Banquet Room of the Ramada Inn, North 7th Avenue at I-90, on Friday, May 7. A social hour will precede the banquet at "Poolside" of the Ramada at 6:00 p.m. The banquet will start at 7:00 p.m. Guest speaker will be Dr. John C. Maxwell, Professor of Geology at the University of Texas and Past President of GSA. Dr. Maxwell is internationally known for his work in structural geology and his theme, centered on the current projects in geodynamics, will appeal to an audience with a variety of backgrounds. Tickets may be available until 9:00 p.m., Thursday, May 6. To guarantee a place at the banquet, preregistration is recommended. All registrants and guests are welcome.

Luncheon and Annual Meeting of the Rocky Mountain Section, GSA: The luncheon and business meeting will be held in the Mullan Hall Dining Room, MSU campus, on Saturday, May 8, from 12:00 to 2:00 p.m. A large room has been reserved for this occasion and all registrants are invited to participate in the fellowship. Dr. Digby McLaren, President of GSA, will describe the new direction in which the Society is moving. The Student Paper and Poster Session Awards will also be presented at this time.

Guest Program: Guests accompanying registrants are invited to check at the Registration Desk for information about the special programs being arranged. Weather permitting, these will include a guided mountain forest walk, and geological and historical tours to places of local interest. A special non-fee registration will be provided.

Meetings: The Management Board will meet at breakfast in the Dining Room of the Hedges Hall Cafeteria, west side MSU campus, at 7:00 a.m., Saturday, May 8. Principal business will involve the transition for the 1983 joint meeting with the Cordilleran Section in Salt Lake City.

GSA Campus Representatives Breakfast: The Rocky

PREREGISTRATION DEADLINE: April 1, 1982

Mountain Section will host a breakfast meeting at 7:00 a.m., Friday, May 7, in the Hedges Hall Cafeteria, west side of the MSU campus. Dr. Stanley S. Beus will chair this meeting to discuss the role of the Campus Representative, the campus image of GSA, and Student Associate Memberships. All Campus Representatives are urged to attend.

Structure-Tectonics Division Luncheon: A luncheon for members of the Structure-Tectonics Division of GSA will be held Friday, May 7, from 12:00 to 1:30 p.m. in the Hedges Hall Cafeteria, west side of the MSU campus. The direction of this new and exciting division will be discussed, as well as plans for the near future. All interested geologists are encouraged to attend and participate in this new endeavor.

NAGT Luncheon: The North-Central Section of the National Association of Geology Teachers will hold its annual meeting in conjunction with the Rocky Mountain Section of GSA. A special NAGT luncheon will be held Friday, May 7, from 12:00 to 1:30 p.m. in the Hedges Hall Cafeteria. A NAGT program is planned to run concurrently with the GSA technical sessions.

Centennial Program Committee Meeting: Dr. A. R. "Pete" Palmer, of GSA, will conduct a workshop on the Centennial Program from 2:00 to 4:00 p.m., Friday, May 7, in Room 101, Reid Hall.

PREREGISTRATION FORM

35th Annual Meeting, Rocky Mountain Section, Geological Society of America
Bozeman, Montana
May 7-8, 1982

PREREGISTER BEFORE APRIL 1, 1982

Name _____

Address _____

City _____ State _____ Zip _____

Affiliation (for badge) _____

GSA Member: yes no

(please check if applicable)

Student Speaker Student Poster Professional Speaker Professional Poster

FEES

	Number of Persons	Before April 1	After April 1	Amount
Professional				
GSA Member	_____	\$20.00	\$25.00	\$ _____
Non-member	_____	25.00	30.00	_____
Student				
GSA Member or Student Associate	_____	5.00	10.00	_____
Non-member	_____	10.00	15.00	_____
Guest	_____	0.00	0.00	0.00
Banquet	_____	9.00	10.00	_____
GSA Luncheon (to be paid at cafeteria-\$2.85)	_____			0.00
Structure-Tectonics Division Luncheon (to be paid at cafeteria-\$2.85)	_____			0.00
NAGT Luncheon (to be paid at cafeteria-\$2.85)	_____			0.00
Premeeting Field Trips				
1. Yellowstone Valley	_____	18.00		_____
2. Fold and Thrust Belt	_____	60.00		_____
3. Volcanic & Intrusive Rocks	_____	18.00		_____
4. LaHood Formation	_____	18.00		_____
5. Archaeology & Geology	_____	5.00		_____
Intrameeting Field Trip (\$3 to be paid at meeting)				
6. Gallatin Valley (indicate interest)	yes _____ no _____			0.00
Postmeeting Field Trip				
7. Field Teaching (indicate interest)	yes _____ no _____			0.00

TOTAL \$ _____

Please make check payable to MSU-GSA and send to
Dr. Stephan G. Custer
Registration Chairman
Department of Earth Sciences
Montana State University
Bozeman, Montana 59717

ROCKY MOUNTAIN SECTION, GSA

GENERAL INFORMATION

Exhibits: Space in the meeting area is available for technical and educational exhibits. For further information, contact Dr. David R. Lageson, Exhibits Chairman, Department of Earth Sciences, Montana State University, Bozeman, MT 59717, by April 1.

Student Financial Assistance: Limited funds are available from the Rocky Mountain Section on a first-come, first-served basis to help Student Associate Members of the Society participate in this meeting. Student Associates delivering a paper or poster session should apply by April 2 for financial assistance to Dr. Donald L. Smith, Department of Earth Sciences, Montana State University, Bozeman, MT 59717. Preregistration for the meeting is required for a student to be eligible. Successful applicants will be notified prior to the meeting. Awards may be picked up at the registration desk.

General Food Service: Participants at this meeting will be

welcome at the Hedges and Mullan Hall dining complexes for general food service in lieu of those at the Student Union Building, which is being remodeled at this time. It will be most convenient to plan lunches on campus because prompt accommodation is assured at very reasonable prices and public transportation to downtown eating establishments will not generally be available at this time of day.

Museum of the Rockies: The Museum of the Rockies is a university-community education resource dedicated to the interpretation of the physical and cultural heritage of the Northern Rocky Mountains. This region is a source of pride and wonderment because of its physical and cultural diversity. 'One Place Through All Of Time' is the concept that weaves a thread of historic continuity through all aspects of the Museum, from exhibits and programs to the gift shop. A special invitation is extended to meeting participants to see the museum exhibits.

FIELD TRIP INFORMATION

Registration by April 1 is required for all field trips. *Field trip registrants must also register for the meeting.* All trips will depart from and return to the Ramada Inn parking lot in Bozeman on North 7th Avenue unless otherwise indicated. Participants are encouraged to prepare for the whimsical spring weather of the Northern Rockies.

Premeeting

1. Cenozoic history of the Yellowstone Valley south of Livingston, Montana (May 6—leave 8:00 a.m.; May 6—return 6:00 p.m.). Leaders: J. Montagne and R. A. Chadwick, Montana State University.

This trip offers a comprehensive study of the Cenozoic geology of the Yellowstone Valley and the flanks of the adjacent Beartooth and Galatin Ranges. Short hikes will allow hands-on inspection of mountain glacial sequences as well as of terminal and lateral features of the large Yellowstone piedmont ice lobe. Many of these deposits have been offset by the Deep Creek fault which defines the west side of the Beartooth Range. Other highlights include visits to an Eocene andesitic vent complex with various breccia types and to a Pliocene basalt flow. Late Miocene basin-fill stratigraphy will be studied at White Cliffs. Farther south, in Yankee Jim Canyon, the trip will pass through a large rockslide that dammed the Yellowstone River and finally gave way to a catastrophic flood. The trip will culminate on the north border of Yellowstone Park, where giant flood bars can be seen and where views of both Laramide and post-Laramide tectonic features are outstanding. **Limit: 40; Cost: \$18.** Includes bus fare, lunch, and guidebook.

2. Geology of the fold and thrust belt, west-central Montana (May 5—leave 8:00 a.m.; May 6—return 6:00 p.m.). Leaders: D. R. Lageson, Montana State University; H. W. Dreser, Montana College of Mineral Science and Technology; and C. J. Schmidt, Western Michigan University.

This trip is integrated with the structure/tectonics symposium on the Northern Rocky Mountains region. The structural architecture and tectonic evolution of the west-central Montana salient of the Cordilleran fold belt will be studied on a route from Bozeman through White Sulphur Springs, Helena, Deer Lodge, Butte, and Three Forks. This is an area of tremendous mineral wealth and as yet-undetermined hydrocarbon potential. The spatial and temporal overlap of at least five tectono-magmatic terranes will be examined: (1) the deformed foreland region ("Dillon block"), characterized by Archean-cored ranges bounded on one or more flanks by Laramide faults; (2) the fold and thrust belt, characterized by thin-skinned telescoping of Proterozoic and Phanerozoic sedimentary and igneous rocks; (3) the intrusive and extrusive igneous terranes of the Boulder batholith and Crazy Mountains basin; (4) zones of Laramide strike-slip faults inherited from ancestral crustal weaknesses; and (5) the

basin-and-range style of deformation that has overprinted earlier tectonic fabrics. **Limit: 80; Cost: \$60.** Includes bus fare, 2 lunches, motel in Helena, and guidebook.

3. Late Cretaceous volcanic and intrusive rocks near the eastern margins of the Boulder and Tobacco Root batholiths (May 6—leave 7:40 a.m.; May 6—return 6:00 p.m.). Leaders: D. G. Towell and C. J. Vitaliano, Indiana University.

This one-day trip will include four extended stops to examine aspects of the late Cretaceous volcanic and intrusive history of southwestern Montana: (1) a traverse through the lower portion of the Elkhorn Mountains Volcanics near Lewis and Clark Caverns; (2) a traverse along Cottonwood Canyon near Cardwell to examine a series of sills intruded into lower Paleozoic rocks; (3) examination of the Boulder batholith in contact with the Elkhorn Mountains Volcanics east of Pipestone Pass; and (4) inspection of the Tobacco Root batholith in contact with pre-Beltian (Archean) gneisses near Norris. Two alternate stops included in the guidebook are (1) the Ten-N pluton near Three Forks and (2) the North Doherty intrusive complex north of Whitehall. **Limit: 30; Cost: \$18.** Includes transportation in carryalls, lunch, and guidebook.

4. Stratigraphy, depositional environments, and paleotectonics of the LaHood Formation (Precambrian Y) at the southern margin of the Belt embayment (May 6—leave 8:00 a.m.; May 6—return 6:00 p.m.). Leaders: D. Hawley, Hamilton College; W. Coppinger, Trinity University; and A. T. Bonnet, Gulf Oil.

This trip will visit localities between Bozeman and Whitehall which illustrate some of the great variety of rock types in the LaHood Formation. In this area, the LaHood is up to 3 km thick and occurs north of a line between the Bridger Range and the Highland Mountains in a number of blocks separated by faults. Within each block, and especially between blocks, rock types vary greatly and include thick rubble beds, graded arkosic and lithic wacke beds, laminated siltstone, shale, micrite, and clastic carbonate. Many of the large clasts are characteristic of older Precambrian crystalline terrane to the south. Deposition is inferred to have occurred by sliding, mass-flow, and turbidity currents in deep water north of a rugged fault-shoreline that was subject to intermittent movement. **Limit: 30; Cost: \$18.** Includes transportation in vans, lunch, and guidebook.

Bozeman, Montana, May 7-8, 1982

5. Archaeology and geology of the Schmitt chert mine, Missouri headwaters (May 6—leave 1:00 p.m.; May 6—return 5:00 p.m.). Leaders: L. B. Davis and D. L. Smith, Montana State University.

Ongoing technical investigations by Montana State University since 1972 at the prehistoric Schmitt chert mine (24BW559) near the Missouri River headwaters in the Three Forks basin have revealed extraordinary facts about local paleoecology and archaeology in geological and pedological contexts. Peoples of the hunting-and-gathering Pelican Lake Phase adapted to the Rocky Mountains and Northwestern Plains regions, intensively quarried, extracted, used, and exchanged indigenous cherts intermittently during a period of some 1,700 radiocarbon years, from 1350 B.C. to 350 A.D. These cherts derive from the Madison Limestone which was folded and uplifted to rest at a 15-degree westward dip. Excavations provide exposures of bedrock and characteristic cherts that have enabled basic geological research into chert genesis and the delineation of structural features in the bedrock that facilitated not only chert formation but also Man's entry into massive bedrock using only a Stone Age technology. Limit: 15; Cost: \$5. Due to the nature of the terrane and surficial deposits, this trip will be cancelled in the event of wet weather.

Intrameeting

6. Geology of the southeastern Gallatin Valley (May 7 and 8—9:00-11:00 a.m., 1:00-3:00 p.m., and 3:00-5:00 p.m. each day). Leaders: Montana State University graduate students.

This two-hour local field trip will provide meeting registrants and

guests a brief view of Bozeman area geology. Structural geology, Paleozoic and Mesozoic stratigraphy, and geomorphology will be integrated into a historical framework during three stops (field attire not required). A vista of the Gallatin Valley and the surrounding Gallatin, Madison, and Bridger ranges will provide the opportunity for discussion of regional structural and geomorphic relationships. Limit: 14; Cost: \$3. Includes transportation and a guidebook. Registration will be on-site. Trips will depart from and return to the Reid Hall loop on the Montana State University campus.

Postmeeting

7. Field Teaching Workshop (May 9—leave 8:30 a.m.; May 9—return 12:30 p.m.). Leaders: J. Montagne, C. Montagne, and D. L. Smith, Montana State University.

This half-day field workshop will be conducted within the eroded framework of a typical Laramide anticline five miles east of Bozeman. Demonstrations and discussions will center on methods of geological field teaching. A number of approaches to a single problem will be proposed with ample opportunity for participants to share their ideas on the subject. Performance and comprehension levels will be considered as factors related to background level. Structural, stratigraphic, geomorphic, and pedologic problems will all be included. This trip should be of particular interest to secondary school and college teachers. Limit: 20. No fee will be charged.

ACCOMMODATIONS

Reservations are the responsibility of the individual. Blocks of rooms have been reserved until April 1 at motels indicated by an asterisk (*). *This meeting is competing for lodging with two other large conferences being held in Bozeman, and it is therefore imperative to make your reservations immediately to assure accommodation.* Please indicate you are a GSA registrant when reserving a room. Some of the motels will be offering GSA rates. All motels listed are along the shuttle-bus routes. Prices listed are as of December 1981.

NAME	ADDRESS	PHONE (406)	SINGLE	DOUBLE	DISTANCE
Holiday Inn	5 Baxter Lane	587-4561	\$30.00	\$36.00	2.2 miles
* Ramada Inn	I-90 & N. 7th	587-5261	25.00	29.00	2.2 miles
* City Center Motel	508 W. Main	587-3158	23.00	29.00	1.2 miles
* Lewis & Clark Motel	824 W. Main	586-3341	21.00	29.00	1.0 miles
* Imperial 400	122 W. Main	587-4481	20.00	24.00	1.4 miles
* Super 8 Motel	800 Wheat Drive	586-1521	19.00	24.00	2.5 miles
Royal 6	310 N. 7th	587-3103	19.00	26.00	1.6 miles
* Thrifty Scot Motel	1321 N. 7th	587-5251	18.00	27.00	2.4 miles
* Topper Motel	1235 N. 7th	587-3176	18.00	22.00	2.1 miles
Ranch House Motel	1201 E. Main	587-4278	18.00	20.00	2.0 miles
* Continental Motor Inn	1324 E. Main	587-9231	15.00	21.00	2.5 miles
Alpine Lodge	1017 E. Main	586-0356	10.00	16.00	2.2 miles
Mountain View Lodge	1010 E. Main	586-5415	10.00	16.00	2.2 miles

ON-CAMPUS ACCOMMODATIONS

A limited number of rooms (approx. 30) will be available to students on a first-come, first-served basis. Registration for these rooms can be arranged by contacting Melody Francisco, On-Campus Living, Hedges Complex, Montana State University, Bozeman, MT 59717, (406) 994-2661. Definite room arrangements will not be possible until vacancies are known (about 15 March 1982). Requests must be received before 16 April 1982. Please indicate that you are a GSA registrant when requesting a room.

CAMPGROUNDS

Commercial and national forest campgrounds are available in the Bozeman area. However, mountain campgrounds are frequently snowbound and closed this time of year. A list of local commercial campgrounds is included below.

Bear Canyon RV Park and Campground	(406) 587-1575
Bozeman Hot Springs KOA	(406) 586-6492
Sunrise Kamp Ground	(406) 587-4797

GSA EMPLOYMENT SERVICE—GENERAL INFORMATION

Throughout the year, the Membership Department maintains a computer file of geoscientists seeking employment. The information on this file includes the applicant's name, address, phone number, areas of specialty, type of employment desired, degrees held, years of professional experience, and current employment status.

Employers may request printouts of applicant listings within any one, or combination of several, specialty codes by completing the Employer's Request form on the following page. The cost of a printout of one to two specialty codes is \$100; each additional specialty listing is \$30. A printout of the entire applicant listing in all specialties may be purchased for \$300.

In addition to offering applicant listings throughout the year, GSA also conducts the Employment Interview Service each fall in conjunction with the Society-wide annual meeting. Interview space is rented to participating employers in half-day increments and our staff schedules all interviews with attending job applicants for every recruiter renting booth space. Additional services available for employer participants include a mes-

sage service, complete listing of applicants, copies of resumes at no additional charge, and posting of all vacancies.

Geoscientists seeking positions may register with the Employment Service by completing the attached application form and submitting it along with a one-page typed resume and payment to the address given below. Applicant registration is good for one year at a cost of \$15 to Members and Student Associates of GSA and \$30 to non-members of GSA.

For additional information and submission of forms contact

Clara Hodgson, Membership Coordinator

Geological Society of America

P.O. Box 9140

Boulder, CO 80301

(303) 447-2020

APPLICANT AND EMPLOYER FORMS ARE
BACK-TO-BACK ON THE FOLLOWING PAGES

North Dakota Geological Survey releases two publications

The Williston Basin Stratigraphic Nomenclature Chart by J. P. Bluemle, S. B. Anderson, and C. G. Carlson is now available from the North Dakota Geological Survey for \$1.00. This colored chart includes a time correlation chart of Williston Basin stratigraphic units and a column of the central basin scaled according to time (1 inch = 24 million years). Also included is a series of 15 correlation columns depicting the geology throughout the Williston Basin including parts of Montana, South Dakota, Saskatchewan, Manitoba, and much of North Dakota.

Ground-Water Resources of McIntosh County, N.D., Bulletin 73, Part III, by R. L. Klausing of the U.S. Geological Survey, is available free. The report investigates the quantity and quality of groundwater available from glacial-drift and preglacial bedrock aquifers in Spring Creek, Wishek, McIntosh, Zeeland, Dry Lake, and South Branch Beaver Creek.

Requests should be mailed to N.D. Geological Survey, University Station, Grand Forks, ND 58202-8156.

Continental Scientific Drilling Program Data Base*

The Continental Scientific Drilling Program (CSDP) data base at Lawrence Livermore National Laboratory is a central repository, cataloguing information from United States drill holes of scientific interest. Most holes have been drilled or proposed by various federal agencies. Some holes have been commercially funded. This data base is funded by the Office of Basic Energy Sciences of the Department of Energy (OBES/DOE) to serve the entire scientific community. Through the unrestricted use of the data base, it is possible to reduce drilling costs and maximize the scientific value of current and planned efforts of federal agencies and industry by offering the opportunity for add-on experiments and supplementing knowledge with additional information from existing drill holes. The data base, currently consisting of approximately 1,860 holes, is maintained on the Livermore Computer Center (LCC) CDC 7600s through the Master Control Program (MCP). There are 24 textual and numerical

parameters for each drill hole. These include an identification number (assigned by LLNL for record-keeping purposes), hole designation, purpose, surface elevation, depth, location, coordinates, start and complete dates of drilling, geologic setting, drilling and casing stages, geophysical logs, well testing, sample types, funding agency, cost, number of holes in a group of holes, principal investigator, and additional information. Any of these parameters can be sorted on and ordered. For example, holes in California, drilled between 1970 and 1980 sorted by location; holes with temperature logs, sorted by depth; holes drilled in oil shale; or other combinations can be done. These data can then be printed in a format showing all information about one hole, or in tabular listings of selected parameters for any number of holes (location, hole designations, depth and purpose, for instance). Future plans include a computer program to generate U.S. and state maps showing drill hole locations. All people are encouraged to use the free services of CSDP data base. Requests for information from this data base can be made by calling Gayle Pawloski (415) 423-0437, or writing to her at Lawrence Livermore National Laboratory, L-222, P.O. Box 808, Livermore, CA 94550.

*This work was performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under contract number W-7405-ENG-48.



**THE
GEOLOGICAL SOCIETY
OF AMERICA**
P.O. Box 9140, Boulder, Colorado 80301

**FOR ACCTG
USE ONLY**
Rec. \$15 - \$30
Ck # _____
Ltr. _____
GSA _____
Add. _____

APPLICATION FOR EMPLOYMENT MATCHING SERVICE
(Please type or print legibly with **Black Ink**)

Name _____ (last name first) Date _____
Mailing address _____
City _____ State _____ Zip code _____ If not U.S. citizen list visa _____
Date available _____ Telephone () _____
area code number (for contact during business hours)

EXPERIENCE

Must use specialty codes listed below

Choose as many as three that best describe your expertise in order of importance. MUST have at least one listed

* 1. _____ 2. _____ 3. _____

TYPE OF POSITION DESIRED

Interested in	Specific interest	Will accept employment in
<input type="checkbox"/> Academic	<input type="checkbox"/> Administrative	<input type="checkbox"/> U.S. only
<input type="checkbox"/> Government	<input type="checkbox"/> Exploration/Production	<input type="checkbox"/> U.S. with foreign assignments
<input type="checkbox"/> Industry	<input type="checkbox"/> Field	<input type="checkbox"/> Either
<input type="checkbox"/> Other	<input type="checkbox"/> Research	
	<input type="checkbox"/> Teaching	

*Present specialty (choose one from codes below) _____ Years of experience in this specialty _____

Present employer _____ May he be contacted? Yes No

If you do not wish to be listed for employment with a specific organization, check here and list organization on an attached sheet.

Give number of years experience for any of the following that are applicable:

Administrative _____ Exploration/Production _____ Field _____ Research _____ Teaching _____ Total geological working experience _____
Foreign languages _____ Spoken (fluency) _____ Written _____

ACADEMIC TRAINING

College or University	Degree (rec'd or expected)	Year	Major	Minor

Postgraduate work beyond highest degree in (field) _____ Number of years _____

SPECIALTY CODES

Select those that best describe your ability. Use codes in bold face only when other breakdowns are inadequate.

100. Economic Geology	222. inorganic	350. Mathematical Geology	453. micropaleontology	621. photogeology
101. coal geology	223. stable isotopes	351. computer science	454. paleobotany	622. photogrammetry
102. geothermal, etc.	224. unstable isotopes	352. statistical geology	455. paleoecology	630. Science Editing
103. metallic deposits	250. Geomorphology	400. Mineralogy	500. Petroleum Geology	650. Sedimentology
104. nonmetallic deposits	251. Pleistocene geology	401. crystallography	501. exploration	700. Seismology
105. mining geology	300. Geophysics	402. clay mineralogy	502. subsurface stratigraphy	720. Stratigraphy
120. Engineering Geology	301. exploration	410. Museum (curator)	520. Petrology	721. Cenozoic
121. rock mechanics	302. paleomagnetism	420. Oceanography	521. igneous	722. Mesozoic
150. Environmental Geology	303. theoretical	421. marine geology	522. metamorphic	723. Paleozoic
151. public education and communication	320. Hydrogeology	422. coastal geology	523. sedimentary	724. Precambrian
200. General Geology	321. hydrochemistry	450. Paleontology	550. Planetology	750. Structural Geology
220. Geochemistry	322. ground water	451. invertebrate	600. Regional Geology	751. tectonics
221. organic	323. surface water	452. vertebrate	620. Remote Sensing	752. tectonophysics
	330. Library			800. Volcanology

* **Résumé must be attached.** Only one page typewritten on one side will be accepted for reproduction to employers. Include concise detail of work experience and college majors and minors on degrees.

* **Fee-\$15** if you are a Member or Student Associate of GSA (Member # _____); **\$30** if you are not a member of GSA. Payment must accompany form. Make check payable to the Geological Society of America.

I agree to release GSA or their representatives from responsibility for errors that may occur in processing or distributing this data. I understand that GSA makes no guarantee of contact by an employer in this service. I agree to notify GSA Employment Service immediately of (1) change of address, (2) acceptance of a position.

I will attend the 19__ GSA Annual Meeting in _____

This application will be active for 1 year.

* Signature (required) _____

*THESE ITEMS ARE ABSOLUTELY NECESSARY TO PROCESS THIS APPLICATION



**THE
GEOLOGICAL SOCIETY
OF AMERICA**

P.O. Box 9140, Boulder, Colorado 80301

EMPLOYER'S REQUEST FOR EARTH SCIENCE APPLICANTS

(Please type or print legibly with **Black Ink**)

R _____ -1

Name _____ Date _____

Organization _____

Mailing address _____

R _____ -2

City _____ State _____ Zip code _____ Telephone number (____) _____
Area code Number

SPECIALTY CODES (see list below)

List the specialty code numbers that you wish to order, or check here if you want entire file of applicants in **ALL** specialties.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____

SPECIALTY CODES					
100. Economic Geology	222. inorganic	350. Mathematical Geology	453. micropaleontology	621. photogeology	
101. coal geology	223. stable isotopes	351. computer science	454. paleobotany	622. photogrammetry	
102. geothermal, etc.	224. unstable isotopes	352. statistical geology	455. paleoecology	630. Science Editing	
103. metallic deposits	250. Geomorphology	400. Mineralogy	500. Petroleum Geology	650. Sedimentology	
104. nonmetallic deposits	251. Pleistocene geology	401. crystallography	501. exploration	700. Seismology	
105. mining geology	300. Geophysics	402. clay mineralogy	502. subsurface stratigraphy	720. Stratigraphy	
120. Engineering Geology	301. exploration	410. Museum (curator)	520. Petrology	721. Cenozoic	
121. rock mechanics	302. paleomagnetism	420. Oceanography	521. igneous	722. Mesozoic	
150. Environmental Geology	303. theoretical	421. marine geology	522. metamorphic	723. Paleozoic	
151. public education and communication	320. Hydrogeology	422. coastal geology	523. sedimentary	724. Precambrian	
200. General Geology	321. hydrochemistry	450. Paleontology	550. Planetology	750. Structural Geology	
220. Geochemistry	322. ground water	451. invertebrate	600. Regional Geology	751. tectonics	
221. organic	323. surface water	452. vertebrate	620. Remote Sensing	752. tectonophysics	
	330. Library			800. Volcanology	

Applicants seeking employment in:

- Academic
- Government
- Industry
- Other _____

Minimum degree required

- None
- B.A. or B.S.
- M.A. or M.S.
- Ph.D.

Minimum professional experience

- None
- 1-5 yrs
- 6-plus

Experience desired (yrs)

	None	1-5	6-plus
Administrative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exploration/Production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I am interested in interviewing applicants through the GSA Employment Service at the 19____ Annual Meeting in _____.

See attached sheet for current fee schedule.

1. I agree to use this service for valid recruiting purposes.
2. I agree that no placement charges will be assessed to any applicant participating in the GSA Employment Matching Service.

Total fee enclosed \$ _____
or invoice requested \$ _____

Signature (required) _____

Just arrived . . .

Paleontology in China 1979

Edited by Curt Teichert, Liu Lu, and Chen Pei-ji

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