

GSA NEWS & INFORMATION

Monthly Newsletter of
The Geological Society of America

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Arizona Geologists to Host GSA in Phoenix

Arizona is a special place for geology: the Grand Canyon and the Sonoran Desert, core complexes and porphyry coppers, the Petrified Forest and the Mogollon Rim. And for geologists: J. W. Powell and F. L. Ransome, Jim Gilluly and Ed McKee. In 1987, for the first time in the 99 years of GSA history, the membership will convene for an annual meeting within this geologically special state.

No one should miss the chance to enjoy the Arizona panorama in the unique way that attending a GSA meeting affords. The meeting site in Phoenix offers ready access to plateau and desert alike, and the October timing holds promise of perfect weather for field trips at all elevations. Winter in the high country will still be at bay, but the summer heat will be past in the desert lowlands.

The host institution is the University of Arizona in Tucson, but "Team Phoenix," charged with staging the meeting, includes representatives from Arizona State University in Tempe, Northern Arizona University in Flagstaff, Mesa College, and Glendale College, as well as various state agencies and local geological societies. In a real sense, the entire geological community of Arizona will be your host.

But what should you care about the identity of your human hosts in the face of such a magnificent natural setting? The most earnest call to convene in Phoenix comes from the rimrocks and buttes, the stark jagged ranges, and the sweeping vistas of the Arizona landscape. I could extol the urban virtues of Phoenix and its rich cultural heritage, but I prefer to promise you rocks.

Hard rocks and soft rocks. Rocks in layers as flat and bare as a table as far as the eye can see. Rocks standing on end and ripped by every kind of fault known to geological lore. Rocks with fossils and rocks without. Volcanic rocks so young that aboriginal farmers quailed in their stone huts while the night glowed red from fiery eruptions. And volcanic rocks so old that no crust existed here before them. I can promise you granites and ignimbrites, carbonates and redbeds, coal and basin fill.

If you suspect I am being merely poetic, please peruse the list of field trips. There is something good and something solid for every taste and every interest. You will find superb excursions to classic localities, and you will discover that the leaders are top-notch. Never before has there been such a marvelous opportunity for geologists from all over the continent to study our magnificent Arizona exposures with such a cadre of respected experts. You can travel by bus, or by four-wheel drive, or by boat, or on foot. The choice is yours. The only poor choice would be to pass up all the field trips!



Photo by George Kew

Team Phoenix Brain Trust, pictured at the University of Arizona (UA) campus in Tucson on the tenth floor of the new Gould-Simpson Building named for Emeritus Professor and GSA Fellow Laurence McKinley Gould and the late George Gaylord Simpson. From left to right: Program Chairman Clem Chase, who did all the work; General Chairman Bill Dickinson, also UA Geosciences Department Chairman; GSA Member Ed McCullough, UA Faculty of Science Dean whose enthusiasm for a GSA meeting in Phoenix played a key role in early planning; and Field Trip Chairman George Davis, also UA Vice Provost.

Consider the variety. Trips will go into the Colorado Trough to examine both Mesozoic thrust belts and Cenozoic detachment systems; to the Colorado Plateau to view sediments and depositional systems of varied ages and environments; into the Transition Zone to consider either Precambrian or Phanerozoic questions; into the desert basins for geomorphology and geoarchaeology; to several volcanic centers and to varied ore deposits; into desert ranges to study the structural record of core complexes and the sedimentary record of deformed successions; to coastal Sonora to visit young volcanoes or intertidal sediments; and into the Grand Canyon itself. As some of you will inevitably have to miss the field trips, remember that you can still obtain a compact guidebook for all the trips in the form of a state bulletin available at the meeting.

The technical program in Phoenix will also have a special flavor. Nearly half the invited symposia deal with varied aspects of the geologic wonderland of the Southern Cordillera and the Greater

(continued on p. 190)



Photo by Peter Kresan

Santa Catalina Mountains, Pusch Ridge, southern Arizona, near Tucson; aerial view, east northeast.

Southwest. Sessions on Mesozoic thrusting, Tertiary detachments, Cretaceous seaways, Cenozoic volcanism, Proterozoic ores, the tectonics of Mexico, origins of Proterozoic crust, the Rio Grande Rift, and the Gulf of California will provide comprehensive overviews of many long-standing questions. Other symposia reach as far afield geographically as China and deal with topics as diverse as seismotectonics, human origins, coal quality, arid lands, accretionary prisms, anorogenic magmatism, and rates of evolution. The program also includes ten short courses on timely and varied topics ranging from basin analysis and waste disposal to paleoseismicity and remote sensing.

A fine guest program includes horseback riding in the famed Superstition Mountains, a day-long bus trip to Sedona shops and Oak Creek Canyon, and tours of the Desert Botanical Garden and the Heard Museum, famed for its collections of Southwest Indian art and handicrafts.

I tell you truthfully: the geological red carpet is out and this is one not to miss. Team Phoenix is ready for you, and all Arizona is waiting for you.

William R. Dickinson
General Chairman
1987 Annual Meeting

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*Advertising: Contact James R. Clark or Ann H.F. Crawford (303) 447-2020.



THE GEOLOGICAL SOCIETY OF AMERICA

Annual research awards program

1988

The Geological Society of America will continue its annual research awards program in 1988. Eligibility is not restricted to GSA members. New application forms for the current year and detailed requirements are available each fall in the geology departments of colleges and universities offering graduate degrees in earth sciences. Forms are mailed annually to GSA Campus Representatives and department secretaries and chairmen in the United States and Canada. They are also available upon request from the Research Grants Administrator, Geological Society of America, P.O. Box 9140, Boulder, Colorado 80301. PLEASE USE ONLY THE 1988 APPLICATION AND APPRAISAL FORMS.

The primary role of the research grant program is to provide partial support of master's and doctoral thesis research for graduate students at universities in the United States, Canada, Mexico, and Central America. If necessary, applications may be submitted in Spanish or French.

The Geological Society of America awarded \$176,000 in grants in 1987. The awards went to 199 students doing research for advanced degrees. The average amount awarded was \$885. The largest award was \$1,230, but there is no predetermined maximum amount.

Confidential evaluations from two faculty members are required from master's and doctoral candidates and must accompany applications submitted. PLEASE USE THE "APPRAISAL OF APPLICANT" FORMS, WHICH ACCOMPANY THE 1988 APPLICATION FORMS.

Applications will also be accepted for the Harold T. Stearns Fellowship(s). These grants are awarded periodically in support of research on one or more aspects of the geology of Pacific Islands and of the circum-Pacific region. They are distinct from the GSA Penrose research grants and are restricted in their use to the particular region. The awardee(s) will be selected by the Research Grants Committee. Applications must be postmarked by **February 15**. Application forms are the same as those used for the Penrose research grants.

The Committee on Research Grants will meet in April to evaluate applications and award grants. In April, all applicants for grants will be informed of the committee's actions by the Executive Director of the Geological Society of America.

**ALL APPLICATIONS MUST BE SUBMITTED ON THE 1988 FORMS
AND POSTMARKED BY FEBRUARY 15, 1988**

Report from Washington

by Jennifer Hess

GSA Congressional Science Fellow

As the 1986–1987 Geological Society of America Congressional Science Fellow, I have the unique opportunity to see, as an “insider,” how Congress operates, and I’ve learned a great deal about the legislative process. I’ve gained a new appreciation for the members of Congress, and their hard-working and diligent staffs. I’ve seen firsthand the vitally important relation between science and technology and the political world of Congress. I’ve learned that a scientist can have an effect on the nation’s science policy.

Committee on Environment and Public Works

I chose assignment to the office of the Senate Committee on Environment and Public Works (EPW), and to work for Senator Max Baucus (Democrat, Montana), a member of the committee. The committee is divided into five subcommittees: (1) Water Resources, Transportation, and Infrastructure, (2) Environmental Protection, (3) Hazardous Wastes and Toxic Substances (chaired by Senator Baucus), (4) Superfund and Environmental Oversight, and (5) Nuclear Regulation. I work primarily with two of these: the Subcommittee on Environmental Protection and the Subcommittee on Hazardous Wastes and Toxic Substances, although I am invited to the briefings and hearings of the other subcommittees. The two issues I have been most heavily involved with are the reauthorization of the Clean Air Act (including acid rain legislation), and the interrelated issues of the greenhouse effect, global climate change, and stratospheric ozone depletion. From January through May the subcommittees held six hearings on issues related to the Clean Air Act and four hearings on climate change and stratospheric ozone depletion.

In the EPW committee most of the spring was spent on informational hearings that focused on environmental problems requiring Congressional legislation or oversight. A large amount of the legislation pertinent to these efforts has been introduced or will be introduced in the near future. During the summer, there were legislative hearings on the bills, and marking up the legislation to report to the Senate floor.

What a Congressional Fellow Does

One thing I’ve found to be true on the Hill is that there is no such thing as a “typical day,” although the common thread that runs through all the days is a frenetic pace and the need to continually shift gears to respond to ever-changing issues. The range of activities I am involved with reflects this pace. They include preparation of briefing materials for staff and members, preparation of questions for Members for hearings, writing floor statements for Senator Baucus, and staffing him during meetings and speeches, developing ideas for hearings, researching and developing witness lists for hearings, setting up hearings, talking with the press, and attending briefings and meetings around Washington, among others. Additionally, I’ve done major work for four hearings, one on the health effects of ozone and carbon monoxide in nonattainment areas (air quality regions not meeting the standards for ozone and carbon monoxide) and three on stratospheric ozone depletion. This involved becoming the staff expert on the issue and developing the hearing from the concept state to identifying the expert witnesses, interacting with concerned constituency and the press, and researching and writing the staff background material.



Current Issues

The Clean Air Act and the Resource Conservation and Recovery Act represent continuing concerns of Congress. The other related issues of greenhouse, climate change, and ozone depletion represent the major new environmental concerns of this Congress. Two members of the EPW committee, Senators Baucus and John Chafee, have introduced legislation on stratospheric ozone depletion. Other legislative and oversight thrusts include continuing Superfund oversight, the Price-Anderson Act nuclear liability system, clean coal technology and related issues, radon gas legislation, asbestos in public buildings, and ground water legislation, to name just a few. Some of these are national issues; others represent a more regional concern.

How to Get Involved

One observation that I have made time and time again is that staffers rely on their contact system for information on any of these issues. These contacts are usually long-standing, trusted people who have a history of providing honest, unbiased, and reliable information to the committee. One of the best ways for GSA as a group or for individual members to influence science policy is to plug into this system. The best way to do that is to follow the issues. If an issue of importance comes up and a GSA member has information to contribute to the debate, this information should be shared. There seem to be two ways to do this. One is to contact the committee with jurisdiction over the issue and ask to speak with the staffer working on the issue. The other way is to contact the committee member’s office from one’s home district. Ask for the staffer covering that issue, or write a letter to the member. From my own experience, being an informed constituent means everything. Many an expert witness on a hearing panel is there because a committee member requested someone from his or her home state to testify. The process is slow and requires persistence, but once access is gained, a contact is made. For those who want to be involved, I’d be happy to try to track down an initial contact. Anyone who would like information on my fellowship experiences or activities on the Hill, can call me; my Congressional phone number is (202) 224-6691.

Meet Your Congressional Fellow

A “Meet Your Congressional Fellow” event has been scheduled by the GSA Geology & Public Policy (G&PP) Committee during the Phoenix Annual Meeting. Jennifer Hess will be available at the presentation, Tuesday, October 27, 1987, 3:00–5:00 p.m. This event, which will include a question-and-answer session, will be followed by the G&PP Forum “The Urbanized Desert: A Challenge for the Geosciences,” 5:30–7:30 p.m. Both events will be in the Hyatt Regency, the headquarters hotel for the 1987 GSA Annual Meeting.

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APRIL 26-MAY 6, 1988

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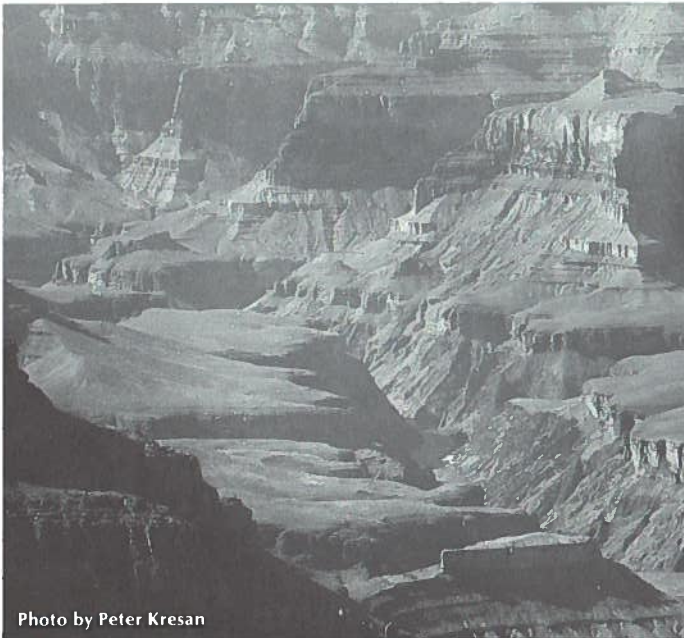


Photo by Peter Kresan

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TO THE GRAND CANYON**

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Notice of Council Meeting

The Council of the Society reminds you that meetings of Council are open to all Fellows, Members, and Student Associates as observers, except during executive sessions. Only councilors, officers, and section representatives may speak to agenda items, except by invitation of the chair. Because of space and seating problems, notification of attendance must be received by the Executive Director in advance of the meeting. The next meeting of the Council will be Wednesday morning, October 28, at the annual meeting in Phoenix.



CENTENNIAL MEETING & EXHIBIT

OCTOBER 31-NOVEMBER 3, 1988
DENVER, COLORADO

**CALL FOR 1988 FIELD TRIP PROPOSALS
PROPOSALS DUE NOW**

The final selection of field trips for the 1988 Centennial Celebration is underway. A preliminary announcement will be available this October. Many proposals already have been received. If you are thinking about leading a trip, now is the time to get in touch with the chairman.

1988 Field Trip Chairman
Gregory S. Holden
Dept. Geology and Geol. Eng.
Colorado School of Mines
Golden, CO 80401
(303) 273-3818 (direct)
273-3800 (dept.)

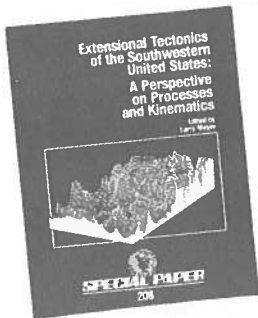
**CALL FOR 1988 SYMPOSIA PROPOSALS
PROPOSALS DUE JANUARY 1, 1988**

Selection of symposia will be made in January 1988. For guidelines and information contact

1988 Technical Program Chairman
William W. Hay
University Museum
Campus Box 218
University of Colorado
Boulder, CO 80309
(303) 492-7370 (direct)

1988 Technical Program Co-Chairmen
Samuel S. Adams A.R. (Pete) Palmer
Dept. Geology and Geol. Eng. GSA
Colorado School of Mines P.O. Box 9140
Golden, CO 80401 Boulder, CO 80301
(303) 273-3800 (303) 447-0173

GSA RECENT RELEASES



Extensional Tectonics of the Southwestern United States: A Perspective on Processes and Kinematics
by Larry Mayer, 1986.

The goal of this volume is to provide a better understanding of continental rifting processes in general and in the Basin and Range and Mojave Desert Provinces in particular.

Special Paper 208, 130 p., ISBN 0-8137-2208-X, CIP, paperback, \$17.50.



The Cretaceous-Tertiary Boundary in the San Juan and Raton Basins, New Mexico and Colorado

edited by James E. Fassett and J. Keith Rigby, Jr., 1987.

The 10 papers in this volume provide new information about the rocks adjacent to the Cretaceous-Tertiary boundary in the San Juan and Raton basins. The studies represented by the papers in this volume do not support an impact-associated mass extinction in either of these basins at the end of the Cretaceous Period, and it is noted that clearly much more work is needed to resolve questions about this boundary.

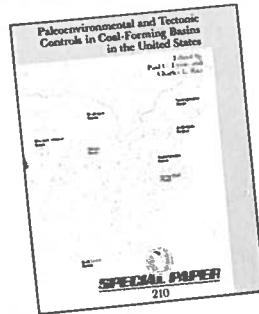
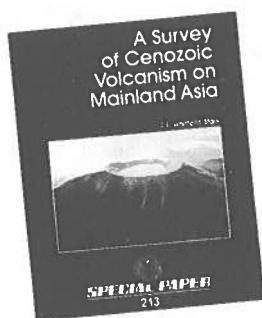
Special Paper 209, 204 p., with two 24"×20" pocket plates, ISBN 0-8137-2209-8, CIP, paperback, \$28.50.

A Survey of Cenozoic Volcanism on Mainland Asia

by J.L. Whitford-Stark, 1987.

The volume presents a catalog of the products of the Cenozoic volcanism on mainland Asia, exclusive of the Koryak and Kamchatka Peninsulas. A synthesis of the available information illustrates that the dominant volcanic landforms are fissures and cinder cones.

Special Paper 213, 82 p., ISBN 8-8137-2213-6, CIP, paperback, \$15.00.



Paleoenvironmental and Tectonic Controls in Coal-Forming Basins of the United States

edited by Paul C. Lyons and Charles L. Rice, 1987.

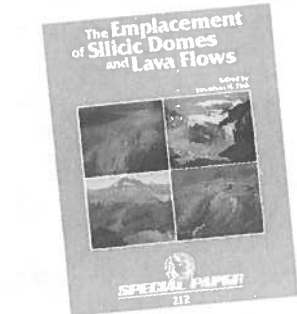
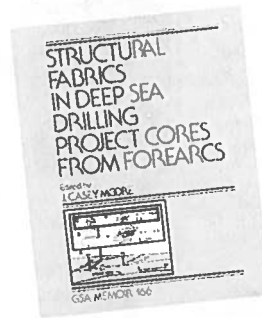
A wealth of recent coal data and references to important literature on the field of coal-basin modeling in the United States are contained in this volume.

Special Paper 210, 208 p., ISBN 0-8137-2210-1, CIP, paperback, \$25.00.

Structural Fabrics in Deep Sea Drilling Project Cores from Forearcs

edited by J. Casey Moore, 1987.

DSDP cores from forearcs have a known tectonic setting and catch



The Emplacement of Silicic Domes and Lava Flows

edited by Jonathan H. Fink, 1987.

A symposium held at the 1984 GSA meeting in Reno, Nevada provided the basis for this volume. The symposium emphasized the mechanical, rather than chemical aspects of dome emplacement, and this volume maintains that approach.

Several different perspectives are considered and offer insight into many of the key questions that still remain unanswered about domes. Special Paper 212, 153 p., ISBN 0-8137-2212-8, CIP, paperback, \$18.75.

deformational and diagenetic-metamorphic processes while they are occurring. Analysis of the fabrics from these cores has great potential for furthering our understanding of initial structural processes in accretionary wedges, and for providing new insight into the evolution of ancient subduction complexes. Critical information is brought to a broad geological audience in a uniform and condensed format through a structural study done of virtually all cores collected from forearcs during the DSDP and presented in this volume. Memoir 166, 168 pg., with two 17"×26" pocket plates, ISBN 0-8137-1166-5, CIP, hardbound, \$18.00.

NOW AVAILABLE

Special Paper 207

The Motion of Allochthonous Terranes Across the Northern Pacific Basin

by M.G. DeBiche, A. Cox, and D.C. Engebretson, 1987. \$11.00

Special Paper 211

Community paleoecology as a geologic tool: The Chinese Ashgillian-Elfeian (latest Ordovician through early middle Devonian) as an example

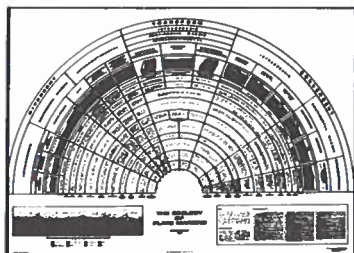
by Wang Yu, A.J. Boucot, Rong Jia-Yu, and Yang Xue-chang, 1987. \$18.50

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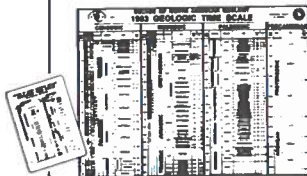
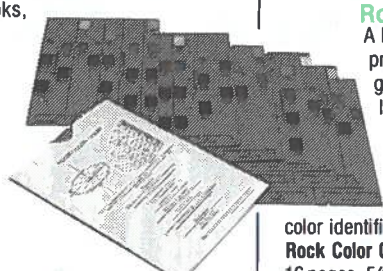
Geology of Plate Margins (MC-59)

Attempts to organize rationally the types of plate boundaries, to display them in a useful graphic form, and to describe briefly geologic features associated with each. Text and references included. Two formats available.

MC-59. Single copy, wall-size, 38 1/2" x 52 1/2", in color with an illustrated file envelope Rolled, \$14.50 folded, \$12.50

MC-59A.

Great for field or classroom use! Pack of 10, 11" x 16 1/2", folded and punched for notebooks, specially coated stock to resist moisture and wear. \$12.00



Geologic Time Scales

Compilation of the latest chronostratigraphic and numerical age data. Includes magnetic reversal stratigraphy and

estimates of uncertainties of assigned Paleozoic and Mesozoic numerical ages. Sources of data cited. For class and field use. Four formats available.

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- CTS-2** Single, laminated sheet, 3 hole punch \$1.25
- CTS-3** Wallet size, pack of 25, solid vinyl \$6.00
- MC-50** Wall size, 30" x 36", heavy stock, rolled in tube \$8.50

Rock Color Chart

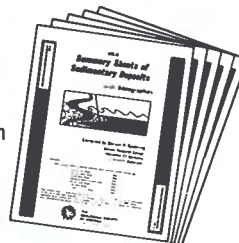
A handy flip chart that is designed primarily for field use with 115 chips giving precise rock colors for all geologic purposes. Provides numerical designations for hue, value, and chroma. Form and arrangement are based on the Munsell system, the most widely accepted system of

color identification in use in the United States.

Rock Color Chart,
16 pages, 5" x 7 1/2" \$12.00

Summary Sheets of Sedimentary Deposits (MC-8)

Seven sheets, each 23" x 35" showing: Alluvial Fan Deposits, Alluvial Valley Deposits, Regressive Shoreline Sand Deposits, Barrier Island Sand Deposits, Eolian Sand Deposits, Turbidity Current Deposits, Tidal Sand Deposits.
MC-8 Rolled, \$9.50; folded, \$7.50



Author's Photographic Scale

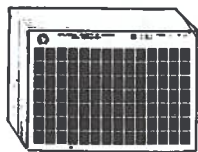


Handy photo scale for earth-scientists. Designed to replace the "old standby" ball point pen or pocket knife in photographs when a scale is desired. Durable 0.020" thick white vinyl printed in dark blue. Boldly calibrated in both centimeters (10) and U.S. inches (4), it also features an

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CPS-01 Package of 10 \$6.50
CPS-02 Single scale \$1.50

SPECIAL PRODUCTS



Data Repository Packages

Includes documents submitted for the repository for both GSA *Bulletin* and *Geology*. Each 98-frame,

24 x microfiche card is coded with reference numbers cited in the articles as they were published.

- DRP-01** 1974-1983, 12 cards \$12.00
- DRP-02** 1984, 4 cards \$ 4.00
- DRP-03** 1985, 4 cards \$ 5.00

GSA Seal Belt Buckle

The GSA seal rendered as a husky solid brass belt buckle for field or everyday wear. Deeply etched black background, polished brass highlights, 2 3/4" diameter, for belts to 1 7/8" wide at buckle loop.



BUC-1 \$9.75



Volume Binders for Geology and Bulletin

Each heavy-duty binder holds 12 issues of each journal. Journal title is gold stamped on the spine of the binder, and spines have clear index label pocket. Extra mounting wires hold loose inserts. *Bulletin* binders are tan;

Geology binders are maroon.

Because of different size and stamping the binders are not interchangeable.

- BIN-1, Bulletin**
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GSA Mug

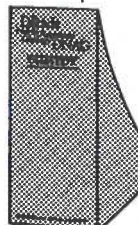
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MUG-06, carton of 6 \$50.00

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GSA Foundation Establishes a Birthday Fund By Robert L. Fuchs



As readers of *GSA News & Information* are aware, in 1988 the Geological Society of America will celebrate its 100th birthday, clearly a momentous occasion for the Society and the membership. The celebration got started ten years ago with the initiation of work on the monumental Decade of North American Geology series of books, transects, and maps. DNAG is certainly the most extensive of the many commemorative centennial activities, which include special *Bulletin* editions, exhibits, and symposia. Celebration of the Centennial will culminate in the fall of 1988 at the annual meeting, in Denver.

The Board of Trustees of the GSA Foundation has provided the opportunity for each member to offer birthday congratulations and show personal appreciation to the Society on the occasion of its Centennial. A new fund, the Century Challenge, has been established as of September 1, 1987, to receive birthday gifts from members. Each member is urged to give a century gift of \$100, \$1 for each of the society's 100 years. This gift can be in the form of either a cash contribution or a monetarily less painful pledge spread out over several years, with payments in equal amounts as low as \$25 per year.

In order to encourage the broadest membership participation, the trustees have challenged the membership and provided a \$100,000 challenge pool of money for this purpose. The trustees have made a kickoff gift of \$10,000 to the Foundation and will give additional gifts of \$10,000 to the Century Challenge each time membership contributions reach an increment of \$100,000.


The goal of the campaign is \$1,000,000, which can be achieved through the gifts of 9000 members plus the \$100,000 challenge pool of the trustees. The target date to achieve this goal is the end of the 1988 centennial year.

GSA has used its funds in the past to support many member benefits, including publications and research. However, because of the demand for funds in the publications area and the increasing need for research money, GSA has been unable to satisfy the requests for research support. In fact, even though the research grant budget has increased annually in recent years, the Society has still only been able to fund an average of less than 30% of the requests received.


The money that is raised through the Century Challenge will be earmarked for the support of research. On an endowment basis, the income from each \$100 gift can be used to support ongoing research at the rate of \$10 per year. This kind of reliable financing will be invaluable to the profession and will have a positive impact on the careers of many geoscientists in current and future generations.

The GSA Council, Executive Committee, Investment Committee, and Sections leadership have all unanimously endorsed the Century Challenge and started the campaign on its way with a commitment of 100% participation. Each member of the Society will be contacted through a mailing in early September concerning his or her personal participation. When you receive this material, please take time to consider your GSA birthday gift and return the contribution envelope to the GSA Foundation. Contributors whose gifts are received at the Foundation office by October 15, 1987, will be eligible to win free air travel in a drawing to take place October 28 at the GSA annual meeting in Phoenix.

If you would like more information about the Century Challenge and other Foundation programs, please complete and return the coupon on this page.



GSA Foundation
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I would like to support the GSA Foundation. Please send information on

- Century Challenge
- General Giving
- Gifts for Research
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Foundation Chairman Harry Jamison and Challenge Pool leader Mike Halbouty present a \$10,000 check from the Trustees to Foundation President Bob Fuchs to start the Century Challenge birthday fund.

PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS NORTHEASTERN SECTION, GSA, 23rd Annual Meeting

Portland, Maine
March 10-12, 1988

The University of Southern Maine together with the University of Maine at Farmington, Bowdoin College, the Maine Geological Survey, and the Geological Society of Maine will host the **Northeastern Section** of the Geological Society of America meeting at the Holiday Inn by the Bay and the Sonesta Hotel. The Eastern Section of the Society of Economic Paleontologists and Mineralogists, the Northeastern Section of the Paleontological Society, and the Eastern Section of the National Association of Geology Teachers will be meeting with the GSA Northeastern Section.

CALL FOR PAPERS

Papers are invited for presentation at oral and poster sessions as well as symposia. Fifteen minutes for presentation and five minutes for discussion will be the format for the technical sessions. Papers of regional interest to geologists in northeastern North America as well as those of general geological interest will be considered for the program. Poster papers are encouraged. Poster booths will be three-walled 8' x 8' partitions. Every attempt will be made to assure that oral and poster sessions will not conflict with related technical sessions. Abstracts for symposia should be submitted directly to the appropriate convener.

SYMPOSIA

The following symposia will be presented at the Portland meeting. Those wishing to contribute to a symposium should contact the conveners directly. General information regarding symposia may be obtained by contacting Carolyn A. Lepage, Department of Environmental Protection, State House Station 17, Augusta, ME 04333.

1. **Human Occupation of Late Pleistocene Ice-Marginal Environments.** Sponsored by the GSA Archaeological Geology Division. Harold W. Borns, Jr., Institute for Quaternary Studies, University of Maine, Orono, ME 04469.
2. **The Bedrock Geology of Coastal New England and New Brunswick East of the Kearsarge-Central Maine Synclinorium.** Charles V. Guidotti, Daniel R. Lux, Dept. of Geological Sciences, University of Maine, Orono, ME 04469; Arthur M. Hussey II, Dept. of Geology, Bowdoin College, Brunswick, ME 04011.
3. **Glaciomarine Sedimentation: The Presumpscot Formation of Northeastern North America and Analogues.** Sponsored by the SEPM Eastern Section. Joseph T. Kelley, Maine Geological Survey, State House Station 22, Augusta, ME 04333; Robert N. Oldale, U.S. Geological Survey, Woods Hole, MA 02543.
4. **Contaminant Transport in Glaciated Terrains in Northeastern North America.** Sponsored by the GSA Hydrogeology Division. Andrews L. Tolman, R.G. Gerber, Inc., 17 West Street, Freeport, ME 04032; John S. Williams, Maine Geological Survey, State House Station 22, Augusta, ME 04333.
5. **Hydrogeologic Aspects of Radioactive Waste Disposal.** Michael F. Weber, U.S. Nuclear Regulatory Commission, Mail Stop 623-SS, Washington, D.C. 20555; Frank J. Wobber, ER-75, GTN, U.S. Department of Energy, Washington, D.C. 20545.
6. **Epibionts on Paleozoic Fossils: Implications for Evolution and Paleocology.** Sponsored by the Paleontological Society Northeastern Section. Richard Alexander, Geoscience Dept., Rider College, Lawrenceville, NJ 08648; Carlton Brett, Dept. of Geology, University of Rochester, Rochester, NY 14627.
7. **Landslides of the Northeastern United States and Eastern Canada.** Irwin D. Novak, Dept. of Geosciences, University of Southern Maine, Gorham, ME 04038; Charles A. Baskerville, Branch of Geologic Risk Assessment, Mail Stop 922, U.S. Geological Survey, Reston, VA 22092.
8. **Stratigraphic and Structural Analysis of Mountain Belts: A Symposium in Honor of Leo M. Hall.** Rolfe S. Stanley, Dept. of Geology, University of Vermont, Burlington, VT 05405; Peter Robinson, Dept. of Geology, University of Massachusetts, Amherst, MA 01003; Philip H. Osberg, Dept. of Geological Sciences, University of Maine, Orono, ME 04669; Norman L. Hatch, Branch of Eastern Environmental Geology, U.S. Geological Survey, Reston, VA 22092. Parts I and II will consist of longer oral papers by distinguished invited speakers. Part III will be an unopposed evening session of volunteered poster papers by Leo Hall's former students and associates. Individuals wishing to contribute to the poster session should send completed abstracts (1 original and 5 copies) to Hatch at the above address.
9. **Earth Science Applications of Geographic Information Systems.** Walter A. Anderson, Maine Geological Survey, State House Station 22, Augusta, ME 04333; Hugo F. Thomas, Connecticut Geological Survey, State Office Building Room 553, Hartford, CT 06106.

SPECIAL POSTER SESSIONS

The following special poster sessions will be presented. Those wishing to contribute to a special poster session should contact the convener(s) directly. General information regarding poster sessions may be obtained by contacting Mark Swanson, Dept. of Geosciences, University of Southern Maine, Gorham, ME 04038.

1. **Coastal Zone Management Strategies in the Northeast: Regional Response to Changing Sea Level and Shorelines.** Stephen M. Dickson, Joseph T. Kelley, Maine Geological Survey, State House Station 22, Augusta, ME 04333.
2. **More Classic Field Sites for Teaching Earth Science in the Northeast.** Sponsored by the NAGT New England Section. Archie W. Berry, Dept. of Geology, University of Maine, Farmington, ME 04938.

ABSTRACTS

Abstracts are limited to 250 words and must be submitted camera-ready on the official 1988 GSA abstract form, available from

Abstracts Coordinator
Geological Society of America
P.O. Box 9140
Boulder, CO 80301
(303) 447-8850

or
Arthur M. Hussey II
Dept. of Geology
Bowdoin College
Brunswick, ME 04011

(continued on p. 199)

Northeastern Section (continued from p. 198)

Send one original and five copies of abstracts to be considered for technical sessions and poster sessions to the Technical Program Chairman: Arthur M. Hussey II, Dept. of Geology, Bowdoin College, Brunswick, ME 04011. Symposia and Special Poster Session abstracts (one original and five copies) are to be sent directly to the convener whose name follows the symposium title (above).

Acceptance or rejection of abstracts (other than symposia) will be based on review by the Technical Program Committee. Abstracts will be judged on the basis of scientific merit, informative content, readability, and relevance to geologic problems of northeastern North America. There is no limit to the number of abstracts that may be submitted, but no more than two abstracts bearing an individual's name as first author will be accepted for the program. No author may give more than one oral presentation. Authors will be notified of acceptance or rejection during November 1987.

ABSTRACTS ARE DUE OCTOBER 19, 1987

STUDENT PAPERS

Students are encouraged to submit abstracts. Awards will be made for outstanding student papers presented in the technical sessions. To be eligible and judged, an abstract must be written exclusively by a student and must be designated on the abstract form as a student paper.

PROJECTION EQUIPMENT

All slides must be 2" x 2" format, and fit a standard 35-mm carousel tray. Only one projector and one screen will be provided in each of the technical sessions. Overhead projectors will not be available. Please bring your own loaded carousel tray, if possible.

EXHIBITS

Exhibits of geological books, equipment, and research and educational materials will be on display near the technical session rooms during the meeting. Booth size will be 8' x 8'. Larger booths will also be available. Special rates are available for nonprofit and

educational organizations. For additional information, contact John D. Tewhey Associates Inc., P.O. Box 86 DTS, Portland, ME 04112, phone (207) 839-6653. Coffee-break service will be located in the exhibit area during the meeting week.

SHORT COURSE

An Evaluation of Magmatism as an Indicator of Past Tectonic Settings. Rudolf Hon, Dept. of Geology and Geophysics, Boston College, Chestnut Hill, MA 02167; Robert Ayuso, U.S. Geological Survey, National Center, Reston, VA 22092.

SPECIAL EVENTS

A welcoming party will be held at the Holiday Inn by the Bay Wednesday evening March 9, 1988. A reception is tentatively scheduled for Thursday evening, March 10. The GSA Northeastern Section annual banquet will be dinner on Friday, March 11. This banquet will be subsidized by the Section. A postmeeting boat tour featuring the "boat-side" geology of Casco Bay will be offered, weather permitting. The field trip will be in an enclosed passenger ferry and will be led by Arthur M. Hussey II, of Bowdoin College. The trip will be on Saturday, March 12, 1988, and will concentrate on the stratigraphic and structural geology of Casco Bay. The Association of Women Geoscientists will hold a breakfast.

Guest activities will include gallery tours of the Portland Museum of Art and a shopping trip to L.L. Bean and other outlet stores in Freeport, Maine.

DETAILED INFORMATION

Information concerning registration, accommodations, and activities will appear in a future issue of *GSA News & Information* and as part of *Abstracts with Programs* for 1988. Requests for additional information or suggestions should be addressed to the General Chairman

Stephen G. Pollock
Dept. of Geosciences
University of Southern Maine
Gorham, ME 04038
(207) 780-5350

PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS SOUTH-CENTRAL SECTION, GSA, 22nd Annual Meeting

**Lawrence, Kansas
March 14-15, 1988**

The South-Central Section of the Geological Society of America will meet in the Kansas Union at the University of Kansas. The meeting is sponsored by the Department of Geology of the University of Kansas and the Kansas Geological Survey.

CALL FOR PAPERS

Papers are invited for oral presentation at technical sessions and symposia. The format for technical sessions will be fifteen minutes for presentation and five minutes for discussion. Papers of regional interest to geologists in the south-central and midcontinent United States, as well as those of general geological interest, will be considered for the program.

SYMPOSIA

The following symposia have been organized or are planned. Authors of papers to be considered for inclusion in the symposium should send abstracts directly to the convener. Contact the convener(s) as well for further information.

1. **Geology and Geophysics of the Precambrian of the Midcontinent.** M. E. Bickford, W. R. Van Schmus, Dept. of Geology, University of Kansas, Lawrence, KS 66045.
2. **The Tiptecanoe Sequence in the Western Interior.** W. Lynn Watney, John Doveton, Kansas Geological Survey, University of Kansas, Lawrence, KS 66046.
3. **Geological Reconnaissance of the Trans-Mississippi West.** Rex Buchanan, Kansas Geological Survey, University of Kansas, Lawrence, KS 66046; Daniel Merriam, Dept. of Geology, Wichita State University, Wichita, KS 67208.
4. **Geology and Paleontology of the Unique Hamilton**

(continued on p. 200)

South-Central Section (continued from p. 199)

- Quarry Locality.** Royal H. Mapes, Gene Mapes, Dept. of Geological Sciences, Ohio University, Athens, OH 45701.
- Pre-Cenozoic Aquifers of the Midcontinent.** Donald Jorgensen, U.S. Geological Survey, Lawrence, KS 66046.
 - Pollution and Contamination of Shallow Aquifers in the Midcontinent.**¹ Margaret Townsend, Marios Sophocleous, Kansas Geological Survey, University of Kansas, Lawrence, KS 66046.
 - Cyclicality and Periodicity Throughout the Geologic Record.** Wakefield Dort, Edward J. Zeller, Dept. of Geology, and Larry D. Martin, Museum of Natural History, University of Kansas, Lawrence, KS 66045.

FIELD TRIPS AND CORE AND SAMPLE WORKSHOPS

We plan the following scientific special events as part of this meeting.

- Precambrian of the Midcontinent—A Field Trip in a Room.**² An opportunity to examine cores, cuttings, and thin sections of U.S. midcontinent Precambrian rocks, together with geophysical results. Led by M. E. Bickford and W. R. Van Schmus, Dept. of Geology, University of Kansas, Lawrence, KS 66045. Planned in conjunction with symposium 1.
- Tipppecanoe Sequence of the Subsurface.**² Cores, subsurface maps, and samples from the buried Tipppecanoe Sequence in the U.S. midcontinent and western interior. Planned in conjunction with symposium 2. Organized by W. Lynn Watney, Kansas Geological Survey, University of Kansas, Lawrence, KS 66046.
- A Visit to Hamilton Quarry.** An opportunity to visit a unique locality where fossil insects, plants, and fish are remarkably preserved; in conjunction with symposium 3. Led by Royal H. Mapes and Gene Mapes, Ohio University, Athens, OH 45701, and Thomas Bridge, Dept. of Earth Sciences, Emporia State University, Emporia, KS 66801.
- Minelands Reclamation and Coal Geology in Southeastern Kansas.**¹ Examination of effects of coal and metals mining and progress in reclamation. Led by Lawrence L. Brady and James McCauley, Kansas Geological Survey, University of Kansas, Lawrence, KS 66046.
- Lamproite in Wilson and Woodson Counties, Kansas.** A one-day visit to the Silver City and Rose Dome intrusions and the active microlite mine. Emphasis on petrology and structure of domes, including geophysical information. Led by Pieter Berendsen and Ralph Knapp, Kansas Geological Survey, University of Kansas, Lawrence, KS 66045.

ABSTRACTS

Abstracts are limited to about 250 words and must be submitted camera-ready on the official 1988 abstract form, available from

Abstracts Coordinator	or	Frank Wilson
Geological Society of America		Kansas Geological Survey
P.O. Box 9140		University of Kansas
Boulder, CO 80301		Lawrence, KS 66046-2598
(303) 447-8850		(913) 864-3965

¹Planned as an event that will appeal to the educated and concerned general public as well as professional geologists and students.

²Individuals who have maps, samples, or other materials to contribute to this event should contact the organizers.

Send one original and five copies of abstracts to be considered for technical sessions to the Technical Program Chairman

Frank Wilson
Kansas Geological Survey
University of Kansas
Lawrence, KS 66046-2598

Send one original and five copies of abstracts for symposia directly to the convener (first name following the symposium topic or title). Acceptance or rejection of all abstracts may be based upon technical review. Abstracts will be judged on the basis of scientific merit, informative content, readability, and relevance to geologic problems of the south-central United States and the U.S. mid-continent. You may submit as many abstracts as you wish, but no more than two bearing an individual's name as first author will be accepted for the program. No author may give more than one oral presentation. Authors will be notified of acceptance during December 1987.

ABSTRACTS ARE DUE OCTOBER 30, 1987

STUDENT PAPERS

Cash awards will be presented for outstanding student papers. Judging will be based upon both quality of scientific research and effectiveness of presentation. To be eligible, only students may be listed as authors of the paper, and it must be designated on the abstract form as a student paper.

PROJECTION EQUIPMENT

All slides must be 2" x 2" and fit in a standard carousel tray. Two projectors and two screens will be provided in each technical session. Please bring your own loaded carousel, if possible. Overhead projectors will not be available.

EXHIBITS

Exhibits will be adjacent to the technical session rooms. The cost of booths for educational and nonprofit institutions will be reduced. For further information contact

Anthony W. Walton
Dept. of Geology
University of Kansas
Lawrence, KS 66045
(913) 864-4974

SPECIAL EVENTS

A welcoming party will be held on Sunday evening, March 13. The annual banquet is scheduled for Monday evening, March 14. Tours of Allen Press, a leading printer of scientific journals, will be arranged on Monday, March 14.

DETAILED INFORMATION

Information concerning registration, accommodations, and activities will appear in the December 1987 issue of *GSA News & Information* and in *Abstracts with Programs* for 1988. Requests for additional information or suggestions should be addressed to the General Chairman

Anthony W. Walton
Dept. of Geology
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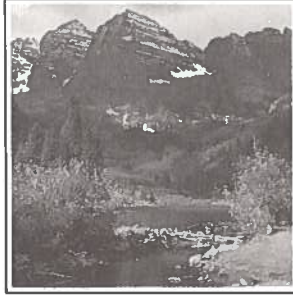
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CFG002, 489 p., ISBN 0-8137-5402-X, \$43.50

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edited by D. C. Roy, 1987

Field guides with area maps to locations in CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, New Brunswick, Newfoundland, Nova Scotia, eastern Ontario, and Quebec. Indexed. Tan spine.

CFG005, 517 p., ISBN 0-8137-5405-4, \$43.50

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edited by T. L. Neathery, 1986

Field guides with area maps to locations in AL, FL, GA, KY, LA, MS, NC, SC, TN, VA, and WV. Indexed. Green spine.

CFG006, 477 p., ISBN 0-8137-5406-2, \$40.50

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NORTH-CENTRAL SECTION

edited by D. L. Biggs, 1987

Field guides with area maps to locations in IL, IN, IA, MI, MN, MO, NE, OH, and WI. Indexed. Violet spine.

CFG003, 490 p., ISBN 0-8137-5403-8, \$43.50

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VOLUME 4

SOUTH-CENTRAL SECTION

edited by O. T. Hayward, 1987

Field guides with area maps to locations in AR, KS, OK, and TX. Indexed. Red spine.

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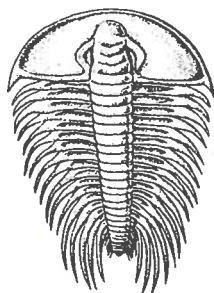
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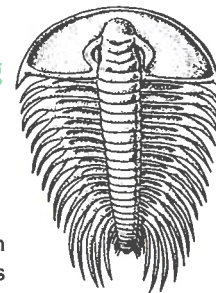


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**THE GEOLOGICAL SOCIETY
OF AMERICA**



PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS CORDILLERAN SECTION, GSA, 84th Annual Meeting

Las Vegas, Nevada
March 28-30, 1988



The **Cordilleran Section** of the Geological Society of America will meet at the Las Vegas Hilton Hotel. The meeting will be hosted by the Department of Geoscience, University of Nevada, Las Vegas, and will be held jointly with the Paleontological Society, Pacific Coast Section.

CALL FOR PAPERS

Technical sessions of the meeting will include the topics listed on the GSA abstract form. Papers, poster sessions, and symposia on those topics and other subject areas are solicited. Special sessions focused on specific themes or subjects may be arranged by the local program committee after review of the abstracts. Format for the oral presentations will be 15 minutes, followed by 5 minutes for discussion.

REGISTRATION

Preregistration will be by mail. On-site registration will take place on Sunday, March 27, 1988, from 12 noon to 9 p.m. at the Las Vegas Hilton and will continue there daily from 7:30 a.m. to 5 p.m. for the duration of the meeting. Preregistration fees will be \$50 for professional GSA members and \$15 for GSA student associates; \$65 for professionals who are not members of GSA and \$25 for students who are not GSA associates. The one-day preregistration fee will be \$30. On-site registration fees will be \$70 for all professional registrants, \$25 for student associates, and \$35 for students who are not members. The one-day registration fee on site will be \$40. **Please take advantage of the lower preregistration fees! PREREGISTER BY FEBRUARY 26, 1988.** Forms will be available in *December News & Information*.

SYMPOSIA

1. **Cenozoic Evolution of the Mojave Desert.** Roy Dokka, Dept. of Geology and Geophysics, Louisiana State University, Baton Rouge, LA 70803-4101; Michael McCurry, Eric Frost, Michael Woodburne.
2. **Mid-Tertiary Volcanics and Tectonism in the Southern Great Basin.** Eugene Smith, Dept. of Geoscience, University of Nevada, Las Vegas, NV 89154.
3. **Suspect and Exotic Terranes, Synthesis and Application to Undergraduate Education.** Greg Wheeler, Geology Dept., California State University, Sacramento, CA 95819-2694.
4. **Paleogeography of the Great Basin.** Linda McCollum, Dept. of Geology, Eastern Washington University, Cheney, WA 99004.
5. **Application of Quaternary Geology to New Tectonic Problems in the Basin and Range.** John Dohrenwend, U.S. Geological Survey, 345 Middlefield Rd., Menlo Park, CA 94025.
6. **Progress in Quaternary Dating Methods.** Dan Muhs, Barney Szabo, U.S. Geological Survey, Box 25046, Denver, CO 80225.
7. **Pre-Cenozoic History of the Eastern Mojave Desert.** Calvin Miller, Vanderbilt University, Nashville, TN 37235; Joe Wooden, Keith Howard, U.S. Geological Survey, Box 25046, Denver, CO 80225; Karl Karlstrom, Northern Arizona University, Flagstaff, AZ 86011.
8. **Chronology and Style of Laramide and Early Tertiary Geologic Events in the Eastern Great Basin and Adjacent Plateau Transition Zone.** Dick Young, SUNY, Geneseo,

NY 14454; Edwin McKee, U.S. Geological Survey, Box 25046, Denver, CO 80225.

FIELD TRIPS (tentative)

1. **Cenozoic Crustal Evolution of the Mojave Desert.** R. V. Dokka, M. McCurry, E. Frost, M. Woodburne.
2. **Depositional Environments and Paleotectonic Setting of Triassic and Jurassic Sediments and Volcanic Rocks: Southwestern Colorado Plateau to the Eastern Mojave Desert.** John Marzolf.
3. **Major Detachment Surfaces in the Southern Great Basin: Bear Mountain, Funeral Mountains, and Tucki Mountains.** Mike Carr, Bennie Troxel, Brian Wernicke.
4. **Gold Deposits of the Las Vegas Region.** Peter Drobeck.
5. **Mid-Miocene Volcanism in the Lake Mead-Eldorado Valley Area of Nevada and Arizona.** Eugene Smith.
6. **Trends in Early Paleozoic Bioturbation: Patterns and Processes.** Mary Droser, David Bottjer.
7. **Geomorphology and Pedology of the Kyle Canyon Alluvial Fan, Southern Nevada.** Janet Sowers.
8. **Volcanism and Tectonics of the Coso Range, California.** Glenn Roquemore, Wendell Duffield.
9. **Geology of the Nevada Test Site.** Richard Wyman.
10. **Overflight of the Grand Canyon and Its Geology.** Bruce Blackerby.
11. **Neogene Timing of Gravity Slides in the Halloran Range, Mojave Desert, California.** Bob Reynolds.
12. **Geology of the Sheep Mountains, Clark County, Nevada.** Peter Guth.
13. **Geology of the Waterman Hills Detachment Fault, Central Mojave Desert, California.** Allen Glazner, John Bartley.
14. **Geometry and Kinematics of a Miocene Accommodation Zone in the Central Black and Southern Eldorado Mountains, Arizona and Nevada.** James Faulds.
15. **Geology of a Tertiary Depocenter, Little Paiute and Ship Mountains, Eastern Mojave Desert.** Martin Knoll, Rick Hazlett.
16. **Permian and Lower Triassic Stratigraphy and Tectonic Evolution of the Mojave Desert.** J. Douglas Walker.
17. **Tertiary and Mesozoic Tectonic Evolution of the Railroad Valley/Pioche Area, Nevada.** John Bartley, Wanda Taylor, Gary Axen, Joan Fryxell.
18. **Correlation of Early Mesozoic Thrusts in the Southern Great Basin, and Their Possible Indication of 200-300 km of Neogene Crustal Extension.** Brian Wernicke, Doug Walker, J. Kent Snow.

POSTER SESSIONS

Ample space will be available for poster sessions, and we strongly encourage student and professional members to take advantage of this highly effective means of communication. Please

(continued on p. 203)

Cordilleran Section (continued from p. 202)

identify poster sessions on the GSA abstract form. For this meeting, poster sessions will be available for viewing for a full day.

ABSTRACTS

GSA abstracts for oral and poster sessions are limited to 250 words and **MUST** be submitted camera-ready on the official 1988 GSA abstract form. These forms are available from

Abstracts Coordinator
Geological Society of America
P.O. Box 9140
Boulder, CO 80301

and from

GSA Campus Representatives at
all college and university campuses.

ABSTRACTS ARE DUE NOVEMBER 4, 1987

Send one original and five copies to

GSA ABSTRACTS

David L. Weide
Dept. of Geoscience
University of Nevada
Las Vegas, NV 89154

All abstracts will be reviewed for informative content, correct structure, reliability of data, appropriate geographic coverage, and originality. Only one paper will be accepted from a single author; if papers are co-authored, no more than one paper may be presented by an author. These restrictions apply to technical sessions other than invited symposia. Authors will be notified of acceptance well in advance of the meeting.

PROJECTION EQUIPMENT

Projection equipment will be provided for 2" x 2" slides and single projectors only. Please bring your own loaded carousel trays, identified with your name, sessions, and speaker number. A Speaker Ready Room equipped with projectors will be available for review and practice.

SHORT COURSES

The Geological Society of America and the Cordilleran Section actively solicit technical short courses for the 1988 meeting in Las Vegas. If you are interested in organizing and presenting a short course, please contact the General Chairman.

BUSINESS MEETING

The Cordilleran Section will hold its business meeting luncheon at the Hilton Hotel at 12 noon on Tuesday, March 29, 1988.

EXHIBITS

Exhibits of educational and commercial organizations will be on display at the Hilton Hotel in proximity to the poster session area. Exhibit space must be reserved by January 15, 1988. For exhibitor information, contact the General Chairman.

SOCIAL EVENTS

A reception of bacchanalian proportion will be held on the evening of Sunday, March 27, 1988, at the Hilton Hotel. On Wednesday morning, March 30, a 5-km fun run will be held in the beautiful Red Rock area west of Las Vegas. Other recreational activities—swimming, tennis, golf, racquetball, etc.—are available through the Hilton and other Las Vegas hotels.

HOUSING

Headquarters for the 1988 Cordilleran Section meeting will be the Las Vegas Hilton. Accommodations are also available at other local hotels and motels.

CAR RENTAL

Special daily and weekly low rates are offered by Allstate Auto Rental, the Cordilleran Section's official agency for the Las Vegas meeting. For information, call TOLL-FREE 1-800-634-6186.

TRAVEL ARRANGEMENTS

Because numerous airlines serve Las Vegas, significant discount air fares are usually available and can easily be arranged through Ambassador Travel, the official travel agency for the Las Vegas meeting. For information, call Bob Conway at Ambassador Travel, (702) 385-7805.

DETAILED INFORMATION

Information concerning registration, hotel accommodations, and other activities will appear in a future issue of *GSA News & Information* and as part of *Abstracts with Programs* for 1988.

The symposia and field trips listed for this meeting are tentative; further suggestions are always appreciated. Inquiries, additional information, requests, or suggestions should be directed to

David L. Weide, General Chairman
Dept. Geoscience
University of Nevada
Las Vegas, NV 89154
(702) 739-3262

Committee on Short Courses Seeks Proposals for 1988

The newly formed GSA Committee on Short Courses has been charged "to designate subject areas in which GSA should be involved in the offering of short courses" and "to encourage appropriate qualified persons in these areas to organize and offer courses." The committee hereby makes its initial appeal to the GSA membership to provide ideas regarding appropriate subject areas and, equally important, the names of persons qualified to organize and offer the short courses. It would help the committee if proposers would document briefly the need for each subject area (e.g., the area is currently of intense interest, is one of critical national need, is important to continued development of the profession).

Short courses may be conducted in conjunction with GSA annual or section meetings, but we are particularly interested in identifying short courses to be offered during the 1988 Centennial Celebration in Denver, October 31–November 3. Individuals wishing to prepare short-course proposals for the Denver meeting should obtain short-course program guidelines from Short Course Coordinator Edna A. Collis at GSA headquarters in Boulder (303-447-2020) and submit completed proposals directly to her before December 15.

Those not wishing to submit short-course proposals this fall for 1988, but having ideas about exciting, timely subject areas and well-qualified short-course organizers for future years are urged to communicate them to the chair of the Committee on Short Courses, Elwood R. Brooks (Dept. of Geological Sciences, California State University, Hayward, CA 94542).

Call For Submissions of

YOUR GEOLOGIC PHOTOS

Your geologic photography can be part of a unique, quality photo publication.

GSA invites photographic submissions from individuals and organizations throughout the earth-science community for a unique volume of 100 colorful, geologic photo essays. The volume will be of the highest quality, featuring full-color photography accompanied by brief texts. It will be marketed to the scientific community, and to the general public as well.

Photo submissions for this volume should tell an interesting geologic story with a minimum of accompanying text, and should depict the beauty of the geology in our environment, including space, and/or the beauty inherent in the earth sciences.

Each suite of photos selected for the volume will be presented in a two-page layout: a feature photo in large format and full color, an accompanying brief text, and from one to six smaller photos expanding or explaining the geology of the feature photo. Some auxiliary photos will be black and white, others color.

SUBMISSION REQUIREMENTS

General: Multiple submissions are permitted, but each submission must include all materials described below.

Photos: Photos must be of high technical quality, tell an interesting geologic story, and express the beauty of our environment and/or the earth sciences.

For each submission, designate a central photo, *which must be in color*. Supply two to six auxiliary photos, in color or black and white, which further explain or amplify the geology depicted in the feature photo.

For color photos, submit one positive color transparency (slide), originals preferred; prints cannot be used. For each black and white photo, submit one 8" x 10" black and white print on double-weight, smooth, nonglossy paper.

Descriptive Text: Submit a manuscript of a short explanatory text, type double-spaced. The manuscript should be at least one double-spaced page in length, but no longer than two double-spaced pages. Write the text so that it can be understood by both scientists and nonscientists.

Address & Deadline: Send all submissions to:
J. Clark
Geological Society of America
3300 Penrose Place
P.O. Box 9140
Boulder, CO 80301

Submissions should be sent as early as possible, but no later than September 30, 1987—no extensions! Use the street address for express package services; use the box number for U.S. mail.



Penrose Conference on Volcanic Influences on Sedimentation Scheduled

A GSA Penrose Conference, "Volcanic Influences on Terrestrial Sedimentation," will be held August 28–September 3, 1988, at Crystal Mountain Resort near Mount Rainier National Park, Washington. Conveners are Gary A. Smith, Dept. of Geology, University of New Mexico, Albuquerque, NM 87131, (505) 277-4204, and William J. Fritz, Dept. of Geology, Georgia State University, Atlanta, GA 30303, (404) 658-2272.

Terrestrial volcanoclastics form a considerable part of the sedimentary rock record, especially in convergent-margin arc and continental rift settings. Recent research indicates that popular facies models, based primarily on study of syntectonic alluvium, are inadequate for study of synvolcanic sedimentary sequences. A better understanding of volcanic impacts on terrestrial sedimentation (fluvial, lacustrine, eolian) is requisite for proper interpretation of paleogeography, basin evolution, and volcanic history where volcanoclastics form an important fraction, or all, of the sedimentary record. The number of active researchers in volcanoclastic sedimentation has increased markedly in recent years. This surge of activity reflects, in part, the large observational data base provided by studies of the 1980–1982 eruptions of Mount St. Helens and the potential application of these observations to the ancient record. The resulting literature has produced conflicting ideas of depositional processes and terminology, as well as innovative concepts of volcanoclastic sedimentation.

The purpose of this conference is to assemble those scientists involved in this growing multidisciplinary research field in order to reach consensus on disagreements, become better acquainted with the breadth of current research activities, and identify the important goals for subsequent research. The conveners invite, and anticipate, presentations from diverse disciplines contributing knowledge on tephra erosion, sediment transport by high-concentration fluids, facies architecture of Quaternary terraces and ancient volcanoclastic sequences, interpretation of volcanic history from the sedimentary record, the depositional record and impact of distal air-fall tephra, taphonomy in terrestrial volcanoclastics, and other topics.

To maximize interaction and experience, the conference will be organized around poster sessions and field trips. Two days of technical sessions will be initiated by concise and provocative keynote addresses followed by group discussions and poster presentations. It is anticipated that visual presentation of data and ideas by posters will provide a better opportunity for discussion than a structured program of oral presentations. The meeting will begin with a one-day field trip, led by U.S. Geological Survey geologists, to observe aspects of erosion and sedimentation related to recent eruptions at Mount St. Helens. Two additional one-day field trips will alternate with the technical sessions and will visit the

Oligocene Olanapocosh Formation and the Miocene Ellensburg Formation near the conference site. Recent research has shed new light on the character of these units which are often cited in the volcanology literature. The field trips will highlight discussions on the problems of distinguishing fragmental deposits of volcanic and sedimentary origin, interpreting depositional processes, and reconstructing facies sequences.

The conference will be limited to approximately 60 participants who are actively pursuing research on terrestrial volcanoclastics or related aspects of sedimentation in volcanic terranes. Prospective participants should send a letter of application stating the relevance of their research to the conference themes and the topic(s) of potential contribution to the technical sessions to Gary A. Smith, Dept. of Geology, University of New Mexico, Albuquerque NM 87131.

Applications are due no later than **April 1, 1988**. The registration fee, which will include meals, lodging, field trips, and transportation to and from the Portland, Oregon, airport is not yet determined. Limited support will be available for a few graduate students. Support is also being sought to defray travel costs for foreign participants.

PEOPLE

GSA Member **Stanley C. Grant**, Independence, Kansas, has been appointed Secretary of the Kansas Department of Health and Environment.

Fellow **Jerry A. Lineback** had been appointed Assistant State Geologist and Manager of the Hydrology Program of the Georgia Geologic Survey.

Student Associate **Randall Marrett**, Cornell University, has been awarded a 1987–1988 Fulbright grant to conduct field research in Argentina.

Fellow **George W. Moore** has been appointed courtesy professor of geology at Oregon State University, Corvallis; previously with the U.S. Geological Survey in Menlo Park, California, he will continue part time with the USGS as deputy chairman for marine geoscience of the Circum-Pacific Map Project.

Member **Paul H. Pausé**, Midland, Texas, will serve as president of the Permian Basin Section of the Society of Economic Paleontologists and Mineralogists for 1987–1988.

Fellow **W. R. Van Schmus** has been appointed the first Union Pacific Foundation/Union Pacific Resources Co. distinguished professor of geology at the University of Kansas, Lawrence.

Fellow **W. R. Wyllie**, California Institute of Technology, has been awarded the German Mineralogical Society's highest honor, the Abraham-Gottlob-Werner-Medaille.

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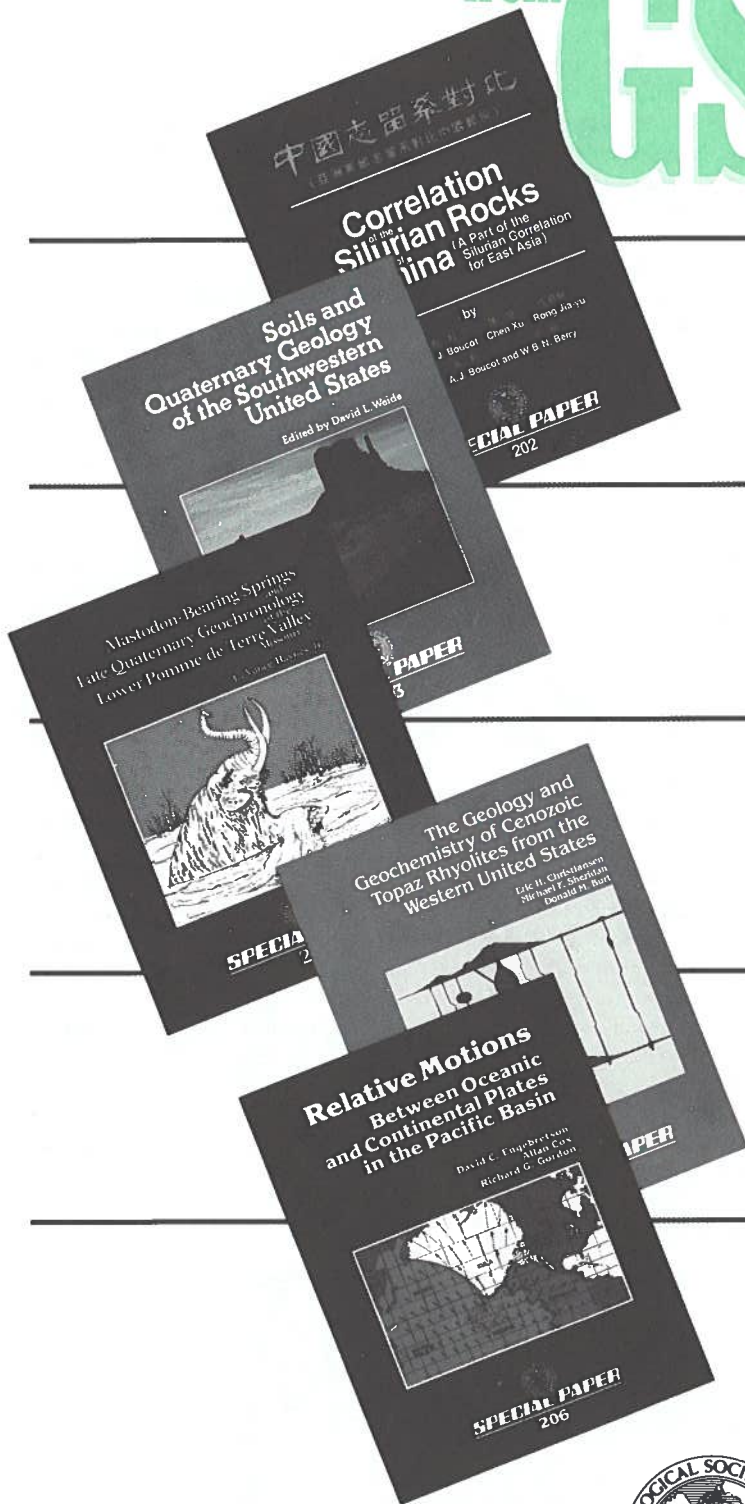
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by Mu En-zhi, A. J. Boucot, Chen Xu, Rong Jia-yu
 edited by A. J. Boucot and W.B.N. Berry, 1986

A comprehensive compilation of information relevant to the correlation of the Chinese Silurian rocks by means both of fossils and physical data available through 1980 is presented.

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Soils and Quaternary Geology of the Southwestern United States

edited by David L. Weide, 1985
 Five papers explore the pedogenic process of carbonate and clay accumulation of their rates and depths of formation. Three papers are a series of regional studies.

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Mastodon-Bearing Springs and Late Quaternary Geochronology of the Lower Pomme de Terre Valley, Missouri

by C. Vance Haynes, Jr., 1985
 Fourteen field sessions in the area have provided a radiocarbon-dated chronostratigraphic sequence in 4 terraces reflecting 5 major episodes of aggradation and degradation. Spring deposits within the terraces contain bone beds associated with peat lenses containing pollen, plant, and beetle remains, all of which have provided paleoecological data.

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by Eric H. Christiansen, Michael F. Sheridan, Donald M. Burt, 1986
 High-silica, topaz-bearing rhyolites of Cenozoic age are widely distributed across the western U.S. and Mexico. In the U.S., their ages span much of the Cenozoic Era. Emplacement followed or was contemporaneous with calc-alkaline and basaltic magmatism in the Basin and Range province, along the Rio Grande rift, and in Montana.

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Relative Motions Between Oceanic and Continental Plates in the Pacific Basin

by David C. Engebretson, Allan Cox, and Richard G. Gordon, 1985
 A model is presented for the displacement history between western North America, eastern Eurasia, and adjacent oceanic plates for the past 180 million years. The model uses a new determination for relative motion between the oceanic plates of the Pacific basin.

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MEETINGS

(Asterisk indicates new or changed information)

1987

Third International Symposium on Observation of the Continental Crust through Drilling, September 7-10, 1987, Mora and Orsa, Sweden. Information: Deep Drilling in Crystalline Bedrock, c/o Stockholm Convention Bureau, Box 6911, S-10239 Stockholm, Sweden.

XI International Congress of Carboniferous Stratigraphy and Geology, September 7-11, 1987, Beijing, China. Information: Yang Jingzhi, Nanjing Institute of Geology and Paleontology, Academia Sinica, Nanjing, China.

International Workshop on Computerized Basin Analysis, September 7-12, 1987, Szeged, Hungary. Information: Laszlo Somos, Geological Survey of Hungary, Pf. 106, H-1442, Budapest, Hungary; telephone (36-1) 634 431; Telex 225 220 mafi h.

International Symposium on the Terminal Precambrian and Cambrian Geology, September 8-14, 1987, Yichang, China. Information: Wang Xiaofeng, secretariat, Yichang Institute of Geology and Mineral Resources, Chinese Academy of Geological Sciences, P.O. Box 502, Yichang, Hubei, China.

American Association of Petroleum Geologists Rocky Mountain Section meeting, September 13-16, 1987, Boise, Idaho. Information: David H. Hawk, J.R. Simplot Co., 999 Main St., Boise, ID 83707; (208) 336-2110.

Origin of Granites Symposium, September 14-16, 1987, Edinburgh, Scotland. Information: Meetings Secretary (Hutton Meeting), Royal Society of Edinburgh, 22-24, George St., Edinburgh EH2 2PQ, Scotland.

Midcontinent Rift System Scientific Drilling Workshop, September 23-25, Duluth, Minnesota. Information: William C. Kelly, Institute of Science and Technology, University of Michigan, 220 Bonisteel Blvd., Ann Arbor, MI 48109.

18th Annual Geomorphology Symposium on Catastrophic Flooding, September 26-28, 1987, Oxford, Ohio. Information: Larry Mayer, Dept. of Geology, Miami University, Oxford, OH 45056; (513) 529-3218.

***American Association of Petroleum Geologists Mid-Continent Section**, September 27-29, 1987, Tulsa, Oklahoma. Information: George Bole, Amoco Production Co., P.O. Box 591, Tulsa OK 74102; (918) 581-3161.

Geophysical and Geochemical Exploration for Minerals and Groundwater, September 27- October 1, 1987, Toronto, Ontario. Information: Exploration '87, c/o 222 Snidercroft Rd., Concord, Ontario L4K 1B5, Canada; (416) 669-2280; Telex 06-964570.

Fifth International Flint Symposium, September 27-October 2, 1987, Bordeaux, France. Information: 5th International Flint Symposium, Secrétaire General, c/o Michel Lenoir, Institut du Quaternaire, Batiment de Géologie, Avenue des Facultés, Université de Bordeaux I, 33405 Talence Cedex, France.

National Association of Geology Teachers Far Western Section Fall Conference, October 2-4, 1987, Hayward, California. Information: Elwood Brooks, Dept. Geological Sciences, California State University, Hayward, CA 94542; (415) 881-3486.

GeoTech '87 (microcomputer applications in earth science), October 3-6, 1987, Denver, Colorado. Information: Stephen A.

Krajewski, Geomath, Inc., 165 S. Union Blvd., Suite 410, Lakewood, CO 80228; (303) 980-8625.

Underwater Mining Institute, October 4-7, 1987, Newport, Oregon. Information: Allen Miller, UW Sea Grant Advisory Services, 1800 University Ave., Madison, WI 53705; (608) 262-0645.

Troodos '87: Ophiolites and Oceanic Lithosphere, October 5-10, 1987, Nicosia, Cyprus. Information: Troodos '87 Symposium, Geological Survey Dept., Nicosia, Cyprus.

North American Conference on Tectonic Control of Ore Deposits, October 6-9, 1987, Rolla, Missouri. Information: Geza Kisvarsanyi, Dept. Geology and Geophysics, University of Missouri, Rolla, MO 65401; (314) 341-4663.

***American Association of Petroleum Geologists Eastern Section**, October 7-10, 1987, Columbus, Ohio. Information: William Rike, P.O. Box 763, Worthington, OH 43085; (614) 888-6747.

Society of Economic Paleontologists and Mineralogists Great Lakes Section Annual Meeting and fall field trip, October 9-11, 1987, southern Indiana. Information: J. R. Dodd, Dept. of Geology, Indiana University, Bloomington, IN 47405; (812) 335-5322 or 5581.

Geothermal Resources Council Annual Meeting, October 12-16, 1987, Sparks, Nevada. Information: Geothermal Resources Council, P.O. Box 1350, Davis, CA 95617-1350; (916) 758-2360.

(continued on p. 208)

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MEETINGS (continued from p. 207)

Mathematical Methods in Geology, 16th Annual Geochautauqua, October 12-16, 1987, Pribiam, Czechoslovakia. Information: V. Nemeč, Geindustria, Geologicka 2, 152 00 Praha 5, Barrandov, Czechoslovakia; telephone (42-2) 590228 or (42-2) 7811801.

Indiana Geological Survey Sesquicentennial Celebration, October 15-16, 1987, New Harmony, Indiana. Information: Robert H. Shaver, Indiana Geological Survey, 611 North Walnut Grove, Bloomington, IN 47405; (812) 335-7428.

79th Annual New England Intercollegiate Geological Conference, October 16-18, 1987, Montpelier, Vermont. Information: David S. Westerman, Dept. Earth Science, Norwich University, Northfield, VT 05663; (802) 485-2337.

32nd Annual Midwest Groundwater Conference, October 28-30, 1987, Madison, Wisconsin. Information: Jim Krohelski, U.S. Geological Survey, 6417 Normandy Lane, Madison, WI 53719-1133; (608) 276-3850.

***American Association of Petroleum Geologists Gulf Coast Section**, October 28-31, 1987, San Antonio, Texas. Information: Don F. Tobin, 1530 Milam Bldg., San Antonio, TX 78205; (512) 227-9540.

***First Brazilian Congress on Geochemistry**, October 30-November 2, 1987, Porto Alegre, Brazil. Information: Geol. Eduardo Camozzato, CPRM, Rua Banco da Província, 105 - 90.650, Porto Alegre/RS, Brazil; phone (0512)33-7311; Telex (051)1062 CPRM.

Workshop to Develop Scientific Drilling Initiatives in the Caribbean, November 17-21, 1987, Runaway Bay, Jamaica.

Information: R. C. Speed, Dept. Geological Sciences, Northwestern University, Evanston, IL 60201; (312) 491-3238.

International Waste Management Conference, November 29-December 5, 1987, Hong Kong. Information: Gloria Greene, ASME Professional Development Dept., 345 East 47th St., New York, NY 10017; (212) 705-7398.

Society of Economic Paleontologists and Mineralogists Gulf Coast Section 8th Annual Research Conference, Paleontological Applications in Petroleum Exploration, December 6-9, 1987, Houston, Texas. Information: Charles L. McNulty, Dept. of Geology, University of Texas, UTA Box 19049, Arlington, TX 76019; (817) 273-2979.

American Geophysical Union Fall Meeting, December 7-11, 1987, San Francisco, California. Information: Ann E. Singer, American Geophysical Union, 2000 Florida Ave., N.W., Washington, DC 20009; (202) 462-6903.

First Arab Conference on Geological Education, December 12-14, 1987, Baghdad, Iraq. Information: Conference Secretariat, Arab Conference on Geological Education, Arab Geologist Association, P.O. Box 1247, Baghdad, Iraq; Telex 212197 JAMIT IK.

GSA 1987

Annual Meeting, October 26-29, 1987, Phoenix, Arizona

Penrose Conferences

Paleoenvironmental Interpretation of Paleosols, September 11-17, 1987, Warm Springs Indian Reservation, Oregon. Information: Greg Retallack, Dept. of Geology, University of Oregon, Eugene, OR 97403-1272; (503) 686-4573.

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MEETINGS (continued from p. 208)

Cordilleran Metamorphic Core Complexes, Revisited: Implications for Crustal Extension and Shortening in the North American Cordillera, September 13–18, 1987, Elko, Nevada. Information: Arthur W. Snoke, Dept. of Geology and Geophysics, University of Wyoming, P.O. Box 3006, Laramie, WY 82071; (307) 766-5457.

Exposed Cross Sections through the Continental Crust, September 27–October 2, 1987, Killarney, Ontario, Canada, *has been canceled*.

1988

Australian Association of Exploration Geophysicists–Society of Exploration Geophysicists International Geophysical Conference and Exhibition, February 14–21, 1988, Adelaide, Australia. Information: ASEG/SEG Adelaide '88 Conference, c/o Ellisservice Convention Management, P.O. Box 753, Norwood 5067, South Australia, Australia; (08) 332-4068; Telex AA87129.

***American Association of Petroleum Geologists Southwest Section**, February 21–23, 1988, El Paso, Texas. Information: Robin Hoffer, Dept. of Geology, University of Texas, El Paso, TX 79968; (915) 747-5501.

American Association of Petroleum Geologists Annual Meeting, March 20–23, 1988, Houston, Texas. Information: AAPG Convention Dept., P.O. Box 979, Tulsa, OK 74101; (918) 584-2555.

Anadarko Basin Symposium, April 5–6, 1988, Norman, Oklahoma. Information: Kenneth S. Johnson, Oklahoma Geological Survey, University of Oklahoma, Norman, OK 73019; (405) 325-3031.

***American Association of Petroleum Geologists Pacific Section**, April 17–19, 1988, Santa Barbara, California. Information: Jack Cunningham, Celeron Oil & Gas, 111 West Micheltorena, Santa Barbara, CA 93101-3018; (805) 966-0831.

V. M. Goldschmidt Conference for geochemistry, May 11–13, 1988, Baltimore, Maryland. Information: Goldschmidt Conference Coordinator, Pennsylvania State University, 410 Keller Bldg., University Park, PA 16802. (*Abstracts due December 18, 1987.*)

Sixth Thematic Conference on Remote Sensing for Exploration Geology, May 16–19, 1988, Houston, Texas. Information: Thematic Conference, Environmental Research Institute of Michigan, P.O. Box 8618, Ann Arbor, MI 48107; (313) 994-1200, ext. 3382; Telex 4940991 ERIMARB.

American Geophysical Union Spring Meeting, May 16–20, 1988, Baltimore, Maryland. Information: Ann E. Singer, American Geophysical Union, 2000 Florida Ave., N.W., Washington, DC 20009; (202) 462-6903.

Bicentennial Gold 88, May 16–20, 1988, Melbourne, Australia. Information: R. R. Keays, Dept. of Geology, University of Melbourne, Parkville, Victoria 3052, Australia; telephone (03) 345 1844; Telex AA35185. (*Abstracts due September 30, 1987.*)

Geological Association of Canada–Mineralogical Association of Canada–Canadian Society of Petroleum Geologists Joint Annual Meeting, May 22–25, 1988, St. John's, Newfoundland. Information: John Fleming, Newfoundland Dept. of Mines and Energy, P.O. Box 4750, St. John's, Newfoundland A1C 5T7, Canada; (709) 576-2768.

Case Histories in Geotechnical Engineering 2nd International Conference, June 1–5, 1988, St. Louis, Missouri. Information: Shamsheer Prakash, Room 308, Dept. of Civil Engineering, University of Missouri, Rolla, MO 65401; (314) 341-4461.

29th U.S. Symposium on Rock Mechanics, June 13–16, 1988, Minneapolis, Minnesota. Information: Jan Becker, Dept. Professional Development, University of Minnesota, 315 Pillsbury Dr. S.E., Minneapolis, MN 55455; (612) 626-1358. (*Abstracts due September 15, 1987.*)

***Fourth Symposium on the Geology of the Bahamas**, June 17–22, 1988, San Salvador Island, Bahamas. Information: Donald T. Gerace, CCFL Bahamian Field Station, 270 Southwest 34th St., Fort Lauderdale, FL 33315.

***Shelf Sedimentation: Events and Rhythms** (SEPM research conference), June 26–July 1, 1988, Santa Cruz, California. Information: M. Field or E. Clifton, USGS, 345 Middlefield Rd., Menlo Park, CA 94025; (415) 354-3088 or 3112.

Seismic Probing of the Continents and Their Margins International Symposium, July 6–8, 1988, Canberra, Australia. Information: Jim Leven, Bureau of Mineral Resources, P.O. Box 378, Canberra, ACT 2601, Australia; telephone (062) 499111; Telex AA62109.

***International Working Meeting on Soil Micromorphology** (meeting of Subcommittee B of the International Society of Soil Science), July 10–15, 1988, San Antonio, Texas. Information: L. P. Wilding, Dept. of Soil and Crop Sciences, Texas A&M University, College Station, TX 77843-2474; (409) 845-3604.

First International Conference on Radiolaria, July 18–20, 1988, Marburg, Federal Republic of Germany. Information: Joyce R. Blueford, U.S. Geological Survey, MS 144, 345 Middlefield Rd., Menlo Park, CA 94025; (415) 329-4004, or R. Schmidt-Effing, Internad-Conference, Dept. of Geosciences, Philipps-Universität, Lahnberge, D-3550 Marburg, Federal Republic of Germany.

Permafrost 5th International Conference, August 2–5, 1988, Trondheim, Norway. Information: V International Conference on Permafrost, Norwegian Institute of Technology, Studies Administration, N-7034 Trondheim-NTH, Norway.

***American Association of Petroleum Geologists Rocky Mountain Section**, August 21–24, 1988, Bismarck, North Dakota. Information: Roger N. Borchert, Box 5006, Bismarck, ND 58501; (701) 223-3588.

***6th International Fission Track Dating Workshop**, September 5–9, 1988, Besançon, France. Information: J.-L. Janier-Dubry, Lab. de Microanalyses Nucléaires, U.F.R. des Sciences et Techniques, 16 Route de Gray, 25030 Besançon cedex, France; telephone 81.53.81.22.

International Symposium on Geochemistry and Mineralization of Proterozoic Mobile Belts, September 6–10, 1988, Beijing, China. Information: Proterozoic Geochemistry Symposium, c/o Prof. Sun Dazhong, Tianjin Inst. Geology and Mineral Resources, CAGS No. 4, 8th Rd., Dazhigu, Tianjin 300170, People's Republic of China.

International Symposium on Engineering Geology: Study, Preservation and Protection of Ancient Works, Monuments and Historical Sites, September 19–23, 1988, Athens, Greece. Information: Paul G. Marinos, Greek Committee of Engineering

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Salary depends on experience and publication record. The University of Texas at Austin is an Equal Opportunity/Affirmative Action Employer. Send resume and names of three references to: E.G. Wermund, Bureau of Economic Geology, The University of Texas at Austin, University Station, Box X, Austin, Texas 78713-7508.

BASIN ANALYST

The Bureau of Economic Geology has a Research Associate position open requiring a Ph.D. in Geology with specialization in basin analysis, especially of clastic depositional systems, modern and ancient. Preference will be given for experience integrating geology with engineering and production data and logging core with basin analysis toward the delineation of compartmentalization of petroliferous reservoirs. Scientific publication record will be required with references and vitae.

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GEOCHEMISTS

The Bureau of Economic Geology has open-

ings for two Ph.D.-level research positions (Research Associates) in the field of low-temperature geochemistry. Applicants should have a Ph.D. in Geology, Geochemistry, or other physical science and interest in broad aspects of the geochemistry and petrology of sedimentary rocks. Preference will be given to individuals with expertise in one or more of the following areas: electron microprobe analysis, thermodynamic and kinetic modeling, and fluid inclusion research. Research will involve studies of diagenesis and water-rock interactions in evaporites, carbonates, and clastic rocks. The microprobe specialist will also supervise the operation of the Bureau's automated CAMECA electron microprobe and JEOL scanning electron microscope with energy dispersive spectrometer.

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MACARTHUR CHAIR IN HYDROGEOLOGY/ENVIRONMENTAL SYSTEMS Bucknell University

The Department of Geology invites applications for a tenure-track faculty position occupying the MacArthur Chair in Hydrogeology and Environmental Systems. We are particularly interested in identifying geoscientists with sufficient experience to warrant appointment at the Assistant or Associate Professor level and with concern for applying their specialty to broader questions of interactions within environmental systems. We seek an individual who will take advantage of the strong programs in science and engineering present at Bucknell in a strong liberal arts context, and who has an enthusiasm for teaching highly-qualified undergraduates at both introductory and advanced levels. Our primary objective is to receive applications from persons with a Ph.D. and experience in hydrogeology, but we will also consider geomorphologists with research interests in low-temperature geochemistry of natural water systems who can teach a course in hydrogeology. This position will be filled beginning September, 1988. Salary is competitive; funds are included for equipment and research; and there is a lower teaching load for the initial five years of the appointment. Applicants should send a detailed resume, the names of three individuals from whom letters of recommendation can be obtained, and a statement of research and teaching interests to: Dr. J. C. Allen, Chairman, Department of Geology, Bucknell University, Lewisburg, PA 17837. Review of applications will begin November 1, 1987. Bucknell University is an Affirmative Action/Equal Opportunity Employer.

THE DEPARTMENT OF EARTH AND SPACE SCIENCES at the University of California, Los Angeles (UCLA) has two tenure-track faculty positions available in the general area of light- or radiogenic-isotope geochemistry, organic or inorganic. We are particularly interested in promising scientists who have the Ph.D. and who are in the earlier stages of their career. UCLA has made a commitment to continue to excel in isotope geochemistry adding to our present strengths in this and related areas. The successful candidates will pursue a vigorous research program and teach undergraduate and graduate courses in the Earth and space sciences. Applicants should send curriculum vitae, research and teaching plans, and the names of at least three references to Prof. Art Montana, Chairman of the Department of Earth and Space Sciences, UCLA, Los Angeles, California 90024 before December 1, 1987. They should arrange to have the letters of evaluation transmitted directly to this address. The University of California is an Equal-Opport-

tunity, Affirmative-Action employer, and we encourage applications from women and minority scientists.

THE DEPARTMENT OF GEOGRAPHY AND GEOLOGY AT MOUNT HOLYOKE COLLEGE invites applications for a full-time, tenure-track position at the Assistant Professor level in a three person geology program, beginning September 1988. Applicants must have completed all requirements for the Ph.D. before the appointment can be finalized. Some teaching experience is preferred, and a sincere commitment to high-quality teaching of excellent undergraduate students (both geology majors and nonmajors) in a liberal-arts setting is an absolute must. Applicants must also be willing to interact (both in research and in teaching) with earth science faculty and graduate student colleagues in a local FiveCollege consortium. We solicit applications primarily from individuals with teaching/ research competence in surficial geology (geomorphology, glacial geology, hydrogeology, or sedimentology), but would also like to consider applications from specialists in geophysics (especially seismology). Strong field orientation is important. If interested, please send resume, onepage statement of immediate teaching and research goals, and names of three references to: Martha M. Godchaux, Chair, Department of Geography & Geology, Mount Holyoke College, South Habley, MA 01075 before January 1, 1988. Mount Holyoke College is an Affirmative Action/ Equal Opportunity Employer. We'll be conducting interviews at the GSA in Phoenix.

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MEETINGS

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Geology, 1988 Symposium Secretariat, P.O. Box 19140, GR-117 10 Athens, Greece; Telex 45 4312 POLX.

Fourth International Tectonostratigraphic Terrane Conference, September 19-30, 1988, Nanjing University, Nanjing, People's Republic of China. Information: Tom Wiley, U.S. Geological Survey, MS-999, 345 Middlefield Road, Menlo Park, CA 94025; (415) 354-3067.

American Geophysical Union Fall Meeting, December 5-9, 1988, San Francisco, California. Information: Ann E. Singer, American Geophysical Union, 2000 Florida Ave., N.W. Washington, DC 20009; (202) 462-6903.

GSA 1988

Northeastern Section, March 9-12, Portland, Maine
South-Central Section, March 14-15, Lawrence, Kansas
Cordilleran Section, March 28-30, Las Vegas, Nevada
Southeastern Section, April 6-8, Columbia, South Carolina
North-Central Section, April 21-22, Akron, Ohio

Rocky Mountain Section, May 16-18, Sun Valley, Idaho

Annual Meeting, October 31-November 3, Denver, Colorado

Penrose Conferences

***Origin of Massif Anorthosites and Related Rocks**, August 1988, Chugwater, Wyoming. Information: B. Ronald Frost, Dept. of Geology and Geophysics, University of Wyoming, Laramie, WY 82071; (307) 766-4290.

***Volcanic Influences on Terrestrial Sedimentation**, August 28-September 3, 1988, Crystal Mountain, Washington. Information: Gary A. Smith, Dept. of Geology, University of New Mexico, Albuquerque, NM 87131; (505) 277-4204.

Paleontologists to Sponsor Olson Symposium

The Paleontological Society and the Society of Vertebrate Paleontologists are cosponsoring a symposium, "The New Paleontology," on Saturday, October 24, 1987, in Tucson, Arizona. The symposium is in honor of E. C. Olson. For information on housing and dinner arrangements, contact Everett Lindsay, Dept. of Geosciences, University of Arizona, Tucson, AZ 85721.

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PREREGISTRATION DUE SEPTEMBER 25
for meeting information 303/447-2020

ASSOCIATED SOCIETIES MEETING WITH GSA: Cushman Foundation • National Association of Geology Teachers
Geochemical Society • Paleontological Society • Geoscience Information Society • Society of Economic Geologists
Mineralogical Society of America

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