



# GSA NEWS & INFORMATION

Monthly Newsletter of  
The Geological Society of America

VOLUME 6, NUMBER 4

APRIL 1984

## Posters Provide Exciting Alternative to Oral Sessions

by Sue Beggs

GSA Meetings Manager

About 1,400 abstracts will contend for space in the technical program for GSA's 1984 Annual Meeting in Reno, Nevada (November 5-8). One way to increase the chances for acceptance is to submit abstracts for either oral OR poster presentation. This option is available in section 3 of GSA's 1984 abstract form.

Poster abstracts receive the same intensive reviews as other abstracts and must meet the same scientific standards. Poster abstracts have an advantage, however, because they are not subject to rejection due to limits of time and space at the meeting, as are many papers submitted for oral session only. At the 1983 GSA Annual Meeting in Indianapolis, 20% of the papers were presented in poster form. Accepted poster abstracts are published in GSA's *Abstracts with Programs* right along with oral-session abstracts.

The poster session, pioneered in Europe and introduced to the earth sciences on this side of the Atlantic by GSA, gives scientists an exciting alternative to the oral presentation. Poster sessions offer presenters a less constrained atmosphere than does a formal session. In the poster booth the presenter is in charge, able to relax and communicate. The result generally is a better presentation of the science and an improved exchange of ideas.

Poster booths are grouped in one area. Each booth is equipped with three 8' high by 4' wide composition pin-boards on which presenters may display graphs, charts, pictures, maps, and some text to illustrate the main points of their presentations. Each poster presentation is on display for 4 hours. The presenter must be in the booth for at least 2 of those hours.

### HOW TO ASSEMBLE A GOOD PRESENTATION

#### Organization

Poster sessions *must be well organized*. Visitors should be able to recognize a starting point, then follow the graphics and the science easily without any help. If there is too much to look at or if it is not well organized, the viewer will be confused and may not



Poster sessions at GSA's 1983 Annual Meeting in Indianapolis accommodated 236 volunteered abstracts, about the same number as invited abstracts presented in symposia.

get your message. Keep it simple, keep it to the point, and design the display so it guides the viewer.

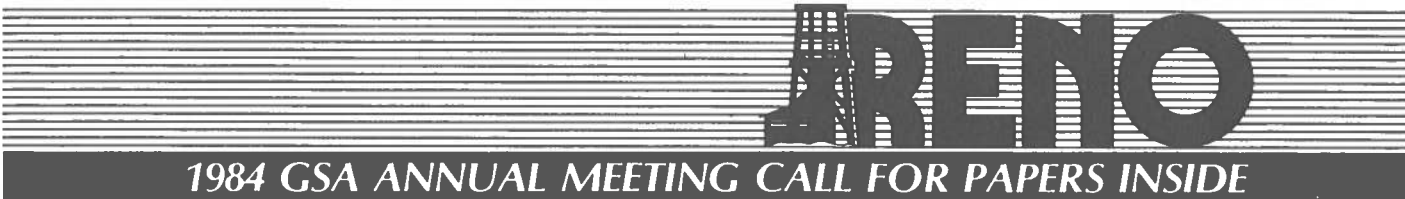
Lay out pieces of information as you would read them on a page—from the top, left to right, and down. Label elements A, B, C, or 1, 2, 3 to make it easier for viewers to follow and to give them points of reference for discussion.

Size is important too. If all elements of your display are no larger than 17" x 22", you can have a portable "suitcase" presentation.

#### Mounting

Mount pictures, graphs, and other elements on paper or poster board of contrasting colors. Your graphics will stay flat,

(continued on p. 58)



## Posters (continued from p. 57)

making them easier to carry, store, and display. Photos must be mounted to avoid curl. Art-supply firms carry spray adhesives and poster board that are ideal for this purpose.

Planning your display may take time, but given the dimensions of the pin-boards, you should have little trouble if you do a bit of advance sketching on graph paper. Plan to leave an inch or so of mounting board showing around your elements to frame them. Mount captions so they can be related to the appropriate graphics quickly and easily. Trim mounting board cleanly, using a matte cutter or X-Acto knife.

Remember, *all elements should be mounted*. Mounting your elements helps frame them, giving your display a professional look that attracts attention and speaks well of you. There is no doubt that a sloppy display will cause viewers to question whether the science may be sloppy too.

## Lettering

Keep written material included in the presentation short. All type should be easily read from a distance of 4 to 6 feet. Titles must stand out to help your viewers find their way through your material. They should be 1" to 2½" (2.5 to 5.26 cm) high. Neat hand-lettering or stenciling will do. Rub-on letters or adhesive-back letters (Format, Letraset, Artype, Normatype, etc.) are better and can be obtained from art-supply stores anywhere. Perfectionists may want to work with commercial typographers, who can provide outstanding phototype heads.

Type styles for headings and labels should be bold or semibold weight. Avoid stylish scripts or type styles with thin strokes. Display type for subheadings, figure identification, or emphasis should be larger than typewriter typing but smaller than your main heading type. It, too, should be bold or semibold.

Mount lettering on white or light-colored paper for best results, then mount on poster board of contrasting color. Or mount directly on poster board if you are handy with art work.



Poster presentations offer advantages, including opportunity for discussion with authors.

Don't use rubber cement to mount paper with rub-on lettering; the solvent may dissolve the lettering adhesive.

If you are including typed copy (captions or short explanatory text elements, graphs, or other data), use plain white opaque paper. Use a typewriter with a carbon ribbon and a *clean type element* to prepare the material. Double space copy for faster, easier reading.

For more information on how to design and execute a poster presentation, write or call Meetings Department, GSA, P.O. Box 9140, Boulder, CO 80301; (303) 447-2020.

## PEOPLE

GSA Fellow **Bruce A. Bolt**, University of California, Berkeley, has been re-elected president of the California Academy of Sciences. He was also elected vice-chairman of the California Seismic Safety Commission.

Fellow **Jack Oliver**, Cornell University, has been appointed director of the newly formed Institute for the Study of Continents at Cornell.

Fellow **Harry A. Tourtelot**, USGS, Denver, has been appointed Assistant Chief Geologist for the Central Region of the U.S. Geological Survey.

## SEG Field Trip

The SEG Precious Metals Field Trip will take place October 30 through November 3, 1984, directly preceding the GSA 1984 Annual Meeting in Reno, Nevada. Trip participants will assemble in Reno on the night of October 30 for an early-morning start on October 31. The group will travel from Reno to Elko to Ely, returning to Reno in the early evening of Saturday, November 3. Trip leader is Joseph V. Tingley, Nevada Bureau of Mines and Geology. For more information: Western Experience, 2450 Central Ave., Suite P2, Boulder, CO 80302; (303) 449-3352.

Are you qualified by education, professional experience, and standing among your peers?

# Why Not Join AIPG?

The Institute welcomes the membership application of those who may meet its high standards for acceptance as Certified Professional Geological Scientists.

AIPG services to its members, and to the public, include: certification, education, information, and representation.

If you'd like to know more, call or write Victor C. Tannehill, Executive Director.

American Institute of Professional Geologists  
7828 Vance Drive-Suite 103  
Arvada, Colorado 80003  
(303) 431-0831



## GSA News & Information

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Prepared from contributions from the staff and membership. Executive Director: F. Michael Wahl; Managing Editor: Faith Rogers; Associate Editor: Lee Gladish; Production and Advertising Manager: James R. Clark; Assistant Production Manager: Meredith Larson; Production Assistants: Ann H. Fogel and June E. Thomas.



## CENTENNIAL NEWS

by Allison R. (Pete) Palmer

### Additional Major DNAG Support

Late in January 1984 we received official confirmation of a major five-year grant from the Union Pacific Foundation, upon recommendation of Champlin Petroleum Co., for support of the DNAG project. This brings us significantly closer to our goal of \$4.5 million and broadens the base of industry support for the project.

### Final Coordinating Conference, Gulf of Mexico Basin

Two beautiful days in Austin, Texas, were devoted to a review of chapter compilations for the synthesis volume on the Gulf of Mexico region. Several manuscripts are

now in the hands of the editors, and all components of the volume should be completed and in review by the end of the summer. Representatives from nine of the major oil companies contributed significantly to the discussions about the information compiled for this volume. Publication will be in 1985.

### Progress on the Synthesis Volume for the Western Atlantic Region

As of early February 1984, twenty-six chapter manuscripts for this volume are in review or revision, and two have progressed to the typesetting stage. Publication in late 1984 now appears reasonable.

### Transect of Alaskan Lithosphere Proposed

The U.S. Geological Survey (USGS), Alaska Division of Geological and Geophysical Surveys (ADGGS), University of Alaska, and Rice University are organizing a cooperative geophysical/geologic transect of the Alaskan crust and upper mantle, to be known as the Trans-Alaska Lithosphere Investigation

(TALI). The route of TALI lies along the north-south corridor of the trans-Alaska oil pipeline between Prudhoe Bay and Valdez and extends offshore across the Pacific and Arctic continental margins. The transect will incorporate several supplementary profiles intersecting the primary route. TALI is envisaged as a coordinated multidisciplinary effort among government, academic and industry scientists and institutions. To prepare a prospectus for the transect, a workshop will be held in Anchorage on May 29, 1984, prior to the meeting of the Seismological Society of America and the Cordilleran Section of the Geological Society of America (May 30-June 1, 1984). The National Science Foundation is cosponsoring the workshop.

#### 1985 GSA ANNUAL MEETING

OCTOBER 28-31, 1985

ORLANDO, FLORIDA

#### FIELD-TRIP PROPOSALS DUE JUNE 1, 1984

#### SYMPOSIA PROPOSALS DUE JANUARY 1, 1985

Field Trip Chairman: Douglas L. Smith, Dept. of Geology, University of Florida, Gainesville, FL 32611; (904) 392-6766

Technical Program Chairman: James F. Tull, Dept. of Geology, Florida State University, Tallahassee, FL 32306; (904) 644-1488

For other information: Sue Beggs, Meetings Manager, GSA, P.O. Box 9140, Boulder, CO 80301; (303) 447-2020

### Memorial Preprints

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

A. Lyndon Bell, by Alfred G. Fischer

Arthur Francis Buddington, by R. B. Hargraves

Arne Junger, by Arthur G. Sylvester

Louis Kehrer-Erni, translated by G. Suter-Kehrer

Russell Stafford Knappen, by Sherman Alexander Wengerd and Florence Mather Wengerd

Harry Stephen Ladd, by Frank C. Whitmore, Jr., and Joshua I. Tracey, Jr.

John Douglas Marr, by Joseph L. Adler

Frank McKim Swartz, by William Spackman

George Miller Wilson, by Jack A. Simon

Some of the studies that will comprise important elements of TALI are underway or will begin this year. Rice University and the University of Alaska are engaged in a cooperative study of the kinematics of deformation in the Brooks Range. The ADGGS and the USGS will continue geologic mapping and investigations in various areas along or near the transect route. To help launch TALI, the USGS will start this summer its Trans-Alaska Crustal Transect (TACT) project to investigate the structure and evolution of the crust, using seismic refraction and reflection, geologic, gravity, and magnetic techniques. The TACT project will begin along the southern onshore segment of the transect, between Valdez and the Alaska Range; several investigators from other institutions will be directly involved. Other institutions, including Cornell University (COCORP), Lamont-Doherty Geological Observatory, and the University of Utah are exploring participation in TALI in 1985 and later years. The goal is to complete the transect by the end of this decade.

Geologists and geophysicists interested in participating in TALI or the May workshop should contact Robert Page, U.S. Geological Survey, Mail Stop 77, 345 Middlefield Road, Menlo Park, CA 94025, (415) 323-8111; or John Davies, Alaska Division of Geological and Geophysical Surveys—(907) 474-6166, or David Stone, University of Alaska—(907) 474-7622, both at Geophysical Institute, University of Alaska, Fairbanks, AK 99701.

# GSA COMMITTEES SEEK CANDIDATES FOR APPOINTMENTS

The GSA Committee on Committees requests help from all members. As one of his duties, Vice-President Brian J. Skinner has appointed a group to look for talent to serve GSA as members of our committees and as our representatives to other organizations.

The Committee on Committees will meet in late July or early August and will present at least two nominations for each open position to Council at its November 7 meeting in Reno. During that meeting, individual councilors may add other names to the lists for consideration. The entire Council will then select appointees for all positions, thus completing the process of bringing new expertise into Society affairs.

The Committee on Committees for 1984 consists of the following people: *Bruce B. Hanshaw*, chairman, U.S. Geological Survey, 104 National Center, Reston VA 22092, phone (703) 860-7488; *J. James Eidel*, Coastal Mining Company, 333 So. Carson Meadow Drive, No. 44, Carson City, NV 89701, phone (702) 883-9651; *G. Ross Heath*, School of Oceanography, Oregon State University, Corvallis, OR 97331, phone (503) 754-4768; *Elaine Padovani*, Earth Sciences Division, National Science Foundation, 1800 G Street NW, Washington, DC 20550, phone (202) 357-

7911; *Raymond A. Price*, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8, Canada, phone (613) 995-4208.

This group is broadly based, both geographically and in disciplines, but its members cannot possibly know all the GSA members who are potential candidates for serving the Society. You can help them by volunteering yourself or by suggesting names of others you think should be considered for any of the openings.

In making recommendations, please give serious consideration to the special qualifications of the individual for a particular committee. To assist you in nominating GSA members for these various positions, the following brief summaries of what each committee does and what qualifications are desirable are provided. Please be sure that your candidates are Members or Fellows of the Society and that they meet fully the requested qualifications.

All nominations sent through headquarters will be forwarded to the committee members. **Deadline: June 15, 1984.** Listed below are the committees on which vacancies will occur. Appointments will be made by Council at its meeting in Reno.

## COMMITTEES AND QUALIFICATIONS

### Geology & Public Policy

Translates knowledge of the earth sciences into forms most useful for public discussion and decision making.

Committee members should have an awareness of public policy and decisions involving the science of geology. They should also be able to develop, disseminate, and translate information from the geologic sciences into useful forms for the general public and for the Society membership; they should be familiar with appropriate techniques for the dissemination of information.

### Penrose Medal

Selects candidates for the Penrose Medal.

Committee members should be familiar with outstanding achievements in the geological community that are worthy of consideration for the honor. Emphasis is placed on "eminent research in pure geology which marks a major advance in the science of geology."

### Day Medal

Selects candidates for the Arthur L. Day medal.

Committee members should have knowledge of those who have made "distinct contributions to geologic knowledge through the application of physics and chemistry to the solution of geologic problems."

### Honorary Fellows

Selects candidates for Honorary Fellows, usually non-North Americans.

Committee members should have knowledge of geologists throughout the world who have distinguished themselves through their contributions to the science.

### Membership

Screens Member and Fellow applications; evaluates membership benefits and makes recommendations to the Council about them.

Committee members must be GSA Fellows and must be

able to attend one meeting a year. Previous experience in recruitment programs and in the evaluation of professional qualifications is desired.

### Nominations

Recommends to the Council nominees for the positions of GSA officers and councilors.

Committee members should be familiar with a broad range of well-known and highly respected geological scientists.

### Research Grants

Evaluates research grant applications and selects grant recipients.

Committee members should have experience in directing research projects and in evaluating research grant applications.

### Treatise on Invertebrate Paleontology

Advises the *Treatise* editor in all phases of *Treatise* policy including planning of new volumes as well as revisions; also gives advice on special editorial matters such as acceptance or rejection of contributed manuscripts.

Committee members should be familiar with and have a broad understanding of paleontology.

### Joint Technical Program Committee, GSA Representatives-at-Large

Supervises the review of abstracts for papers to be presented at the annual meeting. Representatives-at-large should be specialists in either sedimentology, stratigraphy, or marine geology. These subdisciplines are not represented by any of the associated societies or GSA divisions.

### GSA Representative to the North American Commission on Stratigraphic Nomenclature

Must be familiar with and have expertise in stratigraphic nomenclature.

**NOMINATIONS FOR GSA COMMITTEES FOR 1985**

Geology & Public Policy  
(3 vacancies)

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Penrose Medal  
(2 vacancies)

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Day Medal  
(3 vacancies)

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Honorary Fellows  
(2 vacancies)

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Membership  
(2 vacancies;  
must be a GSA Fellow)

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Nominations  
(4 vacancies)

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Research Grants  
(2 vacancies)

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*Treatise on Invertebrate  
Paleontology* (1 vacancy;  
must be a paleontologist)

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Joint Technical Program  
Representatives-at-Large  
(2 vacancies; sedimen-  
tology, stratigraphy,  
marine geology)

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GSA Representative for 1985  
North American Commission  
on Stratigraphic Nomenclature  
(1 vacancy)

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*Reminder:* Please include statements of nominees' qualifications for assignments.

# GSA Sections and Divisions, 1984

## SECTIONS

GSA has six regional North American sections, generally including GSA members who live within the geographical limits of each section. (Members who live in one section but have a professional interest in another section can become members of the section of interest.) Each section holds annual technical and business meetings. The number of voting members shown for each section is as of December 31, 1983.

### **Cordilleran Section**

Geographic area: Alaska, Arizona south of lat 35°N, California, Hawaii, Nevada, Oregon, Washington, British Columbia, Yukon, Northwest Territories

Voting members: 2,827

Officers: chairman and vice-chairman to be elected at section annual meeting, May 30-June 1, 1984; Martin L. Stout, secretary; M. Clark Blake, past-chairman

### **Rocky Mountain Section**

Geographic area: Arizona north of lat 35°N, Colorado, Idaho, Montana, New Mexico, North Dakota, South Dakota, Utah, Wyoming, Alberta, Saskatchewan

Voting members: 2,048

Officers: Claude Spinosa, chairman; Monte D. Wilson, vice-chairman; secretary to be elected at section annual meeting, May 11-12, 1984; Jack A. Campbell, past-chairman; Douglas C. Brew, past vice-chairman

### **North-Central Section**

Geographic area: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, Wisconsin, Manitoba, Ontario west of 89th meridian

Voting members: 944

Officers: Jonathan H. Berg, chairman; Clarence J. Casella, vice-chairman; Kenneth G. Brill, Jr., secretary; Stanley M. Totten, past-chairman; William I. Ausich, past vice-chairman

### **South-Central Section**

Geographic area: Arkansas, Kansas, Oklahoma, Texas

Voting members: 1,465

Officers: Richard M. Mitterer, chairman; Robert C. Morris, vice-chairman; Page C. Twiss, secretary-treasurer; Melvin C. Schroeder, past-chairman

### **Northeastern Section**

Geographic area: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island, Quebec, Ontario east of 89th meridian

Voting members: 1,818

Officers: Rolfe S. Stanley, chairman; John B. Lyons, vice-chairman; Arthur A. Socolow, secretary; Maria Luisa B. Crawford, past-chairman

### **Southeastern Section**

Geographic area: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia

Voting members: 1,336

Officers: Donald T. Secor, Jr., chairman; Kenneth R. Walker, vice-chairman; Stephen H. Stow, secretary-treasurer; Paul C. Ragland, past-chairman; Donald C. Haney, past vice-chairman

## DIVISIONS

GSA's nine specialty divisions provide a focus for members interested in a particular discipline. The divisions hold annual business meetings in conjunction with the Society's annual meeting, and each division publishes a newsletter periodically. Division membership totals are as of December 31, 1983.

### **Archaeological Geology Division**

Members: 409

Officers: Harold W. Borns, Jr., chairman; David M. Hopkins, first vice-chairman; Charles J. Vitaliano, second vice-chairman; Vance T. Holliday, secretary-treasurer; Claude C. Albritton, Jr., past-chairman

### **Coal Geology Division**

Members: 623

Officers: Donald D. Carr, chairman; Edwin R. Landis, first vice-chairman; C. Blaine Cecil, second vice-chairman; Gilbert E. Smith, secretary; John C. Crelling, past-chairman

### **Engineering Geology Division**

Members: 1,048

Officers: Frank W. Wilson, chairman; Robert L. Schuster, chairman-elect; David M. Cruden, secretary; Erhard M. Winkler, past-chairman

### **Geophysics Division**

Members: 671

Officers: Peter Dehlinger, chairman; Nikolas I. Christensen, first vice-chairman; William E. Bonini, second vice-chairman; Mary Lou Zoback, secretary-treasurer; William J. Hinze, past-chairman

### **History of Geology Division**

Members: 369

Officers: Hubert C. Skinner, chairman; Joseph T. Gregory, first vice-chairman; J. Thomas Dutro, Jr., second vice-chairman; Clifford M. Nelson, Jr., secretary-treasurer; Ursula B. Marvin, past-chairman

### **Hydrogeology Division**

Members: 1,001

Officers: George H. Davis, chairman; Grover H. Emrich, first vice-chairman; William Back, second vice-chairman; Phyllis M. Garman, secretary-treasurer; David A. Stephenson, past-chairman

### **Planetary Geology Division**

Members: 310

Officers: Robin Brett, chairman; Donald U. Wise, first vice-chairman; Victor R. Baker, second vice-chairman; Raymond E. Arvidson, secretary-treasurer; Harold Masursky, past-chairman

### **Quaternary Geology & Geomorphology Division**

Members: 1,189

Officers: Donald J. Easterbrook, chairman; Donald F. Eschman, first vice-chairman; Gail M. Ashley, second vice-chairman; Richard F. Madole, secretary; John T. Andrews, past-chairman

### **Structural Geology & Tectonics Division**

Members: 1,865

Officers: Campbell Craddock, chairman; Robert S. Yeats, first vice-chairman; Winthrop D. Means, second vice-chairman; James A. Helwig, secretary-treasurer; David E. Dunn, past-chairman

**NOVEMBER 5-8, 1984**

**MGM GRAND • RENO, NEVADA**

Reno is at the foot of the Sierra Nevada, on the western edge of the Great Basin. Geologically the area is characterized by well-exposed sections of Cretaceous plutonic rocks, thick middle to upper Tertiary volcanic and sedimentary sequences, and Quaternary glacial, fluvial, and lacustrine deposits. The Sierra Nevada frontal fault zone, the strike-slip Walker Lane, and numerous basin-range faults are later Cenozoic structural-tectonic elements in the area. Rocks are locally hydrothermally altered and contain base- and precious-metal mineralization. Other major geologic features include deposits of fluvial Lake Lahontan, geothermal and archaeological sites, earthquake and landslide hazard areas, and the Lake Tahoe basin.

# THE GEOLOGICAL SOCIETY OF AMERICA



**97TH ANNUAL  
MEETING & EXPOSITION**

## PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS

Technical sessions for the 1984 GSA Annual Meeting consist of both volunteered papers and invited symposia. Chairman of the Joint Technical Program Committee is David B. Slemmons, Dept. of Geology, Mackay School of Mines, Reno, NV 89557. Co-

chairman is John W. Bell, Nevada Bureau of Mines & Geology, Mackay School of Mines, Reno, NV 89557.

**For any information related to abstracts, call Miriam Hansen, GSA Abstracts Coordinator, at (303) 447-8850.**

**VOLUNTEERED PAPERS.** Abstracts for the technical sessions (both oral and poster presentations) *must be submitted on 1984 abstract forms*, available from GSA headquarters (P.O. Box 9140, Boulder, CO 80301) and from the geology departments of most colleges and universities. The abstract form will be used as camera-ready copy for publication of *Abstracts with Programs*. Senior authors will be charged a \$15 fee if retyping is necessary, and there will be no opportunity for authors to review or revise typed abstracts after they are submitted. *Note:* No more than one abstract from any person as sole or senior author will be accepted for publication, and due to scheduling difficulties, no author may present more than one volunteered paper. These restrictions do not apply to symposia.

### DEADLINE FOR RECEIPT OF VOLUNTEERED ABSTRACTS AT GSA: FRIDAY, JUNE 8, 1984

Normal length of presentations is 15 minutes, *including* time for discussion. Projection equipment consists of a single 35 mm (2" x 2") projector and a single screen. Dual screens will not be available. Overhead projectors can be provided on request. Each poster-session speaker will be provided with three tackboards approximately 4' wide and 8' high. The boards are hung vertically in an 8' x 8', three-sided booth. Poster speakers are scheduled in four-hour intervals.

### INVITED SYMPOSIA

Communicate with the symposium convener about symposia abstracts or participation. **Symposia abstracts are to be sent directly to the convener—not to GSA.** The schedule of symposia and other programming will appear in the August issue of *News & Information*.

- 1. Time and Circumstances of the Peopling of South America.** Archaeological Geology Division; David M. Hopkins.
- 2. Characterization of Western Coals.** John C. Crelling.
- 3. Debris Flows/Avalanches: Process, Sedimentology, and Hazard Mitigation** (full day). Engineering Geology Division and Quaternary Geology and Geomorphology Division (combined symposium); Gerald F. Wiczorek and John E. Costa.
- 4. Extensional Tectonics: Part 1, Geophysical Studies** (full day). Geophysics Division; Bob Smith and George Thompson. **Extensional Tectonics: Part 2, Geological Studies.** Structural Geology and Tectonics Division (combined symposia); Greg Davis and George Davis.
- 5. Early History in the Western United States.** History of Geology Division; Hubert C. Skinner.
- 6. Arid-Zone Isotope Hydrology.** Hydrogeology Division; Alan H. Welch.
- 7. First Billion Years: Earth and Nearby Planets.** Planetary Geology Division; Donald U. Wise and Robin Brett.
- 8. Production and Flux of Biogenic Material in the Deep Sea.** Cushman Foundation; Robert Thunell and William Curry.

- 9. Earth-Surface Chemical Cycles in the Geologic Past** (full day). GSA Centennial Program and Geochemical Society (combined symposium); Robert A. Berner and C. Bryan Gregor.
- 10. Maps and the Geoscience Community.** Geoscience Information Society; Claren M. Kidd.
- 11. Diffusion in Mineral, Melt, and Glass Systems.** Mineralogical Society of America; Maryellen Cameron.
- 12. Recent Advances in Geophysics: Implications for Instruction.** National Association of Geology Teachers; William A. Bonini and Jack E. Oliver.
- 13. Paleobiologic Aspects of the Origin and Precambrian Evolution of Living Systems.** Paleontological Society; J. William Schopf.
- 14. Bulk-Minable Precious Metal Deposits in Cordilleran and Island-Arc Environments.** Society of Economic Geologists; H. F. Bonham, Jr., and J. V. Tingley.
- 15. Quaternary Lacustrine Sediments of the Western United States—Dating and Environmental Analysis.** Kenneth L. Verosub and Jonathan O. Davis.
- 16. Groundwater Geomorphology.** Charles G. Higgins and Donald R. Coates.
- 17. Use and Abuse of Statistical Methods in the Earth Sciences.** William B. Size, C. John Mann, and Daniel F. Merriam.
- 18. COCORP and Reflection Seismological Information on the Basin and Range Region.** Jack Oliver.
- 19. Gold Deposits in Archean Environments.** H. F. Bonham, Jr., and J. V. Tingley.
- 20. Nevada Test Site Geology, Geophysics, and Hydrology.** John Hess and H. L. McKague.
- 21. Lake Tahoe.** Robert H. Osborne.
- 22. Phanerozoic Evolution of the Continent-Ocean Transition in the Western U.S. and British Columbia.** Bob Speed and Jason B. Saleeby.
- 23. Emplacement of Silicic Domes.** Jonathan Fink.
- 24. Geochemical Reconstruction of Depositional and Diagenetic Environments.** George E. Claypool.
- 25. Paleoenvironmental and Tectonic Controls in Coal-Forming Basins of the United States.** Coal Geology Division; Paul C. Lyons and Chuck Rice.

### SHORT COURSES

**Paleomagnetism as a Tool for Tectonic and Structural Analysis.** Sponsored by the GSA Structural Geology and Tectonics Division. For information: Rob Van der Voo, Dept. of Geological Sciences, University of Michigan, Ann Arbor, MI 48109; (313) 764-1435.

**Micas.** Sponsored by the Mineralogical Society of America. Saturday and Sunday, November 3 and 4, Hilton Hotel in downtown Reno. Evening reception on Friday, November 2. For information or registration: S. W. Bailey, Dept. of Geology and Geophysics, 315 Weeks Hall, University of Wisconsin, Madison WI 53706; (608) 262-1806.

## ASSOCIATED SOCIETIES MEETING WITH GSA

Cushman Foundation

Geochemical Society

Geoscience Information Society

Mineralogical Society

National Association of Geology Teachers

Paleontological Society

Society of Economic Geologists



**Remote Sensing.** Sponsored by the Geological Society of America. Sunday, November 4, 9 a.m.–5 p.m., MGM Grand Hotel. For information: F. F. Sabins, Chevron Oil Field Research Co., P.O. Box 446, La Habra, CA 90631; (213) 695-7370.

**Microcomputers and the Mining Geologist.** Sponsored by the Geological Society of America. Saturday and Sunday, November 3 and 4, 9 a.m. to 5 p.m., MGM Grand Hotel. Information: Michael Loy, Skelly and Loy Engineers-Consultants, Inc., 2601 N. Front St., Harrisburg, PA 17110; (717) 232-0593.

**Interpretation of Seismic Reflection Records for Nonspecialists.** Sponsored by the GSA Geophysics Division. Sunday, November 4, 9 a.m.–5 p.m., MGM Grand Hotel. [This course is particularly for academics (professors and students) and government employees.] Information: Jean Latulippe, Meetings Dept., GSA, P.O. Box 9140, Boulder, CO 80301; (313)447-2020.

**Mammals: Overview of the Evolution of Mammals Documented by Their Fossil Record.** Sponsored by the Paleontological Society. Sunday, November 4, 8 a.m.–5 p.m. For information: John Pojeta, Jr., USGS, Branch of Paleontology & Stratigraphy, E-501, U.S. Museum of Natural History, Washington, DC 20560; (202) 343-5097.

**Geological Uses of Diatoms.** Sponsored by the Cushman Foundation. Friday, November 9, 8 a.m.–5 p.m. For information: L. H. Burckle, Lamont-Doherty Geological Observatory of Columbia University, Palisades, NY 10964; (914) 359-2900, ext. 406.

## FIELD TRIPS

Reno lies on the western edge of the Basin and Range province and adjacent to the Sierra Nevada. Within a day's drive are the Great Valley and Coastal Range provinces of California, the southern tip of the Cascades, and the southern part of the Columbia Plateau Basalts. This year's field-trip program draws from many of these provinces, and one trip originates in the Rocky Mountain province.

Nevada history is deeply entwined with the mineral industry, and today Nevada is the top American producer of gold, mercury, barite, magnesite, and turquoise, to name a few. The majority of the geologic concepts prevalent today in Nevada have evolved since World War II; from the research point of view, the Basin and Range province is still in a late youthful stage. While no square foot has evaded the geologist's boot, much of the field work performed to date can be considered only as reconnaissance geology. The great variety of geology in the Great Basin is the result of its large size (110,000 mi<sup>2</sup> in Nevada alone), its range of rocks (Precambrian to Quaternary), and its climatological conditions (Sonoran desert to alpine heights). Superior rock exposures and complex geologic relationships and history make the Great Basin a fascinating geologic study.

The 1984 Field Trip Committee Chairman is Joseph Lintz, Jr., Mackay School of Mines, Reno, Nevada 89557. For further information, call Kathy Ohmie, Field Trip Coordinator, GSA headquarters, (303) 447-2020.

All premeeting trips end in Reno on the afternoon or evening of Sunday, November 4. Postmeeting trips begin in Reno. Costs will be announced later.

## PREMEETING TRIPS

- 1. The Mississippian-Pennsylvanian Boundary in the Eastern Great Basin.** Gary Webster, Washington State University, Pullman; Mackenzie Gordon, USGS, Reston; Ralph L. Langenheim, Jr., University of Illinois, Urbana. Three days, November 2, 3, 4.
- 2. Late Cambrian Faunal Crises: The Basis for Biomes.** A. R. Palmer, GSA, Boulder; M. E. Taylor, USGS, Denver. Four days, November 1, 2, 3, 4.

- 3. Coal Deposits, Stratigraphy, and the Cretaceous-Tertiary Boundary, Southern Raton Basin, New Mexico and Colorado.** Charles L. Pillmore, USGS, Denver. Three days, November 2, 3, 4.
- 4. Truckee-Carson River Hydrogeology.** Patrick A. Glancy, USGS, Carson City; Roger Jacobson, Desert Research Institute, Reno. Two days, November 3, 4.
- 5. Tectonic Development of the Northern Sierra Nevada: An Accreted Late Paleozoic Island Arc and Its Basement.** Richard A. Schweickert, Mackay School of Mines, Reno; Gary Girty, University of Kansas, Lawrence; Richard Hanson, University of Zambia; David Harwood, USGS, Menlo Park. Three days, November 2, 3, 4.
- 6. Sonoma Orogenic Belt of West-Central Nevada.** Robert C. Speed, Northwestern University, Evanston. Two days, November 2 (p.m.), 3, 4.
- 7. Comparison of Paleozoic Tectonostratigraphic Assemblages between the Mojave Desert and West-Central Nevada.** Michael D. Carr, USGS, Denver; John Oldow, Rice University, Houston; Paul Stone, USGS, Menlo Park. Three days plus previous evening, November 1 (p.m.), 2, 3, 4.
- 8. Tertiary Tectonics of West-Central Nevada: Yerington to Gabbs Valley.** Richard F. Hardyman and E. B. Ekren, USGS, Denver; John Profett, Profett Exploration, Anchorage. Three days, November 2, 3, 4.
- 9. Tectonic Evolution of the Ruby Mountains/East Humboldt Range, Nevada.** Arthur W. Snoke, University of Wyoming, Laramie; Keith Howard, USGS, Menlo Park. Three days plus previous evening, November 1 (p.m.), 2, 3, 4.
- 10. Geology of the Nevada Test Site.** Holly D. Ander and Frank M. Byers, Los Alamos National Laboratory, Los Alamos; Paul P. Orkild, USGS, Denver. Two days, November 3, 4.
- 11. Mono Crater, Long Valley Caldera: Seismicity, Volcanism, and Engineering.** Ed Harp, USGS, Menlo Park; Alan Ryall, Mackay School of Mines, Reno; Spencer H. Wood, Boise State University, Boise. Three days, November 2, 3, 4.
- 12. Engineering Geology of Slide Mountain Rock Slide and Ophir Creek Debris Flow.** Robert J. Watters, Mackay School of Mines, Reno. One day, November 4.
- 13. Archaeological Geology of Hidden and Lovelock Caves, with an Overview of Quaternary Geology in the Lahontan Basin.** Jonathan O. Davis, Desert Research Institute, Reno; Roger B. Morrison, Golden. Two days, November 3, 4.

## CONCURRENT HALF-DAY TRIPS

**Magma Mixing in Some Sierran Plutonic Rocks.** Malcolm J. Hibbard, Mackay School of Mines, Reno. Trips will depart November 6, 8 a.m., and November 7, 1 p.m.

## POSTMEETING TRIPS

- 14. Quaternary Stratigraphy of the Eastern Mojave Desert.** John C. Dohrenwend, USGS, Menlo Park; Stephen G. Wells and Leslie D. McFadden, University of New Mexico, Albuquerque; Roger S.U. Smith, Austin. Three days, November 9, 10, 11.
- 15. Mineral Deposits of Central Nevada.** Odin Christensen, Newmont Exploration, Reno; Daniel Shawe, USGS, Denver; Bradford Mills, Round Mountain; Peter Chapman, Carson City. Four days, November 9, 10, 11, 12.
- 16. Mesozoic-Cenozoic Convergent Margin of Northern California.** Raymond Ingersoll, UCLA, Los Angeles; Stephen Graham, Stanford University, Palo Alto; Richard Schweickert, Mackay School of Mines, Reno; Darrel Cowan, University of Washington, Seattle. Three days, November 9, 10, 11.
- 17. The Pre-Cordilleran Active Overthrust Belt, San Juan Province, Argentina.** Robert A. Whitney, Mackay School of Mines, Reno; Hugo E. Bastias and Alejandro Vaca, University of San Juan, Argentina. Nine days, November 9–18.



## PREREGISTRATION, FIELD TRIPS, HOUSING

Forms available in August 1984 *News & Information*

**ABSTRACTS DEADLINE: JUNE 8, 1984**

**PREREGISTRATION DEADLINE: OCTOBER 5, 1984**

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Geological Society of America, P.O. Box 9140, Boulder, CO 80301 (303) 447-2020

18. **Neotectonics of Western Nevada.** David B. Slemmons, Mackay School of Mines, Reno; John W. Bell, Nevada Bureau of Mines and Geology, Reno; Robert Wallace, USGS, Menlo Park. Two days, November 9, 10.
19. **Tertiary Extension Tectonics in the Sevier Belt of Southern Nevada.** Brian Wernicke, Harvard University, Cambridge; Peter L. Guth, USMA, West Point. Three days plus previous evening, November 8 (p.m.), 9, 10, 11.
20. **Alteration and Mineralization Detection by Enhanced Remote Sensing Imagery for Mineral Exploration in Southwest Nevada and Adjacent California.** James V. Taranik, Mackay School of Mines, Reno; Floyd F. Sabins, Chevron Oil Field Research, La Habra. Three days, November 9, 10, 11.
21. **Hydrogeology of the Nevada Test Site.** John W. Hess, Desert Research Institute, Las Vegas. Two days plus previous evening flight, November 8 (p.m.), 9, 10.
22. **High-Temperature Geothermal Resources of Western Nevada.** Dennis T. Trexler, University of Nevada, Las Vegas (Reno office). One day, November 9.

### THINK RENO!

Mackay School of Mines is the host institution for the GSA meeting. Lawrence T. Larson, chairman of the Department of Geology is the General Chairman for the 1984 Annual Meeting. Mackay is located on the University of Nevada—Reno campus, a few minutes from the MGM Grand Hotel.

The most spectacular of the related sightseeing areas is Lake Tahoe, so clear you can see 100 feet below the surface. Driving distance from Reno to North Tahoe is 38 miles; from Reno to South Tahoe it is 59 miles. Within easy range are Carson City (30 miles), Virginia City (23 miles), and Squaw Valley (45 miles).

### ACCOMMODATIONS

GSA has blocked rooms at four hotels: the MGM Grand Hotel (headquarters) with 1,600 rooms reserved; Harrah's Hotel and Casino, location for technical sessions and social functions of the Paleontological Society; the Eldorado Hotel and Casino, location for several luncheon functions; and the Peppermill Inn and Casino, recommended for student housing. Rates range from \$26 to \$54.

### TRANSPORTATION

Thanks to a \$50 million expansion, Reno's Cannon International Airport is now both advanced and efficient. It is easy to travel through, with short distances, clear signage, and an efficient baggage-claim area. The airport is served by Air Cal, American, Eastern, Frontier, Republic, United, USAir, Western, Wien Air Alaska, and others.

GSA will provide a free shuttle for transportation to and from the MGM Grand to all the hotels in the GSA block: Harrah's, the Eldorado, and the Peppermill Inn.

### WHAT'S HAPPENING

**Exhibits.** The Geoscience Exhibit opens Monday, November 5. Exhibitors will display computer hardware and software, measurement equipment, maps, X-ray diffraction and other instruments, cameras and other photographic equipment, spectrometers, microscopes, microanalysis equipment, and publications.

**Welcoming Party.** Arrive in time for the opening-night reception at the MGM Grand Hotel, 6–9 p.m. You will be able to register for the meeting during the reception.

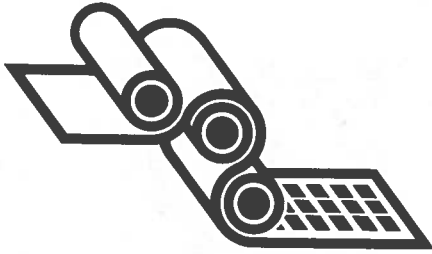
**Special Event.** Wednesday evening, November 7, will be GSA night at the MGM Grand's Ziegfeld Theater. "Hello Hollywood, Hello!" is the two-hour musical extravaganza during which a jet takes off carrying a cargo of dancers aboard both wings. This show is a tribute to Hollywood's golden era. It features startling live special effects and the sequined pageantry of more than 100 dancers. The show includes a roast beef dinner and will cost \$30.

**Guest Program.** The Hospitality Room will be open daily. Guest tours are planned to exquisite Lake Tahoe, to the historic mining town of Virginia City, and to the antique hunter's area of Carson City. The Carson City tour includes a trip to Nevada's Basque country and a specially arranged visit to the governor's mansion. A gaming tour will provide a chance to learn about the casino games during a visit behind the scenes of a major casino. A special session on Nevada history and geology is also part of the program.

**Alumni Night.** The traditional alumni night is Monday, November 5. If your institution would like to hold a cocktail reception—or any other function—during the meeting, contact the GSA Meetings Department by May 1, 1984.

**Employment Service.** GSA will conduct its employment interview service from Sunday, November 4 through Wednesday, November 7. Areas will be provided for employers to interview applicants who are registered with the service. Staff will assist in scheduling these interviews. Computer listings of the applicant file and résumés are available to employers for screening. See the March 1984 issue of *News & Information* for forms and further information, or call the GSA Employment Service Coordinator at (303) 447-2020.

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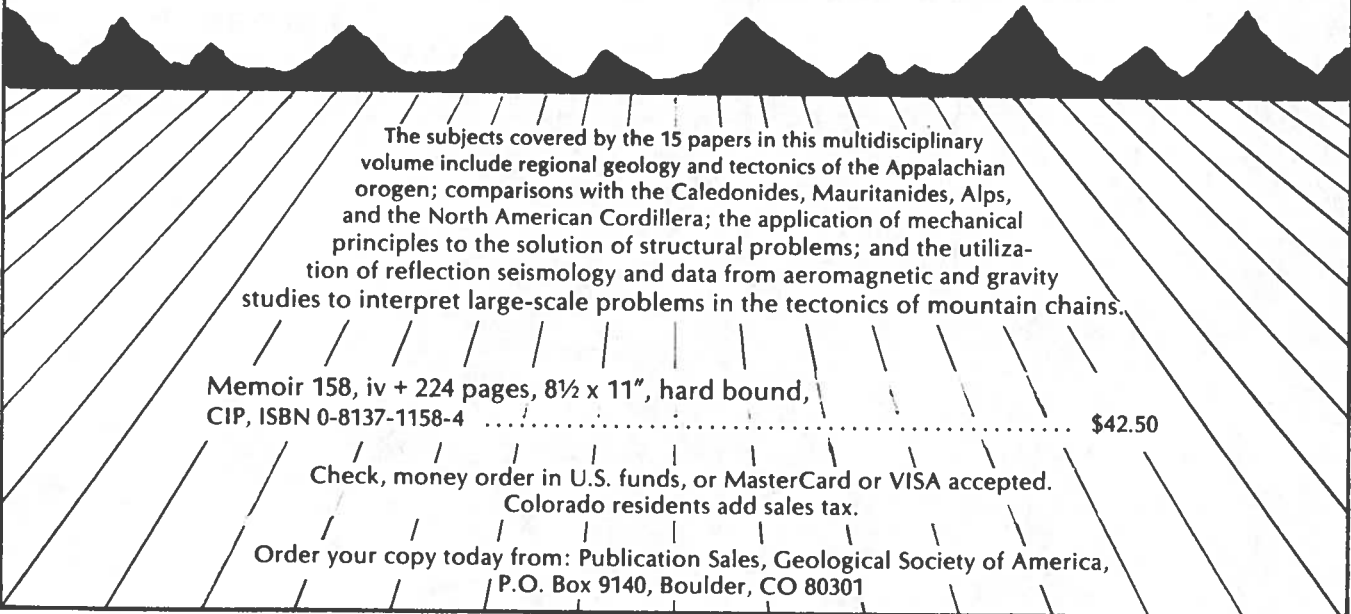
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# MEETINGS

1984

**Mid America Paleontology Society National Fossil Exposition VI**, April 13-15, 1984, Macomb, Illinois. Information: Doug Johnson, P.O. Box 184, Donnellson, IA 52625; (319) 835-5957.

**Canadian Institute of Mining and Metallurgy 86th Annual General Meeting**, April 15-19, 1984, Ottawa, Ontario. Information: CIM Headquarters, 400-1130 Sherbrooke St. W., Montreal, Quebec H3A 2M8, Canada; (514) 842-3461; Telex 055-62344.

**Texas A&M Geodynamics Research Program, Sixth Annual Symposium**, April 26-27, 1984, College Station, Texas. Information: Texas A&M Geodynamics Office, College Station, TX 77843-3114; (409) 845-8477.

**Toxins Threatening to Health and Water**, May 3, 1984, Brooklyn, New York. Information: E. Lynn Savage, Dept. of Geology, Brooklyn College, CUNY, Brooklyn, NY 11210; (212) 780-5620 or 780-5416.

**International Conference on Case Histories in Geotechnical Engineering**, May 6-11, 1984, St. Louis, Missouri. Information: Shamsheer Prakash, University of Missouri—Rolla, Rolla, MO 65401; (314) 341-4461.

**International Energy Conference**, May 14-19, 1984, Regina, Saskatchewan. Information: Chairman, Energex '84, University of Regina, Regina, Saskatchewan S4S 0A2, Canada.

**International Groundwater Symposium on Groundwater Resources Utilization and Contaminant Hydrogeology**, May

21-23, 1984, Montreal, Canada. Information: A. Kohut, Ministry of the Environment, Victoria, British Columbia V8V 1X5, Canada.

**25th U.S. Symposium on Rock Mechanics**, June 25-27, 1984, Evanston, Illinois. Information: Charles H. Dowding, Dept. of Civil Engineering, Northwestern University, Evanston, IL 60201; (312) 492-7270.

**International Symposium on Deep Structure of the Continental Crust: Results from Reflection Seismology**, June 26-28, 1984, Ithaca, New York. Information: Muawia Barazangi, Dept. of Geological Sciences, Cornell University, Ithaca, NY 14853; (607) 256-6411; Telex 937478.

**Canning Basin Symposium**, June 27-29, 1984, Perth, Western Australia. Information: Phil Connard, Shell Development (Australia) Pty. Ltd., G.P.O., Box W2050, Perth, W. A. 6001, Australia.

**Western Research Institute and U.S. Department of Energy Tar Sand Symposium**, June 27-29, 1984, Vail, Colorado. Information: L. C. Marchant, Western Research Institute, P.O. Box 3395, University Station, Laramie, WY 82071.

**Fossil Fuels of Europe Conference**, July 15-18, 1984, Geneva, Switzerland. Information: AAPG, P.O. Box 979, Tulsa, OK 74101; (918) 584-2555.

**8th World Conference on Earthquake Engineering**, July 21-28, 1984, San Francisco, California. Information: EERI-8WCCE, 2620 Telegraph Ave., Berkeley, CA 94704.

## MEMOIR 160

### Early Proterozoic Geology of the Great Lakes Region

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# MEETINGS

**Current Issues in Systematics**, international meeting, July 1984, London, England. Information: C. J. Humphries, Dept. of Botany, British Museum, Cromwell Rd., London SW7 5BD, England; 01-589 6323, ext. 405.

**27th International Geological Congress**, August 4-14, 1984, Moscow, USSR. Information: Secretary General, 27th International Geological Congress, Institute of the Lithosphere, USSR Academy of Sciences, 22, Staromonetny, Moscow, 109180, USSR; 231-48-36; Telex: LITOS 411484.

**International Cartographic Association 12th Conference and 7th General Assembly**, August 6-10, 1984, Perth, Australia. Information: ICA Conference Director, P.O. Box 6208, Hay St., East Perth, Western Australia 6001; Telex AA95791 Minewa.

**American Quaternary Association Eighth Biennial Meeting**, August 13-15, 1984, Boulder, Colorado. Information: AMQUA, Office of Conference Services, Campus Box 153, University of Colorado, Boulder, CO 80310; (303) 492-5151.

**NATO Advanced Study Institute Field Excursion in the British Caledonides**, August 19-September 2, 1984. Information: A. L. Harris, Jane Herdman Laboratories of Geology, University of Liverpool, Brownlow St., P.O. Box 147, Liverpool L69 3BX, England.

**Sixth International Palynological Conference**, August 26-September 1, 1984, Calgary, Alberta, Canada. Information: Lois Kokoski, Conference Office, Faculty of Continuing Education,

University of Calgary, Education Tower Room 102, Calgary, Alberta T2N 1N4, Canada; (403) 284-5051.

**Symposium on Evolution of the Caledonide-Appalachian Orogen**, September 3-8, 1984, Glasgow, Scotland. Information: Matt Bates, A. T. Mays, 12 Nineyard St., Scottcoats, Scotland KA21 5HP, U.K.

**Oceans 84: Industry, Government, and Education—Designs for the Future, Conference and Exposition**, September 10-12, 1984, Washington, D.C. Information: Oceans 84, Marine Technology Society, 1730 M St. N.W., Suite 412, Washington, DC 20036; (202) 659-3251.

**International Gas Research Conference**, September 10-13, 1984, Washington, D.C. Information: L. Hirsch, 8600 West Bryn Mawr Ave., Chicago, IL 60631; (312) 399-8300; Telex 253812.

**Recent Advances in Petroleum Exploration and Development**, September 24-28, 1984, Beijing, China. Information: BHP Petroleum, G.P.O. Box 1911R, Melbourne, 3001, Australia.

**Tectonic Geomorphology**, 15th Annual Binghamton Geomorphology Symposium, September 28-29, 1984, Binghamton, New York. Information: Marie Morisawa, Dept. of Geological Sciences, SUNY, Binghamton, NY 13901; (607) 798-2615.

**Clay Minerals Society Annual Meeting**, September 30-October 3, 1984, Baton Rouge, Louisiana. Information: Ray E. Ferrell, Dept. of Geology, Louisiana State University, Baton Rouge, LA 70803; (504) 388-5306.

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# MEETINGS

**International Symposium on Recent Investigations in the Zone of Aeration**, October 1-5, 1984, Munich, West Germany. Information: P. Udluft, Inst. für Wasserchemie der TU München, Marchioninstr. 17, 8000 München 70, West Germany; telephone 089/7095 7086-98-80.

**American Institute of Professional Geologists Annual Meeting**, October 17-19, 1984, Orlando, Florida. Information: Bobby J. Timmons, Timmons Associates, P.O. Box 50606, Jacksonville Beach, FL 32250; (904) 246-4533.

**North Atlantic Palaeoceanography Conference**, November 6-7, 1984, London, England. Information: N. Shackleton, Dept. of Quaternary Research, Godwin Laboratory, Free School Lane, Cambridge CB2 3RS, England.

**International Conference on Ground-Water Technology**, November 12-17, 1984, Johannesburg, South Africa. Information: David M. Nielsen, National Water Well Association, 500 West Wilson Bridge Rd., Worthington, OH 43085; (614) 846-9355.

**Ophiolites through Time**, November 13-15, 1984, Nancy, France. Information: Jacqueline Desmons, Université de Nancy I, Faculté des Sciences, Laboratoire de Petrologie, B.P. n° 239, F-54506 Vandoeuvre-les-Nancy Cedex, France. (Abstracts deadline is September 1, 1984.)

## 1985

**International Association of Hydrogeologists 17th International Congress, Hydrogeology of Rocks of Low Permeability**, January 7-12, 1985, Tucson, Arizona. Information: Eugene S. Simpson, Hydrology & Water Resources, University of Arizona, Tucson, AZ 85721.

**Salts and Brines '85**, February 24-28, 1985, New York. Information: William C. Larson, Twin Cities Research Center, Bureau of Mines, 5629 Minnehaha Ave. S., Minneapolis, MN 55417; (612) 725-3464. (Abstracts due April 30, 1984.)

**American Institute of Mining, Metallurgical and Petroleum Engineers Annual Meeting**, February 24-28, 1984, New York. Information: Joan M. Andelman, AIME, 345 E. 47th St., New York, NY 10017; (212) 705-7677.

**Paul F. Kerr Memorial Symposium**, February 28, 1985, New York. Information: Otto C. Kopp, Dept. of Geological Sciences, University of Tennessee, Knoxville, TN 37996-1410. (Abstracts due April 15, 1984.)

**26th U.S. Symposium on Rock Mechanics**, June 26-28, 1985, Rapid City, South Dakota. Information: Eileen Ashworth, Dept. of Mining Engineering, South Dakota School of Mines and Technology, Rapid City, SD 57701-3995; (605) 394-2344.

**International Symposium on Karst Water Resources**, July 7-19, 1985, Ankara and Antalya, Turkey. Information: A. Ivan Johnson, Woodward-Clyde Consultants, 7600 East Orchard Rd., Harlequin Plaza North, Englewood, CO 80111.

**Sixth Gondwana Symposium**, August 19-23, 1985, Columbus, Ohio. Information: Sixth Gondwana Symposium, Institute of Polar Studies, Ohio State University, Columbus, OH 43210; (614) 422-5431.

**American Institute of Professional Geologists Annual Meeting**, September 17-21, 1985, St. Paul, Minnesota. Information: Robert E. Pendergast, Geotechnical Engineering Corp., 1925 Oakcrest Ave., Roseville, MN 55113; (612) 636-7744.

## GSA 1984

### Section Meetings

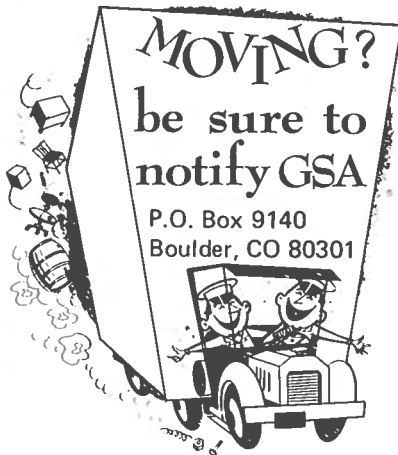
**North-Central and Southeastern Sections**, April 4-6, 1984, Lexington, Kentucky

**Rocky Mountain Section**, May 11-12, Durango, Colorado  
**Cordilleran Section**, May 30-June 1, Anchorage, Alaska

## Going to IGC in Moscow?



Geologists who need information on travel to Moscow for the International Geological Congress, August 4-14, 1984, can get it from the American Geological Institute, 4220 King St., Alexandria, VA 22302; (703) 379-2480 or (800) 336-4764.

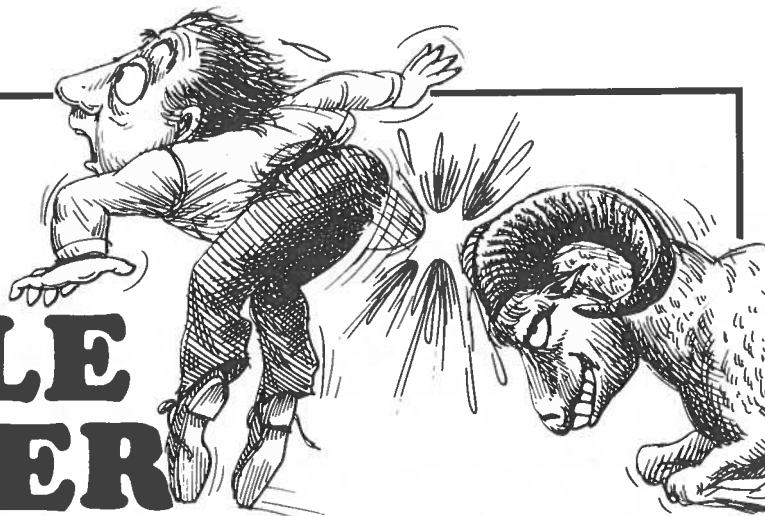


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# A GENTLE REMINDER



Deadline for receipt of abstracts at GSA headquarters for the Annual Meeting in Reno is June 8, 1984. Abstract forms are available from Abstracts Secretary, Geological Society of America, P.O. Box 9140, Boulder, CO 80301. Volunteered abstracts should be mailed to the same address in time to arrive on or before June 8.

## ABSTRACTS DEADLINE JUNE 8

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