



Hydrogeologist

NEWSLETTER OF THE HYDROGEOLOGY DIVISION OF THE GEOLOGICAL SOCIETY OF AMERICA, APRIL 1984

MESSAGE FROM THE CHAIRMAN

Dear Colleagues:

Continuing the precedent established in 1983, the Hydrogeology Division plans to publish two newsletters this year, this being the first. This is an effort to keep the membership better informed of Division activities and to encourage increased participation in the technical sessions, field trips, and the Business Meeting, which are the focus of the Division program. Please continue to call in or mail newsworthy items to the editors of the Newsletter or to the Secretary/Treasurer.

Plans for the annual meeting program have been firmed up under the outstanding leadership of Terry Katzer in collaboration with John Hess. These include a premeeting field trip of the Truckee-Carson River Basins on Saturday and Sunday, November 3-4, and a post-meeting field trip to the Nevada Test Site on Friday and Saturday, November 9-10. Symposia are scheduled on Isotope Hydrology in Arid Zones, convened by Alan Welch, and on the Nevada Test Site, jointly convened by the Desert Research Institute and Lawrence Livermore Laboratories. Frank Schwartz is soliciting volunteered papers for an informal symposium on the role of ground water in geologic processes. In addition, two and a quarter half-day sessions are scheduled for volunteered papers as well as at least one poster session. On the social side, in addition to the annual luncheon, the Division will hold a cocktail party in honor of Jane Maxey, the widow of G. Burke Maxey, one of the founding members of the Division.

Now is the time to start making plans to attend the Reno meeting and to work on your abstract in time for the June 8th deadline for receipt of abstracts at GSA headquarters. Note that abstracts must be submitted on a new form this year, which can be obtained by writing or phoning the Abstracts Coordinator at GSA headquarters in Boulder, Colorado.

Ad Hoc Committees planning to present reports at the annual business meeting are the Committee on Hydrogeologist Certification under the lead of O. Milton Hackett and the Committee on a Meritorious Service Award under the lead of Darryll Pederson. The former group is addressing the question of various efforts to establish hydrogeologist certification procedures and what position the Division should take on this issue. The latter group is preparing the criteria and specifications for a Divisional Award for meritorious service to the profession. If

you have strong views on either matter, be sure to attend the Business Meeting or to communicate directly with the chairmen so that your views will be considered.

The Hydrostratigraphic Unit Committee, under the co-chairmanship of Keros Cartwright and Paul Seaber, was extended for two years at the 1983 meeting. Thus a final report will not be presented until the 1985 meeting. However, the group continues to labor at the herculean task of developing a Code for Hydrostratigraphic Units for inclusion in the North American Stratigraphic Code.

All of those who were planning to attend the 1985 Annual Meeting in Boston should note that the 1985 Annual Meeting of the GSA will be held in Orlando, Florida, instead. This change was forced on the Society by a late decision by Boston authorities to remodel the convention center, which was to have been the site of the GSA meeting. The change in location necessitated changes in program chairman and field trip organizers. Mark Stewart, University of South Florida, has agreed to serve as program chairman, and Joel Kimrey, USGS Florida District, has accepted the responsibility for organizing the field trips.

Hydrogeology Division participation in the Decade of North American Geology program of the Society takes the form of preparation of a volume on Hydrogeology as part of the larger effort to produce a 25-volume synthesis of the geological, geochemical, and geophysical knowledge of the North American Plate and adjoining areas in celebration of the Society's Centennial in 1988. This effort, under the co-leadership of Paul Seaber and Bill Back, now involves some 80 authors and the list is still growing. The focus of the project is to prepare a text that elucidates the hydrogeologic controls, principles, and processes affecting the occurrence, movement, storage, and chemistry of ground water.

The Birdsall Lecture Series continues to be very well received, and the Division gets more requests for the lectures than can be fulfilled within the time available to the lecturer and the modest funds available from the Division. Frank Schwartz, the 1984 Birdsall Distinguished Lecturer, will make his by-then-well-honed presentation immediately preceding the Hydrogeology Division luncheon. You all come; these really are excellent lectures.


George H. Davis, Chairman

Hydrogeology Division

GEOLOGICAL SOCIETY OF AMERICA

97TH ANNUAL MEETING

NOVEMBER 5-8, 1984

MGM Grand Hotel

Reno, Nevada

Terry Katzer, 1984 Hydrogeology Division member of the Joint Technical Program Committee, is getting the 1984 program off to a flying start. The Hydrogeology Division Symposium will be: "Arid Zone Isotope Hydrology," Alan Welch, convenor. In addition to the one or two sessions of volunteered papers, John W. Hess and Larry McKague are arranging a symposium on the Nevada Test Site and Frank W. Schwartz is asking members to consider submitting papers on the role of ground water in geologic processes so that an "informal" symposium can be included in the program.

Two field trips have been organized. Pat Glancy, Jim Harrill, Marty Mifflin, and Roger Jacobsen have organized a 2-day premeeting excursion into the Truckee-Carson River basin. Great things await attendees, ranging from debris flows to tectonics to ground-water modeling to the reincarnation of Pleistocene lakes. Following the meeting, Jack Hess will lead a 2-day visit to the Nevada Test Site and the Amargosa Desert.

Finally, but not least, Terry has arranged for the return of the Hydrogeology Division cocktail party. Following in the tradition of our first cocktail party in Atlanta in 1980, at which we honored Joe Poland and Vic Stringfield, our guest of honor will be Jane Maxey.

HIGHLIGHTS OF THE 1983 ANNUAL MEETING IN INDIANAPOLIS

Noel C. Krothe, Program Chairman for Indianapolis, organized an excellent technical program. The Division gratefully acknowledges his efforts.

Richard R. Parizek, Distinguished Birdsall Lecturer for 1982-83, presented his talk, "The Hydrologic Significance of Fracture Traces and Lineaments," to Division members and guests prior to the luncheon.

Edwin P. Weeks, the 1983 O.E. Meinzer Award Recipient, was presented the sterling silver Meinzer Bowl by David Stephenson, Chairman. The award was for his paper, Field Determination of Vertical Permeability to Air in the Unsaturated Zone: U.S.G.S. Professional Paper 1051, 1978.

Certificates of acknowledgement were presented to the past Distinguished Birdsall Lecturers. They were: Jacob Bear, 1977-78 (not present); William Back, 1978-79; David Stephenson, 1979-80; Irwin Remson, 1980-81 (not present); Patrick Domenico, 1981-82; and Richard Parizek, 1982-83.

MINUTES — ANNUAL BUSINESS MEETING — INDIANAPOLIS, 1983

The minutes of annual business meeting were prepared by Phyllis M. Garman, Secretary-Treasurer. Attendance at the meeting was 29.

The 1983 Annual Business Meeting of the Hydrogeology Division was called to order by Chairman, David Stephenson, at 1340 hours, Tuesday, November 1, 1983, in the McKinley Room, Hyatt Regency Hotel, Indianapolis, Indiana.

Secretary-Treasurer, Phyllis Garman, first acknowledged the work of Claire Davidson and Paul Seaber in the preparation of a formal timetable for the Division officers to use as a guideline for GSA Council meetings and deadlines. It was most helpful.

Garman asked for approval of the Minutes of the 1982 Annual Business Meeting as published in the July issue of The Hydrogeologist. A motion was made for approval of the minutes. The motion was seconded; and the minutes were approved by unanimous vote.

The Treasurer's report followed. As of September 30, 1983, the Division had a balance of \$3,663.36 in the treasury from dues, and \$10,000.00 in the Birdsall Fund, which is restricted. The Division has 996 affiliates.

A moment of silence was observed for John Frye, Robert Karpinski, and Alfred Snelgrove, affiliates who passed away during the year.

The Secretary-Treasurer announced the results of election of officers. Two hundred ballots were cast. The 1984 Management Board consists of the following: George Davis, Chairman; Grover Emrich, First Vice-Chairman; William Back, Second Vice-Chairman; and David Stephenson, Past Chairman. Phyllis Garman will serve the second year of a two-year term as Secretary-Treasurer.

Dave Stephenson announced that George Davis, Chairman-elect, would have to appoint new Section Representatives for the North-Central, Southeast, and Cordilleran Sections.

Dave stated that during the year he had received calls from affiliates concerning a Meritorious Service Award for recognition of long-term service, which would be in addition to the Meinzer Award. After a call for discussion, Paul Seaber stated that he thought it would be a good idea, and noted that the Engineering Geology Division presents a Distinguished Practice Award. Dave indicated that the award must be a Division award and not from the Society. The Society By-Laws state that each Division may have only one award recognized by the Society with the Executive Director's signature, e.g., Meinzer. Additional awards could be recognized only by the Division, e.g., Birdsall. There were no objections from the floor; therefore, George Davis will appoint a committee to examine the issue and report to the group at the Reno meeting in 1984 with a solid recommendation for the name of the award, requirements to earn the award, and the committee makeup to select the award recipient.

Noel Krothe, 1983 Program Chairman, reported that the Hydrogeology Field Trip was cancelled. The length of time appeared to be the problem. The shorter the field trips, the better they are attended. Krothe recommended that future field trips be no more than two days and one night.

In addition, the number of abstracts submitted was low. He emphasized that each annual meeting is as important as another, no matter where it is located, and that people who have been around a long time and are well known should be encouraged to give papers.

Terry Katzer, Program Chairman for the Reno meeting, asked what could be done differently. Keros Cartwright added that for several years abstracts were solicited by letter in order to increase the number submitted. This was successful enough that one year they had to reject 50 percent. He recommended that procedure for future meetings.

Terry announced preliminary plans for the Reno meeting. In terms of symposia, one was submitted on "Movement of Hazardous Organic Waste in the Geohydrologic Environment," although it probably will not be done. A symposium on "Arid-zone Isotope Hydrology" will be done. For all other papers he will rely on mail requests for abstracts from all members of the Division. Two or three field trips for the Reno meeting have been organized. There is a choice of two pre-meeting trips to be led by Jack Hess and Roger Jacobson. One is a one- or two-day trip involving the Truckee Meadows-Lake Tahoe area, the other a two-day, one-night trip on the Hydrogeology of the Truckee Basin area. A post-meeting trip to the Nevada Test Site is also being planned.

Discussions of symposia and solicitation of papers followed. Paul Seaber suggested inviting the local State Geologist or the U.S.G.S. District Chief to give a summary of the ground water of the area. Harry LeGrand expressed a concern for too much emphasis on symposia and a need to continue the unsolicited papers for a full-day session. Dave Stephenson mentioned the marked absence of abstracts from the senior members and the importance of having them contribute. Bill Back stated that this year we had five 1/2-day sessions on hydrogeology related topics, which was quite substantial. Keros

MINUTES (Cont'd from page 3)

Cartwright mentioned that if there are not enough papers submitted, GSA will cut back the number of sessions allowed. Pat Domenico added that a Penrose Conference can easily constitute a session. Dave summarized the discussion with a comment that all of the above-mentioned mechanisms for increasing abstracts be put to use.

Dave mentioned the lack of a Monday night cocktail hour this year although there was one in previous years. He proposed that next year in Reno we have a cocktail hour that is dedicated to Jane Maxey and that it be named "The Jane Maxey Cocktail Hour."

In summarizing the discussions of the Reno meeting Dave noted that Terry Katzer and George Davis are the ones to contact for suggestions, comments, or volunteer work.

Grover Emrich was asked to comment on the 1985 meeting, which was to have been in Boston, but now may be held in Orlando, Florida. Tentative symposia, field trips, and sessions relating to Maine and Northeast hydrogeology had been organized. Because the Boston convention center is to be renovated and will be closed for some time, new field trip plans will be needed in the next few weeks. Richard Parizek suggested field trip possibilities on phosphate mining, karst problems, or Disney World. Bill Back suggested Paul Seaber as program chairman, which brought a chuckle. Dave then made a serious appeal for members to help Grover in plans for the meeting and field trip.

In concluding the discussions of national meetings, Dave asked for formal recognition of Noel Krothe for a good job done on this year's meeting.

Frank Schwartz was asked to comment on his Penrose Conference for next year. He stated that the tentative title is "Transport in Fractured Rock Systems." The topic has been officially approved and the location will be somewhere in the West--Colorado, Utah, or California. The tentative date is September 1984. More information will be in the GSA Newsletter. Dave mentioned that there are no other Penrose Conferences pending and that we need to keep the Division involved in these; therefore, members should be thinking about the following year.

Bill Back was asked to present information on the Decade of North American Geology (DNAG) volume and its progress. He reported on the meeting held in June in Denver with about 15-30 volunteer authors. Geologists have been designated for sections of the book. A meeting of authors will be held after the Division business meeting. They are expected to meet the deadline of the 1988 Annual Meeting and to have a rough draft by next year's meeting. He concluded by saying that he is receiving good support for the volume.

Paul Seaber was asked to report on the progress of the Hydrostratigraphic Nomenclature Committee. Other members of the committee are Keros Cartwright, co-chairman, Wendell Marine, who was unable to attend this meeting because of illness, Frank Schwartz, and Rodolfo Del Arenal. The committee met in Denver the same weekend as the DNAG committee met. There was some lack of agreement on how to define the units and what criteria to be used in how to name them; however, they did agree on a tentative definition of a hydrostratigraphic unit, which was printed in the newsletter. It is: "hydrostratigraphic unit is a mappable body of rock that is defined and identified on the basis of the nature, extent, and magnitude of its hydraulic continuity and its bounding discontinuities."

During the next year the committee plans to look into the problems of the present lack of agreed-upon concepts, definitions, and classifications of water-bearing strata. In a report to be published in Geology magazine there will be a discussion of the problem of defining the nature and boundaries of hydrostratigraphic units. The next step would be to formulate a proposed set of uniform standards and common procedures in classifying and naming all defined hydrostratigraphic geologic units. Claire Davidson has reported that the North American Committee on Stratigraphic Nomenclature, whose Chairman is Bob Jordan, is interested in the findings of this committee.

Paul then asked that the committee be allowed to continue for two more years and to pursue the publication of its findings. Dave announced that the Management Board took action on this matter and granted the two years to continue and will be looking for a report at the 1985 business meeting.

Dave asked for reports from the section representatives. Paul Seaber (SE) and Keros Cartwright (NC) have a joint section meeting in Kentucky in 1984 after which they would like to be replaced as representatives. Grover Emrich reported that the northeast section has developed a symposium for invited papers on "Advances in Hydrotechnology."

General discussion on section representatives followed. Members were in agreement that having hydrogeology representatives in each section is working and has made for more invited papers. The main duty of a representative is to urge people to submit abstracts before the deadlines and to act as a catalyst for activity in their section.

Dave announced that in January 1985 the International Association of Hydrogeologists will meet in Tucson. It will be an international congress on Hydrogeology of Rocks of Low Permeability.

MINUTES (Cont'd from page 4)

Tom Holzer announced that the Third International Symposium on Land Subsidence will convene in Venice in March 1984.

Bruce Hanshaw, Council Representative, reported that the Boston Meeting for 1985, as already announced, had to be changed to another location. A society as large as GSA requires a five-to-seven-year advance for all the preparations. The future meetings planned are: Reno, 1984; Orlando or Pittsburgh, 1985; San Antonio, 1986; Phoenix, 1987; Denver, 1988; and St. Louis, 1989. Bruce stated that the Society budget is \$2.5 million with \$800,000 used for services to members. Dues income amounts to \$300,000 which pays 40 percent of the member services and the balance of income is from investments. The attendance at the Indianapolis meeting through Monday was approximately 3900. Members registered were 1803 and students 1330. A total for the meeting was expected to be around 4300. Dave asked for official recognition and thanks to Bruce Hanshaw for his service to the Division as liaison to Council. The newly appointed liaison is Arthur Socolow.

Dave announced that Tom Holzer and Heidi Horten would continue to be the Newsletter editors. We will have two newsletters during the year with the first to be printed within three months of the annual meeting.

Dave stated that the Management Board had discussed an increase in dues. The present dues are \$3.00 while other divisions pay \$5.00. He noted that \$10,000.00 of the Birdsall Fund is the principal and is restricted from use. The interest is not sufficient to finance the lecture tours. After some discussion, Leonard Wood made the motion that the dues be increased to \$5.00 with the additional \$2.00 going to the principal of the Birdsall Fund. The motion was seconded by Grover Emrich.

After considerable discussion concerning the Birdsall tour expenses, student expenses, and investments, solicitations, etc., Keros Cartwright amended the motion to add that dues be reduced to \$2.00 for students. The motion, as amended, was passed. Beginning in 1985 dues for members will be \$5.00 (of which \$2.00 will go to the Birdsall Fund) and for students will be \$2.00. The Secretary will notify GSA of the change.

Dave announced that the Management Board had considered the best action to take concerning the American Institute of Hydrology (AIH) was to present the topic to the group for discussion without any formal action. The organization has been formed for the purpose of certifying hydrologists and hydrogeologists. Considerable discussion followed, including: it is not clear as to how and why the certification; some states say they will not recognize the certification; without legal back-up, the certification is useless; AGU and the University of Arizona are strongly opposed; and, after debate, the NWA did come out against it. Dave reported that the AIH has recently established an advisory board and as of one week ago they had received 700 applications of which 72 are members of the Hydrogeology Division. It was brought out that this issue may be similar to the AIPG-AAPG controversy that later was settled. George Davis will appoint a chairman to form a committee to study the issue and provide information at the 1984 meeting for formal action. At that time one of the Association's original organizers could be present to respond to questions.

For the next order of business, Dave turned the meeting over to George Davis, Chairman for 1984. George called for a vote of thanks to Dave Stephenson for his good work as chairman.

George then adjourned the meeting.

CALL FOR HYDROGEOLOGY ABSTRACTS

for

1984 GSA ANNUAL MEETING

RENO, NEVADA

Abstracts for the 1984 Geological Society of America Annual Meeting are due June 8. The Society's criteria for allocation of time for sessions at the annual meeting is contingent upon the Division presenting a strong, timely program of high interest. This requires large numbers of unsolicited abstracts in addition to the invited abstracts of participants in Division symposia. If we are to have an outstanding program, volunteered abstracts are vital. So ----

MEETINGS

27th International Geological Congress August 4-14, 1984 Moscow, USSR

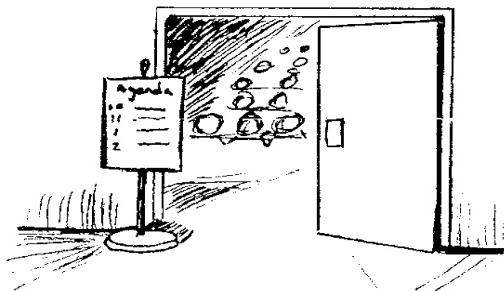
The congress will include coverage of modern theoretical problems in hydrogeology; forecasting changes in the chemical composition of underground water reserves; methods of modelling hydrogeological processes; optimization of ground-water utilization and control of ground-water regimes; and ecological consequences of artificial changes in hydrogeological regimes. For information contact: John E. Moore, U.S. Geological Survey, 440 National Center, Reston, VA 22092.

Hydrogeology of Rocks of Low Permeability January 7-10, 1985 Tucson, Arizona

The 17th International Congress of the International Association of Hydrogeologists will meet in Tucson, Arizona, January 7-10, 1985. The theme of the congress is the hydrogeology of rocks of low permeability. Waste management will be emphasized. Planned field trips include one on January 14 to Yucca Mountain at the Nevada Test Site, where a high-level nuclear wastes repository site in the vadose zone is being considered. For information contact: E.S. Simpson, Department of Hydrology and Water Resources, University of Arizona, Tucson, AZ 85721.

International Symposium on Management of Hazardous Chemical Waste Sites October 9-10, 1985 Winston-Salem, North Carolina

Management of Hazardous Chemical Waste Sites will be the subject of an international symposium in Winston-Salem, North Carolina, October 9-10, 1985. The symposium is being organized by the U.S. National Committee for the International Association of Engineering Geology and will be held in conjunction with the 28th Annual Meeting of the Association of Engineering Geologists, October 7-11, 1985. Abstracts are due March 15, 1985. For information contact: Norman R. Tilford, Department of Geology, Texas A&M University, College Station, TX 77843.



PENROSE CONFERENCE ON TRANSPORT PROCESSES IN FRACTURED ROCK

A Penrose Conference, "Transport Processes in Fractured Rock," will be held September 24-28, 1984, at the Yarrow Hotel and Conference Center, Park City, Utah. Conveners are Leslie J. Smith, Department of Geological Sciences, University of British Columbia, Vancouver, British Columbia V6T 2B4, Canada, and Frank W. Schwartz, Department of Geology, University of Alberta, Edmonton, Alberta T6G2E3, Canada.

This conference will bring together hydrogeologists, geophysicists, and others with an interest in transport processes in fractured rocks. Participants will have an opportunity not only to review recent theoretical developments in this field, but also to become aware of the practical problems associated with site-specific studies. The program itself will focus on three main areas: the physics of mass and heat transport in fractured media, methods used and experience gained in simulating these processes, and techniques available to collect and interpret hydrogeological data. The first of these will include such topics as the role of fracture geometry in flow and transport, diffusion of solutes and conduction of heat from fractures into intact rock blocks, free and forced convection in fracture networks, heat and mass transport in the unsaturated zone, and immiscible displacement. Topics related to the second area include continuum, discrete and multiple interacting continuum approaches to modeling, advances in solving transport equations, and the practical application of mathematical techniques for risk assessment. Topics related to the field and experimental techniques will include in situ testing, methods for the determination and the statistical characterization of fracture geometries, and field studies of flow systems in fractured rocks.

If you want to attend this conference, apply in writing to Leslie J. Smith (address above) before April 30, 1984. Include a brief summary of your current research interests and specific reasons for wishing to attend the conference. Don't miss this opportunity to exchange ideas, make or renew collaborative ties, and breathe the mountain air.

INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS

The International Association of Hydrogeologists is a nonprofit, international, scientific, and educational organization that was established to exchange hydrogeologic information and to advance the science of hydrogeology. IAH, which promotes cooperation between scientists who are working on hydrogeologic problems, is affiliated with the International Union of Geological Sciences (IUGS).

The IAH will accept for membership an individual engaged in hydrogeologic investigations, research, or management. Membership is granted on the basis of scientific qualifications, experience, and publications. Dues are \$17.00 per year. For membership applications contact F.L. Doyle, Secretary-Treasurer, IAH, 4875 Wheatstone Drive, Fairfax, VA 22030.

DUES INCREASED

At the annual business meeting of the Hydrogeology Division on November 1, 1983, members voted to increase Division dues from \$3.00 to \$5.00. The dues for student members are to be decreased from \$3.00 to \$2.00. The dues increase of \$2.00 will be added to the principal of the Birdsall fund. In the last few years, income from the Birdsall Fund, which has a principal of \$10,000, has been insufficient to meet the expenses of the Birdsall Distinguished Lecturer despite cost-cutting efforts. The dues increase will permit the Division to continue to offer this important program.

COMMITTEE ON HYDROSTRATIGRAPHIC UNITS

The Hydrogeology Division Committee on Hydrostratigraphic Units met in Indianapolis on November 2, 1983. The five-member committee, which is chaired by Paul R. Seaber and Keros Cartwright, is seeking to prepare a section on hydrostratigraphic units for the North American Stratigraphic Code for the North American Commission on Stratigraphic Nomenclature. Presently no guidelines, concepts, methods, or set of rules exist that codify or classify water-bearing units consisting of either stratified or nonstratified rocks or sediment. The absence of uniform standards and procedures for defining and

classifying water-bearing units has caused confusion among hydrogeologists. The Hydrogeology Division, through this committee, is taking the lead in establishing a standardized nomenclature. The charter of the committee was extended for 2 years at the Indianapolis Business Meeting. Present plans call for a draft of the proposed code to be prepared and published in *Geology* magazine this year. If you would like to express your views on this subject, please contact Paul Seaber (USGS, 227 N. Bronough Street, Suite 3015, Tallahassee, FL 32301).

HYDROGEOLOGY DIVISION

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John M. Sharp, Jr. Richard R. Parizek

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Frank W. Schwartz, Lecturer

Nominating Committee
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Frank W. Schwartz
Darrell I. Leap

Ad Hoc Committee for Meritorious Service Award
Darryll T. Pederson, Chairman
Joseph S. Rosenshein David A. Stephenson

Ad Hoc Committee on Hydrogeologist Certification
O. M. Hackett, Chairman
Allen F. Agnew David A. Stephenson

Committee on Hydrostratigraphic Units
Paul R. Seaber, Co-Chairman & Federal Representative
Keros Cartwright, Co-Chairman & State Agency Representative
I. Wendell Marine, Industrial Representative
Frank W. Schwartz, Canadian & Academic Representative
Rodolfo Del Aranal, Mexican & Academic Representative
Claire Davidson, USGS Representative



THE GEOLOGICAL SOCIETY OF AMERICA

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