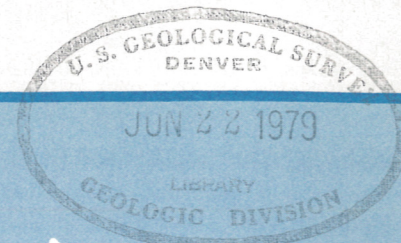


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The Hydrogeologist

NEWSLETTER OF THE HYDROGEOLOGY DIVISION OF THE GEOLOGICAL SOCIETY OF AMERICA, AUGUST, 1977

1977 MEINZER AWARD GOES TO JACOB RUBIN AND RONALD V. JAMES

The 1977 Meinzer Award Panel has given the 1977 award to Jacob Rubin and Ronald V. James for their paper *Dispersion-affected transport of reacting solutes in saturated porous media: Water Resources Research*, v. 9, p. 1332-1356, 1973. The award is to be presented at the Division's luncheon on November 7, 1977, in the Symphony Room of the Opera House in the Seattle Center.

1977 ANNUAL MEETING AT SEATTLE

During the Annual Meeting, which is to be held in Seattle on November 7-9, 1977, there will be several sessions of interest to hydrogeologists. The Division will sponsor a general session (November 9, 0800, Nisqually Room, Seattle Center) and a symposium, "Geologic Disposal of High-Level Radioactive Wastes" (November 8, 0800, Snoqualmie Room, Seattle Center). In addition, it will co-sponsor a symposium, "Geochemistry and Hydrology of Continental Geothermal Systems" (November 8, 1300, Eames Theater, Seattle Center) with the Geochemical Society. Finally, a Division-sponsored field trip (No. 8) organized by Mark Meier will involve an overflight of the North Cascades in a DC-3 to examine the glaciers and associated features. The trip, which will leave from the Olympic Hotel, will take place on November 7-8. It will cost \$42, which includes bus fare to airstrip and air fare. Registration will be on a first-come, first-served basis at 0900, November 7, at the field trip information desk in the Palm Court Lobby of the Olympic Hotel. The trip will not be taken unless the weather is favorable. Please indicate your interest in the trip by checking the appropriate box on the field trip registration form to be found in the second announcement (August 1977 issue of *Geology*).

The Division luncheon and business meeting will be held at 1200 on November 7, 1977, in the Symphony Room of the Opera House in the Seattle Center.

1978 ANNUAL MEETING

The 1978 Annual Meeting of the Geological Society of America is to be held on October 23-26, 1978, in Toronto, Canada, in cooperation with the Geological Association of Canada and the Mineralogical Association of Canada. Plans for a hydrogeology program are currently being formulated, and any suggestions should be sent to the program chairman, John A. Cherry, Department of Earth Sciences, University of Waterloo, Waterloo, Canada N2L 3G1 (519) 885-1211.

HIGHLIGHTS OF 1976 ANNUAL MEETING AT DENVER

At the 1976 Annual Meeting, the Division sponsored a general session and two half-day symposia entitled "Hydrogeologic and Engineering Problems Related to Coal Mining" and "Hydrogeology in the United States, 1776-1976." In addition, two other symposia of interest to hydrogeologists were held: "Geomorphology and Geohydrology of Alpine Karst Terrains of the Rocky Mountains" and "Geology and Geophysics of Hydrothermal Systems," also the technical session "Geochemistry of Ground Water."

The annual luncheon and business meeting were held in the Silver Room of the Denver Hilton. Seventy-seven members attended the luncheon and 120 attended the business meeting. The minutes of this meeting follow:

Paul A. Witherspoon, Chairman of the Management Board for 1975-1976, introduced those at the head table, including John D. Bredehoeft, Stephen M. Born, John A. Cherry, John E. Moore, Shlomo P. Neuman and Mrs. Neuman, and Mrs. Elizabeth Witherspoon.

John A. Cherry, outgoing Secretary-Treasurer, presented a brief report that included reference to the minutes of the 1975 business meeting in Salt Lake City which had been summarized in the August 1976 Division newsletter. The new members of the management board were announced: John D. Bredehoeft, Chairman; Stephen M. Born, First Vice-Chairman; Keros Cartwright, Second Vice-Chairman; Richard L. Cooley, Secretary-Treasurer. A count of 212 ballots were cast. Cherry reported that the Division had received a \$10,000 bequest from the estate of John M. Birdsall, who passed away in September 1975. The Division will have use of the earnings from this sum, approximately 6% annually. It was also reported that the Division now receives revenue from the \$2 dues charged members of the Division. To date, revenue from this source has produced a total of \$1,580, of which approximately \$400 was spent on printing and mailing the newsletter. The remaining funds are available to the Division for allocation.

Witherspoon called on John E. Moore to report on the Denver meeting. Moore reported that there was an exceptional response to the call for papers. Thirty-five percent of submitted papers were rejected. Many papers submitted for the general hydrogeology section were fitted into other sections or symposia. In the way of advice to future program chairmen, it was recommended that the annual program organizational meeting held at GSA headquarters in July be attended by the program

chairman. This ensures that Division interests are represented when the program and room allocations are being drawn up. Moore thanked the Field Trip Committee for its contribution (R. L. Burroughs, D. Huntley, and D. H. McFadden) and noted that the absence on the field trip of other knowledgeable workers in the field-trip area had detracted from the trip.

Witherspoon thanked by name all members of Division committees for 1975-1976. This included 1976 Meinzer Award Panel, consisting of Robert Schneider, Chairman, and George H. Davis, R. Allan Freeze, Isaac J. Winograd, and Eugene S. Simpson; Nominations Committee, consisting of R. Allan Freeze, Chairman, Harry Legrand; 1976 Program Committee with Moore as Chairman.

Bredehoeft was called upon to present the O. E. Meinzer Award to Shlomo P. Neuman and Paul A. Witherspoon for their paper entitled "Field determination of the hydraulic properties of leaky multiple aquifer systems" in *Water Resources Research*, v. 8, no. 5, p. 1284-1298, 1972. Bredehoeft summarized a written statement prepared by Stanley N. Davis, Past Chairman of the Division, as a tribute to the two award winners. Following receipt of the award, Neuman and Witherspoon thanked the Meinzer Award Committee and the Division for the recognition extended to them by the award. Each of the recipients commented on the assistance provided by their colleagues and on some of the influences and events that had led to their work on leaky artesian aquifers.

Witherspoon read the necrology list for the past year. It included the following five names:

John M. Birdsall	Ian D. Mackenzie
Maurice L. Brashears, Jr.	Louis J. Scopel
Kimball Bodoia	

A minute of silence was then observed.

David A. Stephenson was asked by Witherspoon to report on the recent Penrose Conference that he co-hosted with Lee Holt, Jr., in Wisconsin. The title of the conference was "Hydrogeologic Regime of Inland Lakes." Jack Green also provided assistance in the organization and operation of the conference. Stephenson indicated that forty-eight people from a wide variety of disciplines attended the conference and, therefore, the desired interdisciplinary nature of the conference had been achieved. The conference included a break in the middle for a field trip to observe several lakes and lake-research projects. It was noted that there was a tendency for too much emphasis on formal presentations and too little time for more informal discussions. This has been a problem with Penrose Conferences; however, Stephenson noted that the variety of disciplines represented and the range of topics discussed was indeed encouraging.

R. Allan Freeze then reported on an upcoming Penrose Conference that had been approved by the GSA Council. He noted that the attendance would be limited to 70-80 people, and the conference would be held in British Columbia during the period of August 29-September 2. A conference description sheet prepared by Freeze was made available to those present and to those who may care to write Freeze at the University of British Columbia.

Chairman-Elect Bredehoeft was called upon by Witherspoon to comment on plans for the Seattle meeting in November 1977. Bredehoeft indicated that two symposia have been proposed—Joint with Geochemistry Society, Geochemistry and Hydrology of Continental Geothermal Systems; Joint with Geo-

physics Division, Role of Fluids in Faulting and Earthquakes. He indicated that a third symposium on the topic of storage and disposal of high-level radioactive wastes or energy development was being considered, either as a Division symposium or possibly jointly sponsored with the GSA Committee on Environment and Public Policy. A field trip to the South Cascade Glacier is being considered. This glacier is one of the very few glaciers in the world that has been investigated in great detail. Weather and air transportation are the main problems with a field trip of this type.

Cherry reported that he and Robert Farvolden would be willing to represent the Division in preparation of the program for the Toronto meeting in 1978. He noted, however, that the meeting was being co-sponsored with the Geological Association of Canada and the Mineralogical Association of Canada. GAC has the formal authority over the program. Cherry indicated that he and Farvolden would seek representation on the Canadian Program Committee.

Then began the main discussion of the business meeting. Bredehoeft raised the question of how to proceed with utilization of the annual revenue of the John M. Birdsall bequest, which will amount to about \$600 per year. It was also noted that there will be \$1,100 or more available annually from the membership dues after other expenses are paid. It was moved by George W. White and seconded by Gerry Parker that the Division take action at this business meeting. The motion was carried with no negative votes. Bredehoeft raised the question of providing replicas of the Meinzer Award Bowl (known as the Birdsall Bowl) to all winners of the award. It was moved by Gerry Parker and seconded by Richard Parizek that the Division proceed along these lines. This motion was carried by a vote of 16 to 13. A motion that the Division not provide replica bowls was defeated prior to this affirmative motion.

Bredehoeft then raised a second matter with regard to expenditure of Division revenues. He suggested that the Division consider using some of the income funds to sponsor a distinguished lecture tour. He noted that GSA policy does not permit a second award to be offered by the Division. A distinguished lecture tour would not be considered a Division award. Some discussion followed with a suggestion by Freeze that the funds be used to form a student scholarship. It was then moved by Burke Maxey that "the revenue from the John M. Birdsall estate and as much as is needed and as is prudent from Divisional dues be used to support a Birdsall Distinguished Hydrogeology Lecture Tour, and that steps be taken if or when the need arises to accommodate changes in the title of this tour within the Division bylaws." This motion was seconded by Moore and was carried with only four negative votes. Some discussion followed and it was generally agreed that the Management Board of the Division has the authority and flexibility to proceed as they see fit within the framework of this broad motion. The secretary was instructed to record this specifically within the minutes. Bredehoeft had suggested earlier that the Meinzer Committee have the responsibility of suggesting five names for consideration by the Management Board in the choice of speaker for the lecture tour. The Management Board was left with the responsibility of choosing the speaker and arranging the tour.

Leo Heindl raised an item of new business. He indicated that Division cooperation with AAAS in joint sponsorship of sessions or symposia would be appropriate. It was noted that

Heindl had been asked by the GSA Council to be the liaison with Section W of AAAS; and, as a result, Heindl raised the matter at the business meeting. William Back and Bruce Hanshaw commented on existing interactions between the Geochemical Society and AAAS. Heindl and Back volunteered to explore the possibilities for increased coordination between the Division and AAAS for 1978. It was agreed that this would be an ad hoc committee for 1978 only, with a view to joint GSA-AAAS efforts with regard to the 1978 AAAS meeting.

Maxey drew attention to the poor situation that existed during the Division field trip associated with the Denver meeting. He was critical of the people who were knowledgeable of the field-trip area but who were not on the trip as resource people. He considered this to have been a serious omission. Others agreed with him. He took care to emphasize that he was appreciative of the efforts of those who were on the field trip.

Moore reported that plans were underway to compile the papers presented in the History of Hydrogeology Symposium. Parizek suggested that Back's paper on "Hydrology and Mythology in Ancient America" be included in the publication.

It was suggested that the Division newsletter contain more specific information on the upcoming Annual Meeting programs, such as dates and times of sessions and field trips. (Although it was not mentioned at the business meeting, it should be noted that the August 1976 newsletter did contain this type of information. This recommendation, therefore, is already in practice.)

At 3:15 p.m. Witherspoon turned the gavel over to Bredehoeft who accepted a motion for adjournment.

FIRST BIRDSALL DISTINGUISHED LECTURER IN HYDROGEOLOGY

At the 1976 business meeting, the Division agreed to establish a distinguished lecturer in hydrogeology, to be named the Birdsall Distinguished Lecturer. Money from the Division treasury and the Birdsall bequest, as well as the host institution, is to be used to support a lecture tour. Jacob Bear of TECHNION, Israeli Institute of Technology, Haifa, Israel, has agreed to be the first distinguished lecturer and will be in North America for a lecture tour during the last two weeks of September and the first few days of October. The itinerary and organizer at each institution are as follows:

September 19-20, University of Waterloo (John A. Cherry, Department of Earth Sciences, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1, Phone: 519-885-1211).

September 22-23, University of Wisconsin (David A. Stephenson, Environmental Resources Unit, University of Wisconsin—Extension, 1815 University Avenue, Madison, Wisconsin, 53706, Phone: 608-262-1840).

September 26-27, University of California (Paul A. Witherspoon, University of California, 480 Davis Hall, Berkeley, California 94720, Phone: 415-642-5390).

September 29-30, University of Arizona (Stanley N. Davis*, Department of Hydrology and Water Resources, University of Arizona, Tucson, Arizona 85721, Phone: 602-884-3131).

October 3-4, Reston, Virginia (Gerald F. Meyer, U.S. Geological Survey, Ground Water Branch, WRD, National Center, Mail Stop 411, Reston, Virginia 22092, Phone: 703-860-6904).

DEATHS OF TWO PROMINENT HYDROLOGISTS AND MEINZER AWARD WINNERS

Two prominent hydrologists and previous winners of the Meinzer Award, George B. Maxey and Robert W. Stallman, have died this last year. Dr. Maxey, whose sudden death occurred on February 6, 1977, was Director of the Water Resources Center, Desert Research Institute, University of Nevada System, Reno, Nevada, and received the Meinzer Award in 1972 for his paper "Hydrogeology of Desert Basins," *Ground Water*, v. 6, no. 5, 1968. He is survived by his wife Jane (Reno, Nevada); his mother Opal Maxey (Livingston, Montana); five children, Lee (Sacramento, California), Nelle Maxey Olsen (Hythe, Alberta, Canada), Dan, Ann Essex, and Jean (Reno); four brothers and sisters; and six grandchildren.

Dr. Stallman (who retired May 1975 as Regional Research Hydrologist of the Central Region, U.S. Geological Survey, Denver) died on June 25, 1977, in Longmont, Colorado, after an extended illness. He received the Meinzer Award in 1967 for his paper "Multiphase Fluids in Porous Media—A Review of Theories Pertinent to Hydrologic Studies," U.S. Geol. Survey Prof. Paper 411-E, 1964. He is survived by daughters Cynthia Stallman Sauer (Johnston, Colorado), Kathleen Stallman Mueske (Denver, Colorado), and sons Daniel and Richard (Denver). We will all miss these great men.

HYDROGEOLOGY DIVISION AND IHP

The International Hydrologic Program (IHP), which is an outgrowth of the International Hydrologic Decade (IHD), has as its general objective the promotion and exchange of international research in hydrology. Coordination of U.S. activity within the IHP is achieved by the U.S. Committee on Scientific Hydrology, in which a number of Federal agencies and professional organizations have representatives. The GSA is represented by delegate Stanley N. Davis and alternate David A. Stephenson. The chairman of the committee is Joseph S. Cragwall, Jr., and the Executive Secretary is Leopold A. Heindl. At present, the committee is developing guidelines to indicate how publications can be designated as IHP contributions.

COMMITTEE ON MODEL CALIBRATION

A committee on calibration and verification techniques in ground-water modeling, chaired by Robert Longenbaugh of Colorado State University at Fort Collins, has been organized under the auspices of the American Society of Civil Engineers. The purposes of the committee are (1) to assemble and review information on calibration and verification techniques and prepare a state-of-the-art report or paper which emphasizes the practical application of these techniques in ground-water modeling, and (2) to promote interchange of current research results on model calibration and verification and explore the feasibility of organizing a symposium on the subject sponsored jointly by other professional and scientific organizations. The committee is presently formulating plans for a symposium or workshop sometime in 1978.

*Before September 1, inquiries should be addressed to Shlomo P. Neuman, Phone: 602-884-4434 or Eugene S. Simpson, Phone: 602-884-1855.



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HOLCOMB STUDY OF GROUND-WATER MODELS

An international study to assess the status of numerical models as an aid in ground-water resource management is being carried out under the leadership of Yehuda Bachmat of Israel by the Holcomb Research Institute of Butler University. The project is directed by a steering committee led by John D. Bredehoeft of the U.S. Geological Survey. Research objectives are being met through surveys of model developers, model users, and water managers or decision makers. In addition, workshops were held in Las Vegas, Nevada; Denver, Colorado; and Tampa, Florida, where the three groups gathered to discuss various aspects of modeling. The final product is to be an extensive report in which approximately 250 models relating to ground water are inventoried and discussed. Of major interest is an appendix that includes references concerning availability of the models.

TREASURY REPORT

As of June 30, the Division had a balance of \$2,927.39 in the treasury. This includes income from dues and interest accrued from the Birdsell bequest.

HYDROGEOLOGY DIVISION OFFICERS

Management Board

Chairman

John D. Bredehoeft, Reston, Virginia

First Vice-Chairman

Stephen M. Born, Madison, Wisconsin

Second Vice-Chairman

Keros Cartwright, Urbana, Illinois

Secretary-Treasurer

Richard L. Cooley, Denver, Colorado

1977 Meinzer Award Panel

R. Allan Freeze

Eugene S. Simpson

Isaac J. Winograd

John A. Cherry

George H. Davis, Chairman

1977 JTPC Representative

John D. Bredehoeft

MEETINGS AND CONFERENCES OF INTEREST

International Symposium on the Effects of Urbanization and Industrialization on the Hydrological Regime and on Water Quality, sponsored by UNESCO and the Netherlands Committee for the International Hydrological Program in cooperation with IAHS, October 2-7, 1977, Amsterdam, Netherlands. (A. I. Johnson, Chairman, U.S. National Committee for IAHS, U.S. Geological Survey, National Center, M.S. 417, Reston, Va. 22092).

Water Resources Management Conference on Setting Priorities for Water Use in Times of Shortage, sponsored by the Environmental Resources Unit of the University of Wisconsin, October 3-5, 1977, Madison, Wisconsin (David A. Stephenson, Environmental Resources Unit, University of Wisconsin—Extension, 1815 University Avenue, Madison, Wisconsin 53706).

There will be a \$25 fee for nonfederal employees and a \$150 fee for federal employees. Joseph S. Cragwall, Jr., Chief Hydrologist of the U.S. Geological Survey, will give the keynote address.

52nd Annual Technical Conference and Exposition of the Society of Petroleum Engineers of AIME, October 9-12, 1977, Denver, Colorado (Society of Petroleum Engineers of AIME, 6200 N. Central Expressway, Dallas, Texas 75206).

Topics of interest to many hydrogeologists include reservoir simulation, drilling technology, well logging and other geophysical methods, and geological engineering. Chief sessions will investigate the interface between petroleum engineering, geology, geological engineering, and geophysics.

Annual Convention of the American Association of Civil Engineers, October 17-21, 1977, San Francisco, California (A. J. Favata, ASCE, 345 East 47th Street, New York, N. Y. 10017).

Details of the convention appear in the July issue of Civil Engineering Magazine.

Thirteenth American Water Resources Conference, sponsored by the American Water Resources Association, October 31–November 3, 1977, Tucson, Arizona. (D. D. Evans, Department of Hydrology and Water Resources, University of Arizona, Tucson, Arizona 85721).

A special Symposium on River Quality is to be held on November 2-3 in conjunction with the conference.

1977 Fall Meeting of the American Geophysical Union, December 5-9, 1977, San Francisco, California (Meetings, AGU, 1909 K Street, N.W., Washington, D.C. 20006).

In addition to the general sessions on hydrology, two special sessions are planned: "Water Movement and Equilibrium in Swelling Soils" and "Coupled Heat and Moisture Transfer in Freezing Soils."

International Symposium on Isotope Hydrology, sponsored by the International Atomic Energy Agency in cooperation with UNESCO, June 19-23, 1978, Neuherberg, Federal Republic of Germany (John H. Kane, Special Assistant for Conferences, Office of Technical Information, U.S. Energy Research and Development Administration, Washington, D.C. 20545).

Topics include the whole spectrum of research and applications of isotope techniques to hydrology. Synopses of proposed papers from the U.S. should be sent to the address given above and are due by November 30, 1977.

International Symposium on Risk and Reliability in Water Resources, June 26-28, 1978, Waterloo, Ontario, Canada. (Organizing Committee, Department of Civil Engineering, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.)

Topics to be included in the conference are (a) Distribution and analysis of extreme events and their influence on design; (b) Use of stochastic, deterministic and hybrid models in risk and reliability analysis; (c) Socio-economic and political considerations, including quantitative and nonquantitative approaches to risk and reliability; (d) Decision theory techniques available for use in risk and reliability studies.