



The Hydrogeologist

NEWSLETTER OF THE HYDROGEOLOGY DIVISION OF THE GEOLOGICAL SOCIETY OF AMERICA, ^{Sept.} JULY 1983

MESSAGE FROM THE CHAIRMAN

Dear Colleagues:

This newsletter should reach you in time to serve as a reminder of important events in Indianapolis. Note the full schedule of Divisional activities listed on page 4 and please plan to attend the Annual Meeting. We would like to see a large turnout at this centrally-located city. I promise to keep the Business Meeting portion rolling rapidly, despite a very full agenda. I wish to discuss here several items reported elsewhere in this newsletter.

My congratulations to Ed Weeks and Frank Schwartz for being named, respectively, the 1983-1984 Meinzer Award recipient and Birdsall Distinguished Lecturer. Frank's selection is the first Canadian and the second non-U.S. citizen to be so honored (Jacob Bear was the first Lecturer). Several outstanding papers were nominated for the Meinzer Award and the committee was hardpressed to make a selection. Ed's contribution to our literature should prove important in the study of water-contamination processes and hazards from landfills or other surface sources of ground-water recharge by spreading. In line with the "body of papers" modification of the Bylaws governing the Meinzer Award Committee, a second paper can be cited as additional evidence of contribution. In this case, a supporting report is "Use of Atmospheric Fluorocarbons P-11 and P-12 to Determine the Diffusion Parameters of the Unsaturated Zone in the Southern High Plains of Texas" by Weeks, E.P., D.E. Zarp, and G.M. Thompson, which was published in *Water Resources Research*, vol. 18, no. 5, p. 1365-1378, 1982.

One topic for discussion during our annual business meeting will be the perennial problem of how to develop appropriate financial support for the Birdsall Lectures. Options include voluntary donations, increased Divisional dues, pass full expenses to the host institutions, or place restrictions on the Lecturer to tour only a limited geographical area. The average amount now available is \$2,000 per year, which is easily consumed by only several flights to host cities.

Another agenda item will be discussion of the American Institute of Hydrology (AIH). As many are aware, there is some confusion and controversy relating to the existence of AIH. It would be appropriate, in my opinion, to decide if the Division wishes to formally endorse AIH or not.

We also will discuss the Meritorious Service Award concept mentioned in the last newsletter. Should the Division create a third honorary award for periodic presentation to a person, or

persons, based on years of service and/or publication of papers in a non-scientific journal but with far-reaching impact to the water-resources community?

One of the pleasant activities to perform, in addition to presentation of the Meinzer Award, will be recognition of past and present Birdsall Distinguished Lecturers via presentation of Certificates. These awards will be an official Divisional recognition of services by the Lecturers and will read "This Certificate expresses our sincere appreciation to () for serving as the John M. Birdsall Distinguished Lecturer for 19(). You have given especially valued services to the Society by promoting the understanding and advancement of the role of Hydrogeologists in the contemporary world." We hope that past Lecturers can be in attendance.

This message and the Luncheon-Business Meeting at Indianapolis signify the end of my term of office. It has been an honor to serve as the Divisional Chairman. I do, however, look forward to passing the gavel to George Davis.

Dave Stephenson

Dave Stephenson, Chairman
Hydrogeology Division

FRANK SCHWARTZ, BIRDSALL LECTURER (Con't From P. 2)

understanding of hydrogeologic processes. From the viewpoint of the practitioner, we see examples of how modeling techniques have played a major role in solving problems in water supply, coal resource development, and nuclear waste management. The challenge for hydrogeologists in the use of computers will be to develop the full potential of the technology and understand its limitations.

A CASE STUDY OF GROUND-WATER CONTAMINATION FROM A CHEMICAL SPILL

Between 5,800 and 21,000 liters of transformer oil containing polychlorinated biphenyls (PCB's) and trichlorobenzenes (TCB's) were spilled when an underground pipe broke at a manufacturing plant at Regina, Saskatchewan. The spill aroused considerable concern because of the hazardous nature of the chemical material and because the site is located over a major aquifer supplying water to the city and local industries. Large quantities of PCB's and TCB's were found to have migrated downward and laterally in the subsurface. Although the contaminants had not yet penetrated confining beds to reach the aquifer, the future threat posed by the PCB's and TCB's meant that appropriate remedial actions were required. The continued spreading of contaminants has been controlled by treating the ground surface, placing bentonite barriers to control the shallow flow of groundwater, and restricting drilling at or near the site.

The Birdsall Lectures are funded through an endowment from the late John M. Birdsall, hydrogeologist, to acquaint students with outstanding professionals in the field of hydrogeology. Former recipients of the annual award are Jacob Bear, TECHNION, Israeli Institute of Technology, Haifa, Israel; William Back, USGS, Reston, Virginia; David Stephenson, Woodward-Clyde Consultants, San Francisco, California; Irwin Remson, Stanford University, Stanford, California; Patrick A. Domenico, University of Illinois, Urbana, Illinois, and Richard R. Parizek, Pennsylvania State University, University Park, Pennsylvania.

COMMITTEE ACTIVITIES

COMMITTEE ON HYDROSTRATIGRAPHIC UNITS MEETS

The Committee on Hydrostratigraphic Units, appointed by chairman Dave Stephenson to look into the classification of water-bearing deposits within the Code of Stratigraphic Nomenclature, met in Denver on June 17, 1983. In attendance were Messrs. Seaber, Cartwright, Marine, and Schwartz, assisted by Gerald Meyer, Ralph Heath, and Harry LeGrand. The committee agreed on a tentative definition as follows: "A 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 conductivity and its bounding discontinuities." The committee will report to the Division at the annual meeting on its findings and recommendations.

1983 ANNUAL MEETING AT INDIANAPOLIS

October 30 - November 3, 1983

Noel Krothe, Joint Technical Program Chairman, has organized an excellent program. Division-sponsored events and other events of interest to the Division are:

Wednesday, October 26

Premeeting Hydrogeology Division Field Trip: Ground-Water Hydrology and Geomorphology of the Mammoth Cave Region, Kentucky, and of the Mitchell Plain, Indiana. Ralph O. Ewers, Noel Krothe, Richard L. Powell, James F. Quinlan, and Joseph A. Ray. Limit 36; 4½ days; fee \$190, includes lodging and some meals. Preregistration deadline: September 30, 1983.

Sunday, October 30

GSA Annual Welcoming Party. Convention Center, Ballroom, 1800-2100. Registration desk and exhibits will be open.

Monday, October 31

Hydrogeology Division and Society of Economic Geologists Centennial Symposium on **Hydrodynamics and Geochemistry of Ore Generation in Sedimentary Environments**. Conveners: William C. Kelly, John M. Sharp, and Donald E. White. Convention Center, 500 Ballroom, 0845-1130 and 1400-1730.

Tuesday, November 1

Hydrogeology Division Management Board Meetings: Hyatt Regency, Yosemite, 0830-1030.

Birdsall Distinguished Lecture: Hydrologic Significance of Fracture Traces and Lineaments by Richard R. Parizek. Hyatt Regency, McKinley Room, 1100-1200.

Hydrogeology Division Luncheon, Awards, and Business Meetings: Hyatt-Regency, McKinley Room, 1230-1500 (cash bar, 1200-1230). Cost \$12; tickets available by preregistration or at GSA registration desk up to 24 hours before luncheon.

Hydrogeology Division Poster Session: Convention Center, Hall B, 1330-1830.

Engineering Geology Division Symposium on **Geologic Disposal of Radioactive Wastes**. Convener: Lokesh Chaturvedi. Convention Center, Room 224-225, 1330-1730.

Nuclear Waste Disposal Issues Forum. Panel discussion with audience participation on nuclear waste issues of interest to geologists. Presented by GSA Committee on Geology and Public Policy. Hyatt Regency, Regency Ballroom B, 1730-1900.

A Night at the Market: In the Indianapolis City Market. Food and music. 1800-2200. Cost \$12.00. Preregistration recommended.

Wednesday, November 2

Hydrogeology I. Marc W. Bodine, Jr. and Charles W. Kreitler, presiding. Convention Center, Room 204, 0800-1200. 16 pages, 15 minutes each.

Thursday, November 3

Hydrogeology II. Michael J. Graham and Darrell I. Leap, presiding. Convention Center, Rooms 123-125, 1300-1800, 16 pages, 15 minutes each.

At Large Symposium on **Geology and Hydrogeology of the Teays-Mahomet Bedrock Valley System**. Conveners: W. N. Melhorn and John P. Kempton. Convention Center, Room 122, 0800-1200.

WORKSHOP ON DNAG HYDROGEOLOGY VOLUME

Paul Seaber reports that 26 members of the Hydrogeology Division met in a planning workshop in Denver, Colorado on June 17-19, 1983, for the Hydrogeology Volume of the Decade of North American Geology Series (DNAG). In attendance were Messrs. Back, Van Brahana, Cartwright, Cherry, G. Davis, S. Davis, Domenico, Heath, Higgins, Johnston, Jorgensen, LaMoreaux, LeGrand, Lennox, Lesser, Marine, Meyer, Mifflin, Palmer, Pfannkuch, Rosenshein, Schwartz, Seaber, Stephenson, Trainer, and Wood. These representatives from a broad spectrum of ground-water geology interests in North America--industry, academia, State, and Federal agencies from the U.S., Mexico, and Canada--will participate in the preparation of the 400-page volume. Others in the Division, as well as specialists and nonhydrogeologists, will be asked by the co-editors Bill Back and Paul Seaber and the chapter coordinators to participate. Assignments were agreed upon and an outline was adopted at the meeting. Pete Palmer and GSA staff ably assisted at the session. The book will include four major chapters which are, with chapter coordinators indicated: Introduction (LaMoreaux, Meyer, and Marine), Regional Syntheses (Rosenshein), Comparative Hydrogeology (S. Davis), and Ground Water and its Relationship to other Aspects of Geology (Domenico). The co-editors will coordinate this volume with the Surface Water of North America Volume being edited by Reds Volman and Marshall Moss.

ANNOUNCEMENTS

GROUND WATER: ISSUES AND ANSWERS AVAILABLE FROM AIPG

The American Institute of Professional Geologists has published a new informative booklet on ground water. The purpose of the booklet is to provide policymakers, legislators, and the general public with information and data about both the potential and limitations of U. S. ground water so that this resource can be managed in the best long-term interest of the Nation. The report was written by a committee chaired by George H. Davis. It is available for \$3.00 from AIPG, 7828 Vance Drive, Suite 103, Arvada, CO 80003.

THIRD INTERNATIONAL SYMPOSIUM ON LAND SUBSIDENCE

The Third International Symposium on Land Subsidence will be held March 19-25, 1984, at the Giorgio Cini Foundation on the Island of San Giorgio Maggiore, Venice, Italy. Its sponsors include the International Association of Hydrological Sciences, the United Nations Educational, Scientific and Cultural Organization, and Consiglio Nazionale delle Ricerche. The technical program for the symposium will focus on land subsidence due primarily to man's activity in changing the natural regime, with concentration on fluid withdrawal. In addition to more than 150 oral presentations and poster papers, a two-day field trip to Ravenna and Modena has been organized. For additional information, contact: Arnold I. Johnson, 7474 Upham Court, Arvada, CO 80003, (303) 425-5610.

WANTED: SYMPOSIUM CONVENERS AT NATIONAL MEETINGS

Each year the Division is invited by GSA to sponsor a half-day symposium at the Annual Meeting. If you have a topic in hydrogeology of broad interest and are willing to put together a symposium of the caliber demanded by a national meeting, here is your opportunity. Please contact the Chairman or the Secretary-Treasurer of the Division for a copy of "Instructions to Symposia Organizers." Selections are made a year in advance by the Division Management Board at the Annual Meeting. GSA meetings are scheduled for:

1984 - Reno, November 5-8
1985 - Boston, October 14-17
1986 - San Antonio, November 10-13
1987 - Phoenix, October 26-29
1988 - Denver, October 31-November 3
(56) - St. Louis

If you are interested in proposing a symposium for the 1984 Reno Annual Meeting, the proposal should be submitted to the Chairman in time for the Division Management Board Meeting on November 1, 1983, in Indianapolis, Indiana. The deadline for receipt of symposium proposals from the Division to the Joint Technical Program Chairman is January 1, 1984.

1984 GSA ANNUAL MEETING AT RENO

The 1984 Annual Meeting will be held November 5-8 at Reno, Nevada. Terrance L. Katzer, USGS, Room 229, Federal Building, Carson City, NV 89701, (702) 882-1388 is the Joint Technical Program Chairman for the Hydrogeology Division. John Hess, Desert Research Institute, 1500 E. Tropicana Ave., Suite 201, Las Vegas, NV 89109, (702) 739-3411 is the Field Trip Chairman. Both chairmen welcome suggestions.

INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS

The International Association of Hydrogeologists (IAH) is a scientific and educational, nonprofit, international organization established to exchange hydrogeologic information and to advance the science. 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. A membership application can be obtained from Secretary-Treasurer Larry Doyle, 19579 Transhire Road, Gaithersburg, MD 20878. Dues (\$14.00 per year) should be sent with membership application. John Moore is Chairman. Dave Stephenson is Vice-Chairman.

As part of their centennial celebration, the University of Arizona at Tucson is hosting the second State-side IAH International Congress, January 7-12, 1985. The theme of the Congress is "Hydrology of Rocks of Low Permeability." Subjects covered will include flow in low permeability and fractured rocks, nature of fracture systems, and hydrogeology of rocks of low permeability in relation to radwaste isolation, fluid storage, and maintenance of desired environments. For additional information, contact E. S. Simpson, Department of Hydrology and Water Resources, University of Arizona, Tucson, AZ 85721.

PROFESSIONAL CERTIFICATION

AMERICAN INSTITUTE OF HYDROLOGY

The American Institute of Hydrology recently became the first nationwide organization to offer certification to competent professionals in all fields of hydrological sciences. Its members believe in the principles of responsible practice, professional conduct and public service.

Through its certification program it can provide evidence of expertise in hydrology or hydrogeology. Credentials of individuals desiring certification by AIH are thoroughly scrutinized by a panel of nationally recognized and respected scientists and professionals. This process involves review of the applicant's educational background, the quality and extent of his/her professional experience and of professional conduct, and a written examination of the applicant.

For additional information contact: Dr. A. A. Zaporozec, General Secretary, University of Wisconsin, 1815 University Ave., Madison, WI 53706.

HYDROGEOLOGY DIVISION

1983 Management Board

Chairman

Dave Stephenson, Walnut Creek, CA

First Vice-Chairman

George H. Davis, Silver Springs, MD

Second Vice-Chairman

Grover H. Emrich, Valley Forge, PA

Secretary-Treasurer

Phyllis M. Garman, Joelton, TN

Past-Chairman

Leonard A. Wood, Vienna, VA

Program Chairman and JTPC

Noel Krothe

Division Liaison to Council

Bruce Hanshaw

Section Meeting Representatives

| | |
|----------------------|----------------|
| Bruce L. Cutright | Cordilleran |
| Keros Cartwright | North Central |
| Frank J. Wobber | Northeastern |
| Jeffrey P. Sgambat | Northeastern |
| Joseph S. Rosenshein | Rocky Mountain |
| Arthur Mounslow | South Central |
| Paul R. Seaber | Southeastern |

1983 Committees

O.E. Meinzer Award Panel

Wayne Pettyjohn, Chairman

| | |
|-------------------|------------------|
| Richard L. Cooley | Frank W. Trainer |
| Mary P. Anderson | Bruce Hanshaw |

Birdsall Lecturer Committee

Patrick A. Domenico, Coordinator
Richard R. Parizek, Lecturer
Irwin Remson

Nominating Committee

Robert N. Farvolden, Chairman
Robert Bean
Gordon R. Stephenson

Committee on Hydrostratigraphic Units

Paul R. Seaber, Co-Chairman & Federal Representative
Keros Cartwright, Co-Chairman & State Agency Representative
I. Wendall Marine, Industrial Representative
Frank W. Schwartz, Canadian & Academic Representative
Rodolfo Del Arenal, Mexican & Academic Representative

Newsletter Co-Editors

| | |
|-------------------------|----------------------------|
| Thomas L. Holzer | Heidi Horten |
| USGS | Woodward-Clyde Consultants |
| Office of the Assistant | One Walnut Creek Center |
| Director for Research | 100 Pringle Avenue |
| 104 National Center | Walnut Creek, CA 94596 |
| Reston, VA 22092 | (415) 945-3000 |
| (703) 860-7488 | |