

# The Engineering Geologist



THE  
GEOLOGICAL SOCIETY  
OF AMERICA

NEWSLETTER OF THE ENGINEERING GEOLOGY DIVISION OF THE GEOLOGICAL SOCIETY OF AMERICA

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## NEARING 40 YEARS OLD

by David M. Cruden  
EGD Chairman

Ed Eckel's remarks in the January 1985 issue of **THE ENGINEERING GEOLOGIST** reminds us that the Division is approaching 40 years old, so this is an appropriate time to review how well we have met our stated purpose: "To improve and promote the science of geology as applied to engineering works..." (Article I(3) of the Division's By-laws).

This purpose distinguishes us from professional groups who administer entry to the profession and concern themselves with the ethical behavior of their members in order to protect the public and the geological community. Here in Alberta, only members of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta may call themselves geologists and practice geology.

Another requirement to practise in Alberta is familiarity with the state of the art in our field. In this, GSA in general, and the Engineering Geology Division in particular, is vital to our profession.

Engineering geology can encompass any part of the broad spectrum of the geological sciences that might illuminate engineering works. The engineering geologist needs to be open to all developments in geology that are potentially useful. The Annual Meetings of GSA and its Divisions expose us to the latest advances in a wide range of subdisciplines; **GEOLOGY** and the **GEOLOGICAL SOCIETY OF AMERICA BULLETIN** have a similar broad coverage. GSA is a "learned" society, a necessary complement to societies similar to Alberta's APEGG that permit us to practise. GSA helps to ensure that we continue to be able to practise the art and science of geology applied to engineering.

Within the Engineering Geology Division there are a number of opportunities to "promote the science." The Division recommends to the Society representatives on the U.S. National Committee on Tunneling Technology, the U.S. National Committee on Rock Mechanics, the U.S. Nuclear Regulatory Commission's Committee on Ground Failure Hazards, and the ASCE-GSA-AEG Joint Committee on Engineering Geology.

If you'd like to contribute to these committees send the Chairman of the Nominating Committee, Bob Schuster, a brief resume of your qualifications or write me a letter. We would also like to recognize those who have

"improved the science" with a Distinguished Practice Award -- your nominations should go to Dick Gray.

We are proud of the two series of publications that the Society publishes for the Division (**ENGINEERING GEOLOGY CASE HISTORIES** and **REVIEWS IN ENGINEERING GEOLOGY**). We think they both improve and promote the science.

The Division began **REVIEWS IN ENGINEERING GEOLOGY** for those "who do not have the opportunity of keeping closely in touch with relevant recent developments." Six volumes have been published; two more volumes, based on symposia sponsored by the Division, are being prepared.

The Division can sponsor one symposium at each annual meeting. Symposia topics are chosen by the Program Committee and are made based on the needs and interests of the Division's members. Planning of a symposium begins 18 months or so before it is held. Plans for "Engineering Geology and Public Policy" is already moving forward under Chris Mathewson's guidance for the San Antonio meeting. Bill Krinitzky would welcome your ideas on a topic for the Division's 40th birthday at Phoenix, and Tom Holzer is considering how we should celebrate the Society's Centennial in Denver.

The symposium format, which allows speakers to air their ideas before writing a final version of their paper, produces carefully considered **REVIEWS**. However, if you have just completed a 250-page literature summary for your employer and would like to share these insights with others, or if you have supervised a series of theses which have thrown new light on a fundamental problem of engineering geology, the **REVIEWS** series is suited for your long manuscript.

The **CASE HISTORIES** are "informal;" they are intended to describe the salient features of particular topics "...to show how geology affects the planning, design, construction and maintenance of structures." A volume may contain articles about a single large project or a series of similar projects, giving authors the necessary space to describe the vital technical details that they might be forced to omit from an article in a journal.

I believe that the range of opportunities "to improve and promote the science" that the Society and the Division provide members is unique in its width. I know that the EGD Management Board welcomes the participation of every member in the Division's efforts. We look forward to hearing from YOU.

## **AEG-EGD (GSA) COORDINATION COMMITTEE FORMED**

The Executive Council of the Engineering Geology Division of GSA and the Association of Engineering Geologists have formed an ad hoc joint cooperation and coordinating committee. The committee consists of the Vice President of AEG (Ted Maynard) and the Chairman-Elect of EGD (Chris Mathewson).

In a letter to Ted Maynard, AEG President Norm Tilford stated, "We have high hopes for some of the activities that [the committee] may undertake, such as joint sponsorship of symposia, short courses and technical sessions.... It may be possible to sponsor activities jointly that neither group would undertake individually."

## **FIFTH INTERNATIONAL SYMPOSIUM ON LANDSLIDES**

The Fifth International Symposium on Landslides will be held at the "Palais de Beaulieu," Congress and Exhibition Center, in Lausanne, Switzerland, from July 10 to 15, 1988. The symposium will take place under the auspices of the Committee on Landslides of the International Society for Soil Mechanics and Foundation Engineering and the Swiss Society for Soil and Rock Mechanics.

The main topics to be discussed in plenary sessions will be:

- Determination of the basic data required for slope stability studies -- tests and field instrumentation
- Analysis of instability phenomena and prediction of landslide behavior
- Stabilization of landslides
- Consideration of the risks of slope instability in the design of structures and land planning procedures
- Methodologies for the determination of the economic significance of instability phenomena

A workshop session will be reserved for the discussion of the analyses of case histories of particular landslides. The relevant data for the case histories will be provided to workshop participants prior to the workshop. A technical exhibition is planned, as well.

The first bulletin, to be published in April, 1986, will include a call for papers and more information about the symposium. Persons interested in the symposium should contact Christophe Bonnard, Secretary of the Vth International Symposium on Landslides, P.O. Box 83, CH-1015 LAUSANNE 15, Switzerland.

## **FRONTIERS IN GEOLOGY AND ORE DEPOSITS OF ARIZONA AND THE SOUTHWEST**

On March 20-21, 1986, the Arizona Geological Society will host a symposium entitled "Frontiers in Geology and Ore Deposits of Arizona and the Southwest," at the University of Arizona, in Tucson. Conference hotel headquarters will be the Holiday Inn/Broadway, also in Tucson. Fourteen pre- and postconference field trips are planned, including one on the "Geological Hazards of southern Arizona."

To receive additional information and registration material, send a request to AGS Conference, University Conference Department, 1717 F. Speedway, Suite 3201, Tucson, AZ 85719.

## **DISTINGUISHED PRACTICE AWARD: SHAILER S. PHILBRICK**

At its recent meeting in Orlando, the Engineering Geology Division of the GSA presented its Distinguished Practice Award for 1985 to Dr. Shailer S. Philbrick. The award is given annually to recognize an outstanding individual for his or her continuing contributions to the technical and/or professional stature of engineering geology.

Dr. Philbrick began his career in 1934 after completing educational work at De Pauw and Johns Hopkins Universities. After brief service with the U.S. Geological Survey and the Soil Conservation Service, he joined the Corps of Engineers where he remained until 1966. During this time, he contributed significantly to the planning, design, and construction of the flood control reservoirs, navigation locks and dams in the upper Ohio River basin. Since 1968 he has served as Consultant to the Advisory Committee on Reactor Safeguards, U.S. Nuclear Regulatory Commission.

Dr. Philbrick has shared his keen insight to geologic problems and extensive experience through his teaching and publications. His teaching record includes: Visiting Lecturer at Northwestern University in 1960; Visiting Professor in 1963-64 and Professor from 1966-72 at Cornell University. His publications have greatly contributed to the profession's understanding of engineering geology in sedimentary terrain, dam foundations, design of rock slopes, landslide investigations, and coal mine subsidence.

## **RECIPIENTS OF THE DISTINGUISHED PRACTICE AWARD**

First awarded in 1982, the Distinguished Practice Award of the Engineering Geology Division recognizes outstanding individuals for their continuing contributions to the technical and/or professional stature of engineering geology. Recipients of the annual award are:

- 1982 - Neil B. Steuer
- 1983 - Thomas W. Fluhr
- 1984 - Edwin B. Eckel
- 1985 - Shailer S. Philbrick

## **MERITORIOUS SERVICE AWARD: ROBERT H. FICKIES**

The Engineering Geology Division of the Geological Society of America presented its Meritorious Service Award to Robert H. Fickies of the New York Geological Survey. Bob received the award in recognition of his service as Editor of **THE ENGINEERING GEOLOGIST** from 1980 to 1984.

## **EGD MEMBERS ELECTED TO GSA FELLOWSHIP**

Engineering Geology Division members Walter A. Anderson and Robert H. Fakundiny were elected to Fellowship by Council action at the October 1985 meeting. Also elected to Fellowship was Robert H. Fickies, former editor of **THE ENGINEERING GEOLOGIST**.

## SIXTH INTERNATIONAL CONGRESS ON ROCK MECHANICS

The Sixth Congress of the International Society for Rock Mechanics will be held in Montreal, Canada, from August 30 to September 3, 1987. The Congress is being organized by the Canadian Rock Mechanics Association, and is hosted by the Canadian Institute of Mining and Metallurgy and sponsored by the Canadian Geotechnical Society. The Sixth Congress will provide an international forum for information exchange about rock mechanics applied to mining, civil engineering, and related fields.

For more information, contact: ISRM Congress 1987, 400 - 1130 Sherbrooke St. W., Montreal, Quebec, Canada H3A 2M8; telephone (514) 842-3461, telex 055-62344.

## GEOHERMAL PUBLICATIONS OFFERED

A graduate of Carleton College recently donated his personal library to the college. Some of the documents donated have been added to the libraries of Carleton College or the Minnesota Geological Survey, but a substantial number of items (perhaps 1,000) remain. Most of the reports are from U.S. Government labs, have been released within the last 15 years, are not easily obtained or are not well known, and deal with the geology, technology, and engineering of geothermal resources.

It is not practical to split the collection, and there is no catalog of the remaining items. All are available to anyone offering to pay shipping costs. Requests from educational institutions will be given preference. All documents are stored in eight 1-cubic-ft cardboard boxes. Contact John Splettscoesser, Minnesota Geological Survey, 2642 University Avenue, St. Paul, MN 55144, or Tim Vick, Dept. of Geology, Carleton College, Northfield, MN 55057.

## FACULTY POSITION COLORADO SCHOOL OF MINES

The Department of Geology and Geological Engineering is seeking candidates for a full-time faculty position in Geological Engineering. Rank and salary will be commensurate with experience. Duties will include undergraduate and graduate level teaching, the development of an active research program and supervision of graduate research in engineering geology, geotechnical engineering, hydrogeology, or a combination of these fields. Industrial, academic and/or government experience is desirable and Professional Engineering registration is preferred. The Ph.D. or equivalent is required. The Department of Geology and Geological Engineering has a 20 member faculty and offers an undergraduate geological engineering degree, and Master's and Ph.D. degrees in geological engineering and geology. Applications must be received by February 1, 1986. Send resumes to Dr. Gregory S. Holden, Acting Head, Department of Geology and Geological Engineering, Colorado School of Mines, Golden, CO 80401. The Colorado School of Mines is an Equal Opportunity and Affirmative Action Employer.

## NEW JOURNALS

Three new journals that may interest EGD members have come to my attention.

"Journal of Coastal Research" is published in collaboration with the International Union for Quaternary Research, International Geological Correlation Program, International Geographical Union, International Institute for Aerial Survey and Earth Sciences, International Post-Graduate Training Courses on Fundamental and Applied Quaternary Geology, and International Association for Biological Oceanography. The flyer advertising the quarterly lists contents as "professional reports, technical communications, state-of-the-art reviews, reports of meetings, news from societies, new citations in coastal topics, and book reviews." The interdisciplinary journal is geared for persons interested in coastal oceanography, geomorphology, geology, biology, marine climatology, environmental (resource) management, coastal engineering, archaeology, and remote sensing. Issues measure 17 x 25 cm, are perfect bound, and contain 120 to 144 pages with color inserts. Individual subscriptions are \$50.00 (students, 35\$; institutions, \$60). For more information, contact Journal of Coastal Research, P.O. Box 2473, Collee Station, Fort Lauderdale, FL 33303.

Next is "COGS Computer Contributions." Readers may remember my plug for COGS (Computer Oriented Geological Society) in an earlier issue. Volume 1, issue 1 contains 19 pages of material (plus 5 pages of advertising). One article describes COGS, one describes use of microcomputers for consulting and independent geologists, and two present case histories in petroleum exploration. An annual subscription to CCC is \$12 for COGS members and \$22 for non-members, plus \$5 for persons outside the U.S., Canada, and Mexico. (Be advised that dues in COGS were raised from \$5 to \$15 this year -- still a bargain). Contact: C.O.G.S., P.O. Box 1317, Denver, CO 80201-1317.

Finally, from the American Association of Petroleum Geologists comes "Geobyte." The Editors state, "Geobyte will focus on computer applications in exploration and development of petroleum and energy minerals. We will do this with a mix of technical content and general interest articles. Our readers are expected to range from expert computer users to the merely curious." The journal is a quarterly and costs \$18 per year. I received a free copy of the first issue simply by asking for one. Contact AAPG, 1444 S. Boulder Ave., Tulsa, OK 74101-0979, or call (918)584-2555 for details.

Ted Smith

## PEOPLE AND PLACES

Kerry J. Campbell, formerly of the Ventura Division of McClelland Engineers, has transferred to the firm's Houston Division as a consultant in marine engineering geology and geophysics.

Theodore C. Smith of the California Division of Mines and Geology received his Master's degree in Environmental Planning from the Consortium of the California State University. Ted's thesis is entitled, "Geohazards Information in General Plans: Problems and Recommendations."

## INTERNATIONAL TUNNELING ASSOCIATION PRAGUE, 1985

The International Tunneling Association held its eleventh annual meeting in Prague in September, 1985, in conjunction with the International Conference on Underground Structures in Urban Areas. The meeting was attended by representatives of 24 of the 33 member nations of the Association and 2 representatives of the International Associations.

Nine of the ten working groups held working sessions during the conference. Excerpts from a press release describing the activities of some of the working groups follow.

"General Approaches to the Design of Tunnels," H. Duddeck (FRG) -- The principal objective of this working group is the publication of recommendations on a consistent design approach for tunnels, gathering information on past experiences, the significance of ground probing and site investigation, models for structural analysis, in-situ monitoring, design criteria and structural design rules. These approaches may be different for tunnels in various materials.

"Maintenance and Repair of Underground Structures," N. Howard (U.K.) -- The text of a note, "Civil engineering records of underground structures," was substantially agreed upon. The subject of study for the coming year is long-term adverse effects of water penetration of underground structures.

"Contractual Sharing of Risks," J. Leeney (U.K.) -- The group proposed that the General Assembly accept and publish as recommendations: "Measurement Problems in Rock Tunnels," "The Role of the Mining Engineer," "Rights of Way and Permits," and "Owner-Furnished Materials, Plant and Equipment." The group proposed that "Protection of Adjacent Structures" be published, but not as a recommendation. Also discussed were "Extraordinary Water Problems" and "Alternative Tenders."

"Subsurface Planning," M.B. Barker -- This working group is dedicated to documenting the successful use of the subsurface for housing, institutional and commercial buildings, transportation, utilities, storage, and energy conservation. Eight papers were presented. During the 10 years that this group has existed, over 30 papers describing successful subsurface projects have been published.

"Catalogue of Tunnels," G. Fukuchi (Japan) -- Ten countries submitted their catalogues of tunnels at this meeting. Means of enhancing the value of the catalogue were discussed. The working group decided that the usefulness of the catalogue of tunnels under construction should be emphasized and the the format should be devised so as to be able to include more technical data.

"Cost-Benefits for Underground Urban Public Transportation," F. Blennemann (FRG) -- A report was approved which describes examples of the positive effects of underground urban transportation systems. Several papers on methods of cost-benefit analysis and factors were presented.

"Standardization," M. Hurpin (France) -- The group discussed standardization of circular tunnels bored with machines and shields, a technical glossary on tunnels excavated by

traditional methods, and possible future topics.

"Health and Safety in Work," N. Krige (South Africa) -- The group finished discussions concerning three chapters of "Guidelines for good tunneling practices": electrical installations, use of compressed air, and work under compressed air. Future topics for study include communications and transmissions, water problems, use of TBMs, and roadheaders.

The principal results of the activity of the working groups and the decisions of the General Assembly will be published in the ITA Journal "Advances in Tunneling Technology and Subsurface Use," by Pergamon Press.

The next annual meeting will be held in Firenze, Italy, in June 1986, in conjunction with the international congress on "Large Underground Openings," organized by the Italian Group of ITA. ITA member nations (which include the Canada, Mexico, and the U.S.) are requested to encourage their members to submit papers to be presented during the congress.

## 115TH AIME ANNUAL MEETING

The 115th Annual Meeting of the American Institute of Mining, Metallurgical and Petroleum Engineers will be held in New Orleans from March 2 to 6, 1986. The meeting features six symposia by the Society of Mining Engineers:

- Arbiter Symposium on Advances in Mineral Processing
- Application of Rock Characterization Techniques in Mine Design Symposium
- Design and Installation of Concentration and Dewatering Circuits Symposium
- Economics of Internationally Traded Minerals Symposium
- Engineering Health and Safety in Coal Mining Symposium
- Transportation Handling, Innovations, and Policy Implications Symposium

For more information about the program, contact: AIME, Society of Mining Engineers, Caller No. D, Littleton, CO 80127.

## ENGINEERING GEOLOGY AND SOILS ENGINEERING (REVISED DATES)

The 22nd (biennial) Symposium on Engineering Geology and Soils Engineering will be held on February 24, 25, and 26, 1986, in Boise, Idaho (not February 26-28 as stated in the last issue). The symposium will include papers in engineering geology, geotechnical engineering, and engineering aspects of groundwater. Both oral and poster sessions are scheduled. A proceedings volume will be published before the meeting.

Special sessions are planned on: waste disposal and toxic-waste cleanup operations in the soil and groundwater environment, and seismic considerations in geotechnical engineering.

For further information, contact Spencer H. Wood, Department of Geology and Geophysics, Boise State University, Boise, Idaho 83725, or call (208) 385-1631 (the phone number has changed since the last issue, too).

**CALL FOR SYMPOSIUM TOPICS FOR THE  
28TH INTERNATIONAL GEOLOGICAL CONGRESS**

The 28th International Geological Congress will be held in Washington, D.C., in July 1989. The last Congress was in Moscow in 1984; the previous one was in Paris in 1980. It is the premier Congress in the world for exchange of the latest information in the geological sciences; at least 5,000 people from most countries in the world are expected.

The scientific program will consist of symposia and regular sessions covering the latest developments in the basic and applied earth sciences. Interdisciplinary symposia will be featured because so many problems in earth science today require a battery of disciplines for their successful solution. The importance of the geological sciences in solving societal problems is becoming increasingly obvious; accordingly great emphasis will be placed on symposia dealing with resources, pollution, geologic hazards, and land use. Topics will be discussed both from a global standpoint and by use of case histories.

In order to assemble the best and most interesting program, the organizers of the Congress solicit your help in suggesting symposia topics. Topics should be of broad interest to a variety of geologists - therefore interdisciplinary topics within the earth sciences are especially welcome. Due to the limited time available, you will understand that all of the topics suggested cannot be presented, but space will be made for as many excellent suggestions as can be accommodated within the time available.

In addition to the regular scientific sessions and symposia to be held during the meetings, the Organizational Committee of the Congress is planning to hold pre- and post-meeting Workshops and Short Courses to consider research topics of interest. Workshops are intended to be gatherings where knowledge of new discoveries, new methods, and new insights will be shared among participants, all of whom are research workers in the area. In contrast, Short Courses are sessions in which specialists discuss in an instructional format the state of knowledge in an area of scientific and geotechnical interest in which recent progress has been significant. The organizers of the Congress solicit suggestions for topics for these planned activities. We further request that you suggest possible organizers for each Workshop and Short Course you mention; for logistic reasons we encourage you to nominate U.S. or at least North American scientists as organizers. Once again, we will strive to accommodate as many of the best ideas possible.

Please send any suggestions you have on symposia, workshops, short courses, or regarding organization of the Congress and its associated filed trips to:

Dr. Robin Brett  
Vice-President for Scientific Programs  
Bureau of the 28th International  
Geological Congress  
P.O. Box 1001  
Herndon, VA 22070.

Suggestions received before January 15, 1986, will receive better consideration than those received after that date.

**ANNOUNCEMENT AND CALL FOR PAPERS  
37TH ANNUAL HIGHWAY GEOLOGY SYMPOSIUM**

The Montana Department of Highways and the Montana Division of the Federal Highway Administration will jointly host the 37th Annual Highway Geology Symposium in Helena, Montana, from August 20 to 22, 1986.

Five technical sessions are planned and will be directed toward the design, construction and maintenance of transportation systems. The field trip will review geotechnical design and related construction problems in geologic environments along Interstate 15.

Papers are cordially invited. Accepted papers will be published in the proceedings of the conference. We request that abstracts be submitted by March 15, 1986. The complete paper will be published in the proceedings form author prepared camera ready copy due at/prior to the conference.

Helena is located halfway between Glacier and Yellowstone National Parks, offering an excellent vacation possibility.

For further information, contact:

Joseph E. Armstrong  
37 Annual Highway Geology Symposium  
Montana Department of Highways  
2701 Prospect Avenue  
Helena, MT 59620

**ARTICLES, ETC., NEEDED**

**THE ENGINEERING GEOLOGIST** needs articles, announcements of meetings in which engineering geologists would be interested, job opportunity bulletins, and similar material. No commercial messages, please. Be advised that the next (April 1986) issue should be mailed about April 1. Deadline for contributions to that issue is March 3 (submit your item early if possible). See the guidelines on the last page of this issue for suggestions and requirements. Send materials to:

Ted Smith  
California Division of Mines and Geology  
380 Civic Drive, Suite 100  
Pleasant Hill, CA 94523-1997  
(415) 671-4929

**SOME UPCOMING MEETINGS OF NOTE**

- Application of Rock Characterization Techniques in Mine Design (symposium), March 2-6, 1986, New Orleans, LA (Meetings Dept., Soc. of Mining Engineers, Caller No. D, Littleton, CO 80127, (303) 973-9550.
- Ninth Annual AMQUA Meeting, June 2-4, 1986, Champaign, Illinois (details last issue).
- 29th Annual Meeting of the Association of Engineering Geologists, October 7-11, 1986, San Francisco, CA.
- International Association of Engineering Geology Fifth International Congress, October 20-25, 1986, Buenos Aires, Argentina (details last issue).
- 1986 GSA Annual Meeting, Nov. 10-13, 1986, San Antonio, TX.
- Sixth International Congress on Rock Mechanics, August 30 to September 3, 1987, Montreal, Canada.



## SOFTWARE REVIEW: REFERENCE

Since I have a page to fill, I thought I might use it to tell you about a new computer program that I find extremely useful. The program is REFERENCE, by Sage Designs.

REFERENCE is intended for scientists, engineers, and other professionals who need to document nonfiction reports and papers. This program combines universal search and retrieval, note taking, and reference style conversion in one package. I have successfully used a pre-release version to prepare a bibliography containing in excess of 700 citations. As released, REFERENCE will search for citations on up to 26 separate disks without your having to re-enter the search specifications (you do have to swap the disks, however).

REFERENCE will search by first and last names of senior and junior authors, date of publication, and up to five keywords in the title, publisher's name, place of publication, and every note in the data file. The results of successful searches can be displayed on the computer, printed, or stored on disk.

REFERENCE is menu driven. A typical menu is:

```
*****
MASTER MENU

I = INPUT file name (Default = A:SAMPLE.INP)
O = OUTPUT file name (Default = A:LITCIT)
A = Add references to an existing INPUT file
B = Begin a new INPUT file
C = Choose output devices (Default = 4 )
D = Determine REFERENCE STYLES and RUN program
Q = Quit to MBASIC
X = Exit to C/PM
*****
```

The prompts are very clear. When a selection is made, a secondary menu continues the prompts. Typing "D" gets:

```
*****
Here are your choices of REFERENCE STYLES:

A = 6-line reference file same as the INPUT
B = Authors, Date, Title: Journal, v., p.
C = Authors (Date) Title: Journal
D = Authors, "Title," Journal, Date
E = Authors. Date. Title. Journal
F = Authors (first name first), Journal (Date)
U = USER OPTION
*****
```

Which do you choose?

```
*****
Choosing B (which, by the way, just happens to be the standard Geological Society of America format), gives us the four search options: (1) AUTHORS, DATE, and TITLE (ATD); (2) ATD plus the KEYWORDS; (3) ATD, KEYWORDS, plus the PUBLISHER or JOURNAL, and (4) all of these plus the NOTES. Notes, by the way, can be extensive -- it is possible to fill an entire disk with notes on a single reference if you so desire.
```

Next, we are asked whether we want an inclusive search (Item A OR item B), or an exclusive search (Item A AND item B). After indicating a choice, we see (one at a time) the prompts (my entries are in upper and lower case):

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*****
If you do not have an answer to any one of these, press <CR>.
```

```
SENIOR AUTHOR'S LAST NAME?      Borchardt
FIRST NAME OR INITIAL?
JUNIOR/SENIOR AUTHOR'S LAST NAME?
FIRST NAME OR INITIAL?
YEAR OF PUBLICATION?
FIRST KEYWORD OR PHRASE?  landslides
SECOND KEYWORD OR PHRASE?
```

(Once the last return is entered, REFERENCE begins searching the file).

Searching reference no. 1 ...  
Searching reference no. 2 ...

HERE IS THE REFERENCE YOU WANTED, NO. 2 :

Borchardt, G. A.  
1977  
Montmorillonite and other smectite minerals, in J. B. Dixon and S. B. Weed, eds., Minerals in soil environments  
Madison, WI: Soil Science Society of America  
p. 293-330

DISPLAY ONLY. Would you like to see this in the REFERENCE STYLE you have chosen?  
Y=Yes, N=No, S=Stop, A=All references displayed in REFERENCE STYLES only (Y)

This is what the OUTPUT file copy looks like:

Borchardt, G. A., 1977, Montmorillonite and other smectite minerals, in J. B. Dixon and S. B. Weed, eds., Minerals in soil environments: Soil Science Society of America, Madison, WI, p. 293-330.

ENTER 'Y' TO CONTINUE, 'S' TO STOP

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*****
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REFERENCE should be a useful addition, especially for a small consulting firm. If you want to know what landslide maps are available for Alameda County, simply enter "landslide" and "Alameda Co" as keywords of interest. Of course, you have to supply the data file. However, since data files can be edited with any editor (I use WordStar), you can usually convert existing bibliographies into the required format without much editing. The required format is:

```
Lastname, Firstname, etc.
Date
Title (up to 255 characters long)
Publisher data (several formats)
volume(number):page(s)
keywords (up to 255 characters)
notes (unlimited)
```

The search can be directed to write the citations to a disk. If the citations in the data file are in alphabetical order, then only simple editing and reformatting is needed for inclusion in a report or paper.

REFERENCE is available for CP/M computers, requires MBASIC, 64k of memory, and one or two disk drives, and a printer. REFERENCE is available for \$99.95 from Dynacomp, Inc., 1064 Gravel Road, Webster, NY 14580; phone (800) 828-6772 (orders only), (716) 671-6160 (9 to 5 E.S.T.), or (716) 671-6167 (24-hour order and message phone).

**SUGGESTIONS SOLICITED FOR GSA CENTENNIAL  
1988 EGD PROGRAM**

The Centennial commemorating the founding of the Geological Society of America will be especially celebrated at the Annual Meeting to be held in Denver, Colorado, October 31 to November 3, 1988. The Society is requesting that the divisions organize special field trips and symposia that will make evident the great strides made in the earth sciences during the last 100 years. The location of the meeting (in Denver) emphasizes the important role that earth science has played in the development of the central part of the United States.

I solicit your ideas for our division's centennial program because the Management Board will formulate its plans at the next Annual Meeting in San Antonio, Texas. Please give some thought to topics that you would like to learn about at Denver and that demonstrate the contributions made to the Society by engineering geologists over the last 100 years. Let's demonstrate, by example, the contributions made by and vitality of engineering geologists. The winning suggestor receives a California Lottery ticket. Please submit your suggestions to: Thomas L. Holzer, U.S. Geological Survey, MS 977, 345 Middlefield Road, Menlo Park, CA 94025, (415) 323-8111 ext. 2760.

**EGD AWARDS NOMINATION FORM:**  
(photocopies are acceptable)

----- (CUT ALONG DOTTED LINE) -----

I nominate the following for the Engineering Geology Division's 1986 Awards:

**Distinguished Practice Award**

\_\_\_\_\_  
(Include a resume and a brief statement describing the technical and/or professional contributions which form the basis for the nomination).

**Meritorious Service Award**

\_\_\_\_\_  
(Include a written statement describing the outstanding service provided by the nominee).

Submitted by: \_\_\_\_\_

Date submitted: \_\_\_\_\_

**NOTE:** All nominations must be received by June 1, 1986.

Send this form along with the required materials to:

Richard E. Gray  
GAI Consultants, Inc.  
570 Beatty Road  
Monroeville, PA 15146

**NOMINATIONS SOUGHT FOR  
ENGINEERING GEOLOGY DIVISION AWARDS**

The Engineering Geology Division is seeking nominations for its Meritorious Service Awards and Distinguished Practice Award.

Meritorious Service Awards are given to recognize outstanding service to the Engineering Geology Division. Only members of the Division are eligible for these awards. Each nomination must be accompanied by a brief written statement describing the outstanding service provided by the nominee.

The Distinguished Practice Award recognizes outstanding individuals for their contributions to the technical and/or professional stature of engineering geology. A nominee need not be a member of the Engineering Geology Division, but must have made a major contribution to engineering geology in North America. Nominations should include the nominee's resume and a brief written statement describing the technical and/or professional contributions that form the basis of the nomination.

Please use a copy of the form that appears on this page for nominating individuals for these awards.

**SYMPOSIUM ON LARGE ROCK CAVERNS**

The Symposium on Large Rock Caverns will be held at Helsinki University of Technology in Otaniemi, Espoo, from August 25-28, 1985. For information, contact Dr. Kari Saari, Secretary General, International Symposium on Large Rock Caverns, Lehtisaarentie 2, 00340 HELSINKI FINLAND.

**GUIDELINES FOR SUBMITTING ITEMS FOR  
THE ENGINEERING GEOLOGIST**

All Items

Please include your name, address, and phone number with all items submitted. Items should be sent to:

Ted Smith  
California Division of Mines and Geology  
380 Civic Drive, Suite 100  
Pleasant Hill, CA 94523

Items On Computer Disk

Submittals on computer disk are particularly encouraged. I have access to computers capable of reading the following formats (5 1/2 inch diskettes unless noted otherwise): IBM PC, Osborne, Kaypro II, Morrow MD2, TRS-80 with Omikron CP/m, TRS-80 III w/Memory Merchant, TRS-80 IV with CP/m+, Cromemco w/Int'l Term, Cromemco CDOS SSSD & SSDD, Systel II, Heath Z100, Heath w/Magnolia CP/m, TI Professional CP/m-86, Actrix, Lobo Max-80, Xerox 820 I SD, Xerox 820 II DD, Zenith VT180, DEC VT180, NEC PC-8001A, and LNW-80. Wang word-processor (8") disks can be accommodated.

Include a note indicating which format you use. Please strip all print commands, underlining, soft hyphens, or other special characters from the file (soft carriage returns are okay). Please also include a hard (paper) copy of the item with the disk. You may indicate any underlining or other special printing you desire on the hard copy. The hard copy will also permit me to "recover" any

material lost during reformatting or in the mail (magnetic fields might cause problems). I will return the disk to you after I have copied it. Be sure to include an address and a phone number where you can be reached should questions or problems arise.

By Modem

You may upload (300 or 1200 baud) over the phone (especially encouraged if the system you have is not one of those listed above). Arrangements can be made by contacting me at 415-671-4929 (by voice first, please, since I don't speak binary code). Again, include your address and phone number at the beginning or end of your document. If requested, I will try to provide detailed written instructions.

On Paper

If computers are not your bag, please adhere to the following guidelines.

- Double space all items submitted.
- Hand-written materials are okay ONLY IF I CAN READ YOUR HANDWRITING.
- Margins should be ample (about one inch all around is recommended).
- Citations and bibliographic entries should be in standard GSA format.
- Minor corrections may be indicated on your manuscript since all items submitted will be retyped.
- Please submit your item early. I may not be able to accommodate a "last minute rush."

**DEADLINE FOR NEXT ISSUE: MARCH 3, 1986**



**THE  
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