



GSA news & information

VOLUME 4, NUMBER 5

G.S.A. ARCHIVES

MAY 1982

Halfway mark is in sight

D-NAG campaign nears \$2 million mark

The halfway mark in the GSA Foundation's drive to raise more than \$4 million dollars for GSA's Centennial project, the Decade of North American Geology, will have been reached by the time this issue of *GSA News & Information* is being read by the membership.

Led by early commitments from Exxon and Shell of \$250,000 each, the total raised has reached \$1.8 million dollars. Atlantic Richfield, through its foundation, made a cash gift of \$200,000, and Sohio and Kennecott combined for a total pledge of \$180,000. Cities Service, Getty, Kerr McGee, and Phillips each committed up to \$100,000 for a total corporate figure of \$1,255,000. Thirteen of the twenty-one major resource companies are still considering \$2,250,000 in proposals made to them by the Foundation following visits by former GSA President Howard Gould, Centennial Science Program Coordinator Pete Palmer, and GSA Foundation President Dwight Roberts.

Individual major gifts totaling \$450,000 have been received from Caswell Silver, Chairman of the GSA Foundation's Board of Trustees and of the Board of Sundance Oil Company, and Paul Hoovler, President of Chaparral Resources.

Prior to the formal campaign, a vitally important group of interested GSA members made gifts totaling

\$49,000 to initiate the drive. These pacesetters are James Boyd, Michel Halbouty, Robert Fuchs, Howard Gould, John Frye, William Heroy, Myron Armon, Robert Boyer, William Bradley, William Dickinson, Robert Ginsburg, George Grow, Frank Kottowski, Helen Loeblich, John Lucke, Thomas Nolan, Dallas Peck, Raymond Price, Leon Silver, Jack Simon, Larry Sloss, James Thompson, Peter Vail, Robert E. Fuller Estate, and the University of Washington.

Thanks to the good work of Councilor Haydn Murray, the E. J. Grassman Trust and the Union Foundation each made grants of \$10,000.

John Wheeler and GSA President Digby McLaren have established a goal of \$300,000 for Canada's D-NAG products. Gifts from corporations and individuals in Canada will be made to the Canadian Geological Foundation and will supplement the underwriting of this project by the Geological Survey of Canada.

Centennial gifts totaling \$15,112.97 were received from 93 GSA members responding to the Foundation's annual giving campaign last fall.

Continuing efforts will be made to obtain a greater response from GSA members and to broaden solicitation of individuals and energy-related businesses.

UPDATE

SECTION MEETINGS FOR 1983 TENTATIVE DATES

South-Central Texas A&M University College Station, Texas	March 3-4, 1983
Southeastern Florida State University Tallahassee, Florida	March 16-18, 1983
Northeastern Concord Hotel Monticello, New York	March 23-25, 1983
North-Central Wisconsin Center Madison, Wisconsin	April 28-29, 1983
Cordilleran, Rocky Mountain Sections (Joint Meeting) Salt Palace Salt Lake City, Utah	May 2-4, 1983

First Annual Conference on Exploration for Metallic Mineral Deposits in the Southeast States

The first Annual Conference on Exploration for Metallic Mineral Deposits in the Southeast will be held September 28 and 29, 1982, at the University of Georgia. Conveners are Gilles Allard and Robert H. Carpenter of the geology department. The conference is an invitational conference with speakers discussing the geology and mineral deposits of Virginia, North Carolina, South Carolina, Tennessee, Alabama, and Georgia.

The conference will highlight the new studies in stratigraphy, structure, and petrology and their importance on the exploration potential of the southeast.

One-day field trip to the Slate Belt and to the Piedmont will be available.

Announcing 27th Annual Midwest Ground-Water Conference

A call for papers has been issued for the 27th Annual Midwest Ground-Water Conference, 21-22 October 1982, Iowa City, Iowa. For particulars, write the Iowa Geological Survey, 123 N. Capitol St., Iowa City, IA 52242.

Necrology

Notice has been received of the following deaths: J. Eric Bucher, Oklahoma City, Oklahoma; Allen Stuart Cary, Bothell, Washington; J. Fred Smith, Denver, Colorado.

Memorials Volume XII now available

Memorials Volume XII is now available (\$10.00), containing the following memorials:

Charles Ivan Alexander, Jr., 1902-1980, by Robert A. Sheldon
Margaret Fuller Boos, 1892-1978, by Virginia Byers and Doris Osterwald

Ian Campbell, 1899-1978, by Richard H. Jahns
Lon D. Cartwright, Jr., 1902-1980, by Paul E. Daugherty
Carl Wilhelm Correns, 1893-1980, by Hildegard and Arnulf Muan

Morgan J. Davis, 1898-1979, by Wallace E. Pratt and Dean A. McGee

Milton B. Dobrin, 1915-1980, by Samuel J. Allen
Victor Dolmage, 1887-1980, by J. W. Stewart
Alden S. Donnelly, 1907-1978, by David M. Evans
Eugene Rudy Eller, 1904-1976, by Daniel B. Sass
Robert Kendall Fahnstock, 1932-1980, by Parker E. Calkin and Ernest H. Muller

Harry M. Fridley, 1893-1980, by John C. Ludlum
James Edward Gill, 1901-1980, by P. R. Eakins
James Gilluly, 1896-1980, by J. Fred Smith, Jr.
Robert Joseph Hackman, 1923-1980, by John S. Pomeroy
Arthur Lloyd Howland, 1908-1978, by E. C. Dapples
Bernhard Kummel, 1919-1980, by Norman D. Newell
John Everts Lamar, 1897-1979, by H. B. Willman
Theodore August Link, 1897-1980, by W.D.C. Mackenzie
Milford Seymour Lougheed, 1914-1980, by David B. Mackenzie

John Charles Maher, 1914-1980, by Robert J. Lantz
John Beaver Mertie, Jr., 1888-1980, by William C. Overstreet and Robert M. Chapman

Thomas D. Murphy, 1905-1980, by Stanley J. Lefond
Philip Moore Orville, 1930-1980, by H. J. Greenwood
Paul Holland Price, 1898-1980, by Robert B. Irwin
Percival Robertson, 1889-1980, by Frederick C. Marshall
Robert Ingersoll Roth, 1899-1979, by John W. Skinner
Henry H. R. Sharkey, 1916-1980, by Jerry R. Kyle
John Dodsworth Weaver, 1914-1979, by M. J. Roobol and A. L. Smith

Caleb Wroe Wolfe, 1908-1980, by Arthur H. Brownlow and Paul C. Lyons

Books may be purchased for \$10.00 through the Publication Sales Department, GSA P.O. Box 9140, Boulder, CO 80301.

GSA News & Information

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Prepared from contributions from the staff and membership by John C. Frye, Executive Director; James R. Clark, Production and Advertising Sales Manager; June Thomas and Ann H. Fogel, Production Assistants.



CENTENNIAL NEWS

Appalachian/Ouachita synthesis volume organized

The first of the D-NAG workshops on individual synthesis volumes for *The Geology of North America* was held in January at Blacksburg, Virginia, and concerned the planning and organization of the volume on the Appalachian and Ouachita regions of the United States. A tentative outline with the names of

the chapter organizers is given below. The chapter organizers will be contacting other individual contributors as the synthesis progresses. All manuscripts for this volume (and accompanying synthesis maps) are to be in the hands of the editors, R. D. Hatcher, Jr., G. W. Viele, and W. A. Thomas by early 1984.

The Appalachian/Ouachita Regions: U.S.
R. D. Hatcher, Jr., G. W. Viele, W. A. Thomas

I. The Appalachian Region

- A. Introduction — R. D. Hatcher, Jr.
- B. Time-slice Analysis
 - 1. Pre-orogenic terranes
 - a. North American Margin — L. M. Hall, D. W. Rankin, J. F. Read
 - b. Avalon terrane — D. T. Secor, Lynn Glover III
 - 2. Taconic Orogen — A. K. Sinha, A. A. Drake
 - 3. Acadian Orogen — P. H. Osberg, D. R. Wones, Peter Robinson, J. F. Tull
 - 4. Alleghanian Orogen — P. A. Geiser, A. W. Snoke, W. A. Thomas
 - 5. Post-Paleozoic Activity — Warren Manspeizer
- C. Regional Geology/Geophysics
 - 1. Faunal Provinces — R. B. Neuman
 - 2. Crustal Characteristics — J. K. Costain
 - 3. Thermal History — G. W. Fisher
 - 4. Uplift History — R. D. Dallmeyer
 - 5. Subsurface extent — W. A. Thomas
 - 6. Geomorphology — J. T. Hack
- D. Economic Geology
 - 1. Mineral Resources — P. G. Feiss
 - 2. Hydrocarbons — L. D. Harris, Wallace Dewitt, Jr.
- E. Tectonic Synthesis — R. D. Hatcher, Jr.

II. The Appalachian/Ouachita Connection

W. A. Thomas

III. The Ouachita Region

- A. Introduction — G. W. Viele
- B. Regional Stratigraphy
 - 1. Regional stratigraphic correlations — R. L. Ethington
 - 2. Pre-orogenic strata — D. R. Lowe
 - 3. Syn- and post-orogenic strata — R. C. Morris
- C. Tectonics
 - 1. Ouachita Thrust Belt and Arkoma Basin — Kaspar Arbenz
 - 2. Benton and Broken Bow Uplifts — G. W. Viele, K. K. Nielsen, Jay Zimmerman, Jr.
 - 3. Louisiana-Texas Subsurface — R. L. Nicholas
 - 4. Marathon-Solitario Region — W. R. Muehlberger
 - 5. Foreland Structures — R. E. Denison
 - 6. Regional Geophysics — P. L. Lyons
- D. Tectonic Synthesis — G. W. Viele, Kaspar Arbenz, W. A. Thomas
- E. Economic Geology
 - 1. Mineral Resources — C. G. Stone
 - 2. Hydrocarbons — P. A. Chenoweth
- F. Epilogue — G. W. Viele

"Perspectives . . ." imminent

"Perspectives in regional geological synthesis: Planning for *The Geology of North America*," should be published in June. It will be a paperback, approximately 150-page book, price under \$10. This book consists of 20 chapters which present annotated outlines or narrative discussions of the proposed organization of information for each of the 20 volumes of regional geology that will be a part of *The Geology of North America*. These chapters have served, or will serve, as a focus for discussion at D-NAG workshops

for each individual volume. They also provide the rest of the profession with an overview of the direction that each synthesis will be taking and one more chance to interact in the planning process so that the best possible synthesis can be obtained. The low price is made possible by a grant for production costs from the GSA Foundation. Your support of the GSA Foundation will permit continued good buys for other components of the D-NAG project.

A Call for Nominations for the 1983 Penrose and Day Medals

FEBRUARY 1st has been established as the deadline for receipt at headquarters of nominations for the Penrose and Day Medals. (It is also the deadline for receipt of nominations for Honorary Fellowship and the National Medal of Science, but a different form will be used for those awards, a copy of which will appear in a later issue of *GSA News & Information*.)

To ensure thorough consideration by the respective subcommittee, you are asked to submit for each candidate a brief biographical sketch, such as used in *American Men and Women of Science*, a summary of the candidate's scientific contributions to geology, and a selected bibliography of no more than 20 titles. In choosing candidates, scientific achievements should be considered rather than contributions in administration and service.

It is requested that the accompanying form be used to submit the names of candidates for the Penrose and Day Medals. Completed forms should be sent to the Executive Director at headquarters.

PLEASE NOTE: In November 1981, Council established the policy that the names of unsuccessful candidates proposed to Council will remain for consideration by the respective subcommittee for three years (unless the candidate was again selected as one of the three sent to Council, at which time the three-year eligibility period would recommence). The nominators of such candidates will receive a communication from headquarters inviting them to renominate their candidates by letter and to update their documentation each year that their candidates remain on the eligible list.

PLEASE USE THIS FORM



A brief description of the Penrose and Day Medal awards follows:

PENROSE MEDAL AWARD

The Penrose Medal was established in 1927 by Dr. R.A.F. Penrose, Jr., to be awarded in recognition of eminent research in pure geology, for outstanding original contributions or achievements which mark a major advance in the science of geology. The award is to be made only at such time as the Council may decide. Nominees are to be selected by the Council, may or may not be members of the Society, and may be from any nation or any race of people. The sole object of Dr. Penrose in making the gift was to encourage original work in purely scientific geology.

DAY MEDAL AWARD

The Day Medal was established in 1948 by Professor Arthur L. Day to be awarded annually, or less frequently, at the discretion of the Council, for outstanding distinction in contributing to geologic knowledge through the application of physics and chemistry to the solution of geologic problems. It was the intent of Professor Day to recognize outstanding achievement and inspire further effort, rather than to reward a distinguished career.

WANTED: CONTRIBUTIONS TO "LETTERS TO THE EDITOR" COLUMN

In an effort to provide an additional forum of communication regarding items of general interest to GSA members, the Committee on Membership initiated a "Letters to the Editor" column in *GSA News & Information* over a year ago. The following questions are composites of questions asked by members when they submitted their 1982 dues:

1. Why are GSA members required to take both the *Bulletin* and *Geology* when paying dues?

Council's decision to require all members to receive the Society's two journals in 1982 will allow GSA to increase substantially its pressruns of both journals, thereby lowering the unit costs markedly. The plan provides an obvious bargain for the membership, compared to today's typical membership and subscription prices, and at the same time it provides for a significant increase in the distribution of the science contained in our journals.

2. Is there a reduced dues rate for married couples?

Married couples who are both GSA dues-paying members will be allowed a reduction in 1982 dues under a policy adopted by the Council at its November meeting in Cincinnati. Such couples will pay \$48 for the first member and \$22 for the second. They will receive a single subscription to *Geology, Bulletin*,

and *GSA News & Information* but both members will continue to receive ballots and other miscellaneous mailings.

Married couples who have already paid the full dues for both members are entitled to a refund and should notify the Membership Department (GSA headquarters) as soon as possible.

3. Is there an exempt member status?

Fellows and Members who have reached the age of 65 years and have paid dues for 25 years may become exempt from dues after specifically requesting exemption from payment of further dues. Fellows and Members who have reached the age of 70 years and have paid annual dues for 30 years automatically become exempt from dues. Each Fellow or Member in any of these exempt categories shall be entitled to all the privileges of membership.

We invite your contributions to this column. If you have a question or concern that would be of interest to the membership, please write to Editor, *GSA News & Information*, Geological Society of America, P.O. Box 9140, Boulder, CO 80301.

THE GEOLOGICAL SOCIETY OF AMERICA

Nomination for Penrose Medal or Day Medal
(please circle one)

DEADLINE: Please return this form to headquarters by February 1.

NAME OF CANDIDATE:

ADDRESS:

BIOGRAPHICAL INFORMATION: (suggested sources)

American Men and Women of Science

Who's Who in America

GSA Service Record (obtainable from headquarters)

Other

SUMMARY OF SCIENTIFIC CONTRIBUTIONS TO GEOLOGY:

(not more than 200 words)

(over)

SELECTED BIBLIOGRAPHY:
(no more than 20 titles)

The nomination must be supported by the signatures of five GSA Fellows or Members.

1. (Name of person making the nomination) _____
Address: _____
Date: _____ Signature: _____
2. _____
3. _____
4. _____
5. _____
6. _____

(Signed supporting letters from five GSA Fellows or Members may be attached to this form in lieu of the above signatures.)

RETURN TO: Executive Director
The Geological Society of America
P.O. Box 9140
Boulder, CO 80301
(303) 447-2020

DEADLINE: Please return this form to headquarters by February 1.

Annual Report for 1981—Committee on Investments

To the Council and Membership of the Geological Society of America:

The purposes of the Committee on Investments are to advise the Council on investments of the Society, to act for the Council in decisions on purchase or sale of securities, and to make recommendations concerning overall policy and types of investment. The chairman of this committee is an ex officio member of the Committee on the Budget, whose chairman is an ex officio member of the Committee on Investments.

As shown in Table I, the portfolio appreciated in value by 2 percent during 1981 and stood at \$9,031,000 at year end after withdrawals of \$800,000 during the year for expenditure by the Society. The distribution between managers and types of asset is shown in Table II.

Three firms select the specific securities for purchase and sale in their respective portions of the Society's portfolio. Of the three, Irving Trust Company has the greatest seniority with the Society. It has managed only fixed-income investments and cash of the Society during 1981 and will continue to do so in 1982. This portfolio emphasizes short-term (43 percent under 5-year maturity) and intermediate-term (47 percent from 5- to 15-year maturity) bonds, with an average maturity of 6 years. Forty-three percent of the values is in U.S. Treasury and Agencies securities, 19 percent in Corporate and Foreign AAAs, and 24 percent in Corporate and Foreign AAs. As indicated in Table II, the holdings in Irving Trust at the end of 1981 totaled \$5,005,000. Income for the year came to \$564,000, up \$111,000 from 1980. Estimated income in 1982 is \$662,000. Traditionally, the Society's operations have been partially funded out of the accumulated earnings from investments held in the Irving Trust Account. For the year 1981, a total of \$800,000 was budgeted and withdrawn as shown in Table I for the following purposes:

1. Advance to the GSA Foundation (cash loan) of \$200,000
2. Advance to GSA Centennial Program of \$145,000
3. GSA general operations—\$455,000

The firm of Reich and Tang, Inc., was first employed as an investment adviser to GSA in 1977. It trades in common stocks, but not in bonds, and operates a money-market fund. Its approach is to seek out and invest in specific companies with growth or asset potential that is not fully reflected in the current market price. It does not specialize in an industry group, but has tended to favor firms engaged in conversion—in manufacturing or services—rather than in raw materials. At year end the largest ten holdings in this segment were valued at about 38 percent of the portfolio, whose market value was \$3,045,000. The portfolio increased in value by 2.4 percent during 1981, compared to a loss in the Standard and Poor 500's average decline of 5 percent. Dividends from the shares held are reinvested.

William G. Campbell and Company was employed at the beginning of 1981. Campbell invests mainly in high-technology companies and also in growth-oriented and energy situations. These characteristically have high rates of growth in sales and earnings, reinvest profits instead of paying dividends, have a high price-earnings ratio, and their shares ex-

hibit wider swings in market price than the broad averages. The objective is capital appreciation rather than high dividends. At year end 31 percent of the market value of the portfolio was in a group of science and technology companies; the next largest, 28 percent, was in consumer and growth-oriented firms. During 1981 the market value of the portfolio declined 9 percent to \$910,000 at year end. Dividends are reinvested.

The Special Investment Fund, established for investment in small-to-medium size natural resource companies, is managed by a subcommittee of the Committee on Investments consisting of Robert L. Fuchs (chairman), John E. Kilkenny, Robert E. Folinsbee, Anthony Reso, Caswell Silver, and James A. Anderson. The market value of this fund, reflecting the malaise in the oil industry, declined from \$100,000 to \$71,000 during the year.

Respectfully submitted,
C. H. Burgess, Chairman; James A. Anderson,
Robert L. Fuchs, William B. Heroy, Jr., Donald A. Parks,
Jack A. Simon, Thomas W. Stern

TABLE I
GSA INVESTMENTS
(\$000)

Market value at end of:	Cash transferred to Boulder:	Total—including transfers:	Year-to-year results:
1979 — 8,610 56% equities	339	8,949	+11.8% increase
1980 — 9,633 58% equities	600	10,233	+18.9% increase
1981 — 9,031 38.7% equities	800	9,831	+ 2% increase

TABLE II
GSA INVESTMENTS
12-31-81
(\$000)

	MANAGER:				TOTALS
	Irving Trust	Reich & Tang	W. G. Campbell	Special Fund Committee	
Cash	2	18 0.6%			20 0.2%
Money market funds	1,140 23%	528 17.4%			1,668 18.5%
Fixed income	3,851 77%				3,851 42.6%
Equities	12	2,499 82%	910 100%	71 100%	3,492 38.7%
Total	5,005 100%	3,045 100%	910 100%	71 100%	9,031 100%
%	55.4	33.7	10.1	0.8	100.0%

The Geological Society of America—Annual Report for 1981



THE GEOLOGICAL SOCIETY OF AMERICA
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The Avis Rent A Car System offers special discounts on car rentals to all GSA members.

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Europe, Asia

Normal Time & Mileage Rates 10%

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THE GEOLOGICAL SOCIETY OF AMERICA

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Calendar of Penrose Conferences

The conferences are normally scheduled for five days. The registration fees include food and lodging. Those desiring information on any of the conferences are requested to contact the convener(s) at the addresses and telephone numbers given. For your convenience, an application form accompanies this calendar.

May 23-28, 1982
HYDRODYNAMICS AND GEOCHEMISTRY OF ORE GENERATION IN SEDIMENTARY ENVIRONMENTS
 Millstone Lodge, Gravois Mills, MO 65037
Conveners: William C. Kelly, (313) 764-1435, Department of Geological Sciences, University of Michigan, Ann Arbor, MI 48109; John M. Sharp, (314) 882-6673 or 882-6785, Department of Geology, University of Missouri, Columbia, MO 65211; Donald E. White, (415) 323-8111, USGS, 345 Middlefield Road, Menlo Park, CA 94025. Registration fee: \$390.

May 23-28, 1982
TECTONIC HISTORY OF THE OUACHITA OROGEN
 DeGray State Park Lodge, Arkadelphia, AR 71923
Conveners: William A. Thomas, (205) 348-5095, Department of Geology and Geography, University of Alabama, P.O. Box 1945, University, AL 35486; George W. Viele, (314) 882-6785, Department of Geology, University of Missouri, Columbia, MO 65211. Registration fee: \$375.

August 8-13, 1982
ORIGIN OF FLUIDS AND METALS IN PORPHYRY AND EPITHERMAL MINERAL DEPOSITS
 Holiday Inn, Dillon, CO 80435
Conveners: P. James LeAnderson, (303) 279-0300, Department of Geology, Colorado School of Mines, Golden, CO 80401; Arthur A. Bookstrom, (303) 234-9020, Climax Molybdenum Company, 13949 West Colfax Avenue, Golden, CO 80401; Steve Lundington, (703) 860-6911, USGS, 959 National Center, Reston, VA 22092. Registration fee: not set at press time.

August 15-29, 1982
MODELS OF DIAGENESIS IN CLASTIC RESERVOIRS
 Kona Surf Hotel, Kailua Kona, HI 96740
Conveners: James R. Wood, Jr., (213) 694-7396, Chevron Oil Field Research Company, 3282 Beach Boulevard, LaHabra, CA 90631; James R. Boles, (805) 961-3471, Department of Geological Sciences, University of California, Goleta, CA 93106; Ian E. Hutcheon, (213) 694-7396, c/o James R. Wood, Jr., Chevron Oil Field Research Company, 3283 Beach Boulevard, LaHabra, CA 90631. Registration fee: \$500.

August 22-28, 1982
LARAMIDE DEFORMATION OF THE ROCKY MOUNTAIN FORELAND
 Rock Creek Mine Lodge, Red Lodge, MT 59068
Conveners: David R. Lageson, (406) 994-3331, Department of Earth Sciences, Montana State University, Bozeman, MT 59717; Gary D. Couples, (303) 830-5585, AMOCO Production Company, 1670 Broadway, Denver, CO 80202. Registration fee: \$400.

September 7-13, 1982
THE SONOMA OROGENY AND PERMIAN TO TRIASSIC TECTONISM IN WESTERN NORTH AMERICA
 Scott Shady Court Motel, Winnemucca, NV 89445
Conveners: John H. Stewart, (415) 323-8111, USGS, 345 Middlefield Road, Menlo Park, CA 94025; Hubert Gabrielse, (604) 666-2958, Geological Survey of Canada, 100 West Pender Street, Vancouver, BC V6B 1R8; Walter S. Snyder, (918) 661-6600, Research and Development, Phillips Petroleum Company, Bartlesville, OK 74004. Registration fee: not set at press time.

Application for participation in a Penrose Conference

Title of Penrose Conference _____

Your name and title _____

Organization _____

Mailing address _____

Street or P.O. Box _____

City and State _____

Zip Code _____

Telephone number _____

Area Code _____

Number _____

Field of interest _____

Please state briefly what your interest and experience have been with regard to the conference topic.

PENROSE CONFERENCE GUIDELINES

PURPOSE

The Penrose Conferences were established by the Geological Society of America in 1969 as an important effort in its promotion of the Earth sciences. The conferences provide the opportunity for exchange of current information and exciting ideas pertaining to the science of geology and related fields. They are intended to stimulate and enhance individual and collaborative research and to accelerate the advance of the science by the interactions and development of new ideas. The conferences consist of a critical mass of active scientists from the Society, the national and international science communities, and students, sequestered in an attractive meeting place for several days of focused discussion. The participants do not seek simply to resolve technical controversies; their objectives are to provide stimulus and excitement for their field, to air new ideas and develop new associations, and to provoke new research on important questions.

SUBJECT/TOPIC

Ideal subjects for conferences are those Earth science topics for which recent work suggests a potential for further significant advances in the near future. Each conference subject should be under current investigation and active discussion by a number of able researchers in the field and/or in the laboratory. Topics should be broad enough so that a range of specialists can discuss them from several points of view, but not so broad that a lack of communication can develop.

CONVENERS

Conveners must have technical competence and be knowledgeable about current activities in the specialized fields that are to be represented at a conference. Responsibility for organizing a conference *must be shared by at least two conveners*, each of whom can draw upon his or her own experience and expertise in developing a well-integrated, effective conference program that will foster communication and stimulate research progress among experts in diverse but related fields. At least one of the conveners must be a member of GSA.

SIZE/TIME

It is essential that the conferences be informal. Groups should be small enough that personal discussion among all participants is encouraged, and large enough to provide diversity and depth. As an empirical rule, the maximum number for success is about 80. Normally, the minimum number required to convene a conference is 50.

Typically, conferences in the past have lasted five days. Participants are expected to attend the entire conference, and conferences which extend more than five days tend to force premature departure.

A period of approximately nine to twelve months between the date of approval by the Penrose Conference

Committee and the date of the conference is normally required. In no case should there be less than six months from the time of conference announcement in *GSA News & Information* and *Geotimes* and the conference dates.

Care should be taken to avoid scheduling conferences at the same time as other scientific meetings, especially other GSA meetings, including other Penrose Conferences. Conveners should check the calendar of events in *Geotimes* before proposing a date. A schedule of future approved and recommended Penrose Conferences will be provided prospective conveners with proposal-writing guidelines.

LOCATION

Essential qualities of a good site are that it be removed from the distraction of other meetings and other demands on the time and attention of the participants. The site should offer adequate meeting facilities and comfortable surroundings where participants can live, eat, work, and relax together. Climate, accessibility, meals, sleeping accommodations, recreational facilities, and economy should all be considered in selecting a site.

Although there are no restrictions about holding conferences anywhere in the world, logistics, cost, and other problems dictate caution in organizing conferences outside of North America. The Penrose Conference Committee is of the opinion that conferences held outside of North America may add an important dimension to the Penrose Conference program. However, such conferences are approved only if there are special circumstances that make a North American site much less appropriate. For a conference convened outside of North America, the cost of special liability insurance must be included in the conference budget.

Conveners may suggest specific sites or, in the event they choose to work with a conference coordinator, suggest a geographical area within which the coordinator can negotiate a specific site. Final site selection must be approved by the Penrose Conference Committee. Conveners should not officially and formally negotiate with the site management before a proposal has been approved by the Penrose Conference Committee.

PARTICIPATION

Anyone interested in attending a specific conference is encouraged to contact the conveners of that conference. Contrary to the assumption by some, an invitation is not required for application to participate. However, conveners initially should invite a few key speakers necessary to the organization and success of the conference. Aside from these invitations issued in the early planning stages of a conference, the conveners utilize indications of interest from those actively working in the field to complete the list of conference participants. Participation is not restricted to members of the Geological Society of America. GSA members, however, will receive preference when there is a choice

between equally qualified persons. The final decision on participation will be made by the conveners, whose decision shall not be subject to appeal. Acceptances for participation are not transferable.

Participation by graduate students is encouraged by providing incentives such as reduced registration fees. The cost of supporting graduate student participation is to be included in each conference budget.

In addition to *GSA News & Information* and *Geotimes*, all conferences are announced in other Earth science journals, newsletters, and so forth.

All participants are expected to live at the conference site. Spouses, families, and others who are not registered participants are requested not to visit the conference site and are not allowed to participate in conference activities.

All participants are expected to attend the entire conference and all must pay the full conference registration fee. Exceptions can be made only for invited key speakers, whose attendance is deemed essential by the conveners even though they may not be able to be present for the entire conference.

SPONSORSHIP

The Geological Society of America is the principal sponsor of the Penrose Conferences; however, the Society welcomes other societies, organizations, and institutions as co-sponsors. Conveners must identify sponsors in their proposals, and the Penrose Conference Committee reserves the right to approve co-sponsors at the time the proposals are being considered. Recognition is given to co-sponsors in the conference announcements, as well as during the conference.

FINANCING

The Society ordinarily accepts no fiscal responsibility for a conference. If a conference coordinator is contracted, the coordinator assumes fiscal responsibility. If the conveners do not use a coordinator, they accept full fiscal responsibility. In the latter case, conveners must prudently budget their conference in such a way as to break even. If surplus monies are generated, they must be returned to the Society. At the conclusion of a conference, a written financial report must be given to the Penrose Conference Committee and the GSA Council. If the services of a conference coordinator are utilized, it is the responsibility of the coordinator to prepare and transmit this report.

INITIATION OF A PROPOSAL

Anyone interested in convening a Penrose Conference may submit a proposal, but at least one of the conveners must be a member of the Geological Society of America. Guidelines for preparation of a proposal and general information about Penrose Conferences may be obtained by writing or calling

Executive Director
The Geological Society of America
3300 Penrose Place, P.O. Box 9140
Boulder, CO 80301 (303) 447-2020

Proposals for Penrose Conferences should be sent to
Executive Director
The Geological Society of America
3300 Penrose Place, P.O. Box 9140
Boulder, CO 80301

The Penrose Conference Committee reviews the proposals as they are received. In acceptance of a proposal, the Penrose Conference Committee may offer advice, which in some cases may be a condition of acceptance. The committee chairman will address an advisory letter to the conveners calling attention to any matters that seem likely to pose a problem that must be resolved if the conference is to be successful. Proposals are then recommended for approval or rejection by the Society's Executive Committee who reserves full authority for the final approval.

PENROSE CONFERENCE COORDINATOR

Conveners are encouraged, but not required, to utilize the services of a professional conference coordinator to assist in all areas of non-program planning and execution. If utilized, the coordinator assumes responsibility for all financial matters relating to the conference and associated field trips, if any. The coordinator also is responsible for negotiating arrangements with the conference facility concerning prices, space for meetings, food, recreation, lodging, transportation, scheduling projection facilities, and handling other administrative chores as they arise. During the conference, the coordinator will provide on-site assistance in non-program matters, thereby freeing the conveners to concentrate on the technical and scientific aspects of the program.

PROGRAM

Care must be taken not to overstructure the program and to allow sufficient time for free discussion by all participants. It is important to note that all participants need not expect to make formal presentations. Contributions also can be presented in informal discussions or in poster sessions. (More detailed suggestions for structuring a program will be provided in the proposals-writing guidelines to be published in the September issue.)

CONFERENCE REPORTS AND PUBLICITY

As soon as conveners have been informed by the Executive Director that their conference has been approved, they must prepare a conference announcement suitable for publication in appropriate scientific journals. If a coordinator is contracted, the announcement should be sent to the coordinator for editing and then forwarded to the Executive Director. Announcements of conferences not being planned by a coordinator should be sent directly to the Executive Director. During planning of the conference, periodic progress reports must be made to the Penrose Conference Committee by the conveners or the coordinator. As soon as the conference is over, the conveners are required to send a brief formal report to the Executive

(continued next page)

Director of the Society. The report should include an evaluation of the technical and logistical success of the conference based on the participants' comments and the conveners' experience, as well as suggestions for improvement of the Penrose Conference format as whole.

Within three months, the conveners will prepare and submit a news report for publication in *Geology*. This report will cover the most interesting scientific and technical aspects of the conference, and, wherever appropriate, include recommendations on research opportunities and priorities that were developed during the conference and may be of value to organizations responsible for supporting and coordinating research in the field covered by the conference.

The purpose of the report is to inform those not in attendance of the main trends of thought and discussion that prevailed at the conference. The report should not publish specific data or concepts for which individual participants expect to receive priority through publications authored by them in regular journals of their individual choice. In balancing the opposing needs to inform and to preserve priority, the conveners must perform this task with responsibility and delicacy.

Other similar reports on the conference may be prepared and submitted to other journals for publication, but only after the letter of acceptance to publish the initial report has been received from *Geology*.

As an incentive to free exchange of information and to

encourage open and frank discussion, no formal scientific report may be derived from the conference. It is anticipated that symposia, at GSA meetings or elsewhere, may develop from some conferences. These should consist of a related series of formal papers, each reflecting the author's own ideas, rather than a synthesis of what was presented at a particular conference.

The Society hopes and expects that all participants will freely discuss with their colleagues the significant results of their participation. The intent is that the conferences shall promote generation of new concepts and nurture new research efforts in all phases of the Earth sciences.

ADHERENCE TO GUIDELINES

These guidelines, formulated by the Penrose Conference Committee and approved by the GSA Council, provide rules based on experience gained from past conferences; changes and improvements will be incorporated as experience dictates. Once approval has been given by the Society, the conveners are fully responsible for the conference in accordance with the guidelines, and their acceptance implies agreement to abide by them. In cases of flagrant violation of the guidelines, the Executive Director of the Society is empowered to take appropriate action, including postponement or cancellation of the conference.

May 19, 1981

Guidelines for Preparation of and Writing a Penrose Conference Proposal

The key to an efficient and prompt review of any proposal is that the proposal contain all of the information needed by the Penrose Conference Committee to make a decision. Each proposal submitted to the Society must contain the following information, outlined in the format set forth below. Proposals should be sent to the Executive Director with a simple cover letter signed by all conveners.

Proposal Outline

1. A short expression of the subject, by title. Normally, this title would be the same one that is used on announcements, publicity, and in any correspondence regarding the conference even before it is approved.
2. A description of the subject. What is the conference all about? What is the objective of the conference?
3. A statement explaining how a conference on this subject will meet the purpose/objectives that have been set forth for the Penrose Conferences in the general guidelines. What new ideas, unresolved controversy, or potential future significant advances pertaining to the subject justify the need for a conference?
4. List of several key speakers and their fields of interest, with an indication of their willingness and ability to participate. This indication normally would be in the form of letters to the convener from the key speakers. Documented phone calls are less satisfactory. This is a particularly critical item in the review of the proposal because the success of a conference is largely a function of *who* participates.
5. A preliminary general outline of sessions. Even though preliminary, an outline of the schedule is important because it forces careful thought about relevance, organization, and treatment of subject matter. The schedule might include tentative titles and speakers for key presentations, as well as some indication of the gross structure of the program or how the time will be used. Such information permits evaluation of the reasonableness of the conference content in terms of the time available.

(Continued: Guidelines for Preparation of and Writing a Penrose Conference Proposal)

6. A suggested geographic location or locations. The geographic location, and even the precise site of a conference, often will be dictated by a field trip plan and little choice will be available. For conferences without associated field trips, a wider range of possibilities obviously will be possible and alternate sites should be identified. Regardless, conveners planning to use a coordinator are strongly advised against making formal contacts with the site management. Experience has been that a professional coordinator can negotiate much better when such contact has not been made.
7. A choice of preferred and alternate dates (or at least a preference for the time of year). In selecting the dates refer to the appropriate discussion in the Penrose Conference General Guidelines. Be sure to allow enough time, normally no less than a year, for processing the proposal and advertising the conference. Check the schedule of GSA section meetings which appears from time to time in *GSA News & Information*, and check the *Geotimes* monthly calendar of events for possible conflicts. A schedule of future approved and recommended Penrose Conferences will be provided prospective conveners with these guidelines.
8. Anticipated number of participants. If the anticipated number is above 80 or below 50, an explanation and justification should be included.
9. A description of the nature and logistics of any field trip(s) that is a suggested part of the conference. How and when will the trip fit into the program? Generally, what is its length and destination? What forms of transportation will be needed? Will there be any difficulty in arranging this transportation?
10. A statement on any international participants who might be considered and the source and amount of anticipated financial support for their participation. For most conferences, international participation is essential for success, but often the expense of overseas travel is prohibitive. Potential outside sources of funding for partially defraying the expenses of selected foreign participants should be identified, but no official contact with the source should be made until after the proposal has been approved.
11. A statement indicating the willingness of the conveners to abide by the Penrose Conference General Guidelines and their intent, or lack thereof, to ask the Executive Director to contract a meeting coordinator. Conveners who do not opt for the services of a coordinator are reminded that they must accept full fiscal responsibility for the conference. In planning their budget, they should be aware that by action of the GSA Council, the maximum fee for a 5-day conference is \$400. Normally, this would include all costs, even field trips.
12. Identification of co-sponsors, if any, and their roles in the conference.
13. Curriculum vitae for each of the conveners, including telephone numbers and a list of publications and projects which qualify each for leading the proposed conference.

In conclusion, proposers are reminded that failure to submit complete and adequate proposals may cause significant delay in the approval process. Therefore, because experience has shown that a year or more is generally needed between approval date and conference date, inadequate proposals may result in the loss of the hoped-for date.

Lee J. Suttner, Chairman
 Penrose Conference Committee
 May 19, 1981

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NAZCA PLATE:

CRUSTAL FORMATION AND ANDEAN CONVERGENCE

Edited by LaVerne D. Kulm, Jack Dymond, E. Julius Dasch, and Donald M. Hussong

The Nazca plate volume represents a multidisciplinary investigation of an entire lithospheric plate and its plate tectonic boundaries. Thirty-five papers in five sections by fifty-six authors describe the geology, geochemistry, and geophysics of the Nazca plate and Andean convergence zone. The chapters are arranged in natural order of the evolution of the oceanic crust at the spreading East Pacific Rise; sources of metalliferous

sediments deposited on the basaltic crust; destruction of the subducting plate and oceanic ridges along the Peru-Chile Trench; evolution and crustal structure of forearc basins and their relation to the underlying continental crust; and the effect of the subduction on volcanism, mountain building, and ore deposits of the Andes Mountains.

INTRODUCTION

The history of the Nazca Plate Project: project initiation, objectives, participants, cruise activities, and publications.

DIVERGENT BOUNDARY

History of crustal formation along the East Pacific Rise from seismicity, magnetic anomaly, and bathymetric data; evolution of the Easter Plate; comparisons of the petrogenesis and secondary alteration of basaltic crust from the East Pacific Rise, Galapagos Spreading Center, and fossil Galapagos Rise; aging of the Nazca plate oceanic crust as revealed by studies of the mineralogy and chemistry of secondary phases observed in altered basalts.

METALLIFEROUS SEDIMENTS

Geochemistry of Nazca plate surface sediments using a quantitative five-source model; evaluation of the composition and intensity of the hydrothermal sources on East Pacific Rise using the composition and accumulation rates of metalliferous sediments; variations in metalliferous sediment deposition on the Nazca plate through time and space; lead isotopic evidence for variable metal sources to Nazca plate sediments; precipitation mechanisms and sources of U and Th in metalliferous sedi-

ments; processes of formation and compositional variations of Nazca plate ferromanganese nodules, micronodules, and hydrothermal crusts; causes of regional variations in sediment thickness of the Nazca plate; an economic evaluation of the Nazca plate metalliferous sediments.

CONTINENTAL MARGIN AND TRENCH

Deep crustal structure of the continental margin, Nazca Ridge, and eastern Nazca plate using gravity, seismic refraction, and seismic reflection information; collision of oceanic spreading and aseismic ridges with the continental margin and trench; structure and vertical tectonics of the subducting lithospheric slab within the Peru-Chile Trench and the forearc basins comprising the continental shelf and slope; Cenozoic terrigenous and carbonate sediments and the stratigraphy of forearc basins; biogeography and paleoenvironments of benthic foraminifera of the continental margin and oceanic plate; clay mineralogy of continental and oceanic sediments.

ANDEAN CONVERGENCE ZONE

Role of subducted material on the formation of igneous rocks and ore deposits—convergence and mineralization; subduction and the origin of calc-alkalic rocks of the Andes; lead isotopic composition of Andean ore deposits; a reconsideration of the Geostill concept.

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Desert dust has been present in many parts of the world since the formation of the continents and probably is of the same antiquity on some other planets. The dust storm is a common phenomenon of great magnitude in arid and semi-arid areas. It reddened the sky above the cave dwellers at Lascaux, and it is mentioned in the Bible: "the sun became black as a sackcloth of hair . . ." (Revelations 6:12).

The present volume of 21 papers is an outgrowth from, but not a complete record of, an American Association for the Advancement of Science symposium arranged by the editor on desert dust and its effect on man. Eleven of the 15 papers listed at the symposium are included. Ten additional papers were written later especially for the volume. The present volume represents 46 authors from five countries. Dust is discussed on an interplanetary scale: areas included are the United States, Africa, the USSR, China, and the West Indies, and Mars. Because of the growing international importance of the effect of desert dust on man, the abstracts of the papers as well as the tables of contents are presented in five languages: English, French, German, Russian, and Chinese.

Probably for the first time views of the many specialties concerned with desert dust are brought together. Disciplines include geology, physical geography, microbiology, engineering, physics, meteorology, soil science, chemistry, oceanography, agricultural science, and highway engineering.

Wind-blown dust falls into two major grain-size groups. Jackson as well as Prospero note that most dust is carried only up to a few hundred kilometers but dust particles between 2 and 10 microns in size move as an aerosol from the Sahara to the Caribbean, as well as from North America to Hawaii. Rahn traces dust from the Gobi Desert to Alaska. Dust transport of enormous distances occurs on Mars as commented on by Greeley. Gillette's pioneer paper shows that both aerodynamical and soil factors must be considered in studying the generation of wind-blown dust.

Péwé and associates provide the first quantitative data on the amount of dust deposited in Arizona and comment that the volume of calcium carbonate in the dust is more than enough to form known caliche. Also, the amount of manganese and iron deposited on the rocks as dust is more than enough to create existing desert varnish.

More than half the book is devoted to the effect of desert dust on man. As outlined by Leathers, plant components in dust of North America and elsewhere are tremendously significant in causing diseases, some fatal, for man. Papers by Nakata and Wilshire demonstrate man's activities in creating surface conditions giving rise to dust storms as indicated on space imagery and from documentation of the furious desert dust storm in December 1977 in the San Joaquin Valley. Fryrear demonstrates that, despite chemical fertilization, soil productivity continues to drop in areas that have regular dust storms. A final series of papers demonstrate that blowing dust is a dangerous and often fatal hazard to highway motorists in the southwestern United States. Motorists traveling at high speeds are suddenly blinded by blowing dust and this eventually leads to fatal multiple-vehicle accidents.

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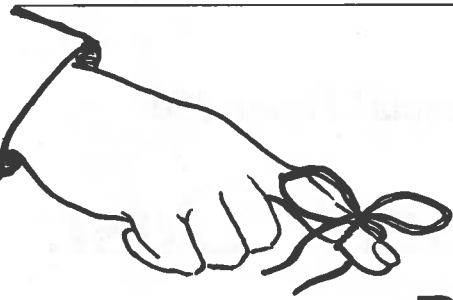
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REMINDER

Deadline for receipt of abstracts at GSA headquarters for the Annual Meeting in New Orleans is May 21, 1982. Mail volunteered abstracts* to Abstracts Secretary, Geological Society of America, P.O. Box 9140, Boulder, CO 80301 to arrive on or before May 21.

ABSTRACTS DEADLINE

*Abstract forms available upon request from the above address.

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