



GSA news & information

G.S.A. ARCHIVES

VOLUME 4, NUMBER 6

JUNE 1982

Annual Report for 1981 Committee on Research Grants

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

The Committee on Research Grants, consisting of Walter Alvarez, Robin Brett, NSF conferee, and Emile A. Pessagno, Chairman, met at Society headquarters in Boulder, Colorado, on April 23 and 24, 1981.

The committee had at its disposal \$100,662, which included industrial donations, donations by past recipients and from dues statements check-offs, funds provided by the Society's Endowment Fund, and those from the Harold T. Stearns Fund. The substantial increase of last year's total of \$81,000 was due in part to inclusion of \$8,500 from the Arthur L. Day Fund, \$6,000 from oil company contributions, and \$3,500 from the Harold T. Stearns Fund.

The total number of applications (374) was only slightly less than that of last year (402). It was our impression that the overall quality of the proposals was lower than that of last year. Support was recommended for 177 or 47% of the total, with an average of \$575. We are again impressed by the increasing proportion of female applicants. There were 106 applications from women this year, up from 94 in 1980 and 52 in 1979. Obviously, there will be no lack of exceptional female geologists in the future.

The distribution of supported projects among generalized fields is shown in Table 1.

TABLE 1.

	Requested	Funded
1. Paleontology	41	26
2. Sedimentology & Stratigraphy	93	35
3. Structure & Tectonics	56	32
4. Igneous & Metamorphic Petrology	76	39
5. Economic Geology	26	9
6. Quaternary Geology & Geomorphology	33	14
7. Geophysics	5	3
8. Other	44	19

Harold T. Stearns Fellowship Award

By a generous contribution from Dr. Harold T. Stearns, the principle of the Harold T. Stearns Fellowship Fund has been increased by an additional \$10,000, bringing the fund to \$30,000. The committee voted to recommend four recipients for the 1981 awards for research on one or more aspects of the geology of the Pacific Islands and the circum-Pacific region. They are Julie K. Brigham, University of Colorado, Boulder, *Stratigraphy and amino acid geochronology of the Cubik Formation, Arctic coastal plain, Alaska*; James G. Brophy, Johns Hopkins University, Baltimore, Maryland, *The geology and petrology of the Cold Bay Volcanic Center, Alaska*; Brian R. Globberman, University of California, Santa Cruz, *Paleomagnetism and tectonic significance of Mesozoic volcanic and sedimentary rocks from the Togiak Bay, Cape Newenham area, Southwestern Alaska*; Constance M. Soja, University of Oregon, Eugene, *Brachiopods of the Kasaan Island fauna, Kasaan Island, Southeastern Alaska*.

Robert K. Fahnestock Award

The Robert K. Fahnestock Award is given each year to honor the memory of Dr. Fahnestock, a former member of the Committee on Research Grants, who died indirectly as a result of serving on the committee. The grant is given to the applicant with the best application in geomorphology and sediment transport, Dr. Fahnestock's field. The recipient for 1981 is Cathy W. Barnosky, University of Washington, Seattle, *Late Quaternary vegetation and climate history of southwestern Washington*.

Outstanding mention

The committee has singled out twelve young scientists and their proposals for special mention in the belief that they should be brought to the attention of the Council and to the membership of the Society. The number is large, but so was

(continued next page)

Annual Report for 1981 — The Geological Society of America

the total number of proposals. These persons are

- Mary Lou Bevier, University of California, Santa Barbara
Petrology and geochemistry of the Miocene plateau lavas of British Columbia, Canada
- Paul D. Bouey, University of California, Davis
Obsidian source type collection
- Mark T. Brandon, University of Washington, Seattle
Geology of the Pacific Rim Complex and West Coast fault on western Vancouver Island, British Columbia
- Sandra Jean Carlson, University of Michigan, Ann Arbor
Taxonomic and functional significance of tooth enamel ultra-structure in primitive mammals and reptiles
- Pamela Polite Fisco, Rice University, Houston, Texas
Distribution and ecology of Foraminifera in the North Victoria Land-Cape Adare region, Antarctica
- George E. Gehrels, California Institute of Technology, Pasadena
Structural, petrologic, and geochronologic analysis of a basement complex and overlying metasedimentary and metavolcanic rocks in the southernmost Alexander terrane, Southeastern Alaska
- Jennifer S. Getsinger, University of British Columbia, Vancouver
Metamorphism and structure of the Three Ladies Mountain area, Cariboo Mountains, British Columbia
- Mary Lee Gillam, University of Colorado, Boulder
Age and climate effects on soil development, lower Animas River area, Colorado and New Mexico
- Collin Hyde, retired ceramic engineer, Rockford, Illinois
An apparatus to project conoscopic interference figures
- William Kohlberger, Yale University, New Haven, Connecticut
Revision of the Ohio Shale Dinichthyids and a study of the ontogeny and phylogeny of the Placoderm dermal skeleton
- D. Brooks McKinney, Johns Hopkins University, Baltimore, Maryland
Origin of the comb layered and orbicular rocks of Fisher Lake, California
- Beth Okamura, University of California, Berkeley
Water flow and the effectiveness of bryozoan suspension-feeding

Donations received from Marathon, Mobil, and Texaco

A total of \$6,000 in contributions were received from Mobil, Marathon, and Texaco in support of the research grants program. Sixteen promising young earth scientists were partially supported by these funds.

Applications in Spanish and French

To encourage applications from Mexico and Central America, the committee recommended that the 1982 Policies

and Procedures sheet and application forms be translated into Spanish and circulated to universities in those countries. Applications in French will also be accepted.

Future funding of research grants program

The committee believes the GSA research grant program represents one of the most effective scientific funding mechanisms in the country, yielding an enormous return for the relatively small amount of money expended. If the impact of the program is not to decline further with inflation, the level of funding must be maintained or increased in 1982.

1981 RESEARCH GRANTS SUMMARY OF COMMITTEE RECOMMENDATIONS

	Number of Applicants	Requested by Applicants	Recommended for Support
CATEGORY I (recommended for support)			
M.S. student applicants	75	\$ 68,440	\$ 40,091
Ph.D. student applicants	101	118,498	60,646
Postdoctoral applicants	1	1,000	1,000
Subtotal	177	\$187,938	\$101,737
CATEGORY II (alternates)			
M.S. student applicants	2	\$ 1,750	
Ph.D. student applicants	—	—	
Postdoctoral applicants	—	—	
Subtotal	2	\$ 1,750	
CATEGORY III (not recommended for support)			
M.S. student applicants	127	\$134,580	
Ph.D. student applicants	56	65,705	
Postdoctoral applicants	12	15,816	
Subtotal	195	\$216,101	
GRAND TOTAL	374	\$405,789	\$101,737
COUNCIL ACTION			
Support all Category I projects	177		\$101,737
Funding declined (cancellations)	—		—
Funding returned from prior years			(1,488)
Alternates awarded	2		500
YEAR END TOTAL	179		\$100,749

Respectfully submitted,
Emile A. Pessagno, Jr., Chairman; Walter Alvarez;
Robin Brett, NSF Conferee

Council for International Exchange of Scholars offers teaching and research opportunities abroad

Applications are now being accepted for Senior Scholar Fulbright awards for university teaching and postdoctoral research in over 100 countries during the 1983-84 academic year. Awards are offered in all academic fields for periods of from 2 to 10 months.

Interested applicants may now obtain application forms and information on college and university campuses in the Office of the Graduate Dean at graduate institutions or the Office of the Chief Academic Officer at 2- and 4-year institutions. On some campuses, material is available from the Office of International Programs.

Prospective applicants may also write for applications

and additional details on awards, specifying the country and field of interest, to Council for International Exchange of Scholars, 11 Dupont Circle, Suite 300, Washington, D.C. 20036. All applicants must be U.S. citizens and have had college or university teaching experience and/or a Ph.D. or the equivalent. The Fulbright program is funded and administered by the United States International Communication Agency.

New Applications deadlines for 1983-84 awards:

June 15, 1982, for American Republics, Australia, and New Zealand

September 15, 1982, for Africa, Asia, Europe, and the Middle East.

Upcoming meetings of the American Institute of Professional Geologists

1982 Annual Meeting

November 10-13, 1982
Huntington-Sheraton Hotel
Pasadena, California

General Chairman:

William A. Adent
ARCO International Oil
and Gas
515 South Flower, AP 3509
Los Angeles, CA 90071
(213) 486-0148

1983 Annual Meeting

September 7-10, 1983
Ramada Snow King Inn
Jackson, Wyoming

General Chairman:

Gene R. George
P.O. Box 2775
Casper, WY 82601
(307) 265-9199

Eighth Annual Underground Coal Conversion Symposium to be held August 15-19, 1982

The Eighth Annual Underground Coal Conversion Symposium, sponsored by the U.S. Department of Energy and hosted by Sandia National Laboratories, will be held August 15-19, 1982, at Keystone, Colorado. For information, contact Sandra R. Hudson, Symposium Coordinator, Sandia National Laboratories, Department 4740, Albuquerque, New Mexico 87185.

Memorial preprints ready for free distribution

The following memorial preprints are now available, free of charge, by writing to GSA, P.O. Box 9140, Boulder, CO 80301:

Thomas A. Mutch	by F. Donald Eckelmann
Edgar Wesley Owen	by Robert H. Dott, Sr.
Richard Henry Schweers	by H. H. Bradfield
James Wilson Snider	by M. S. Johnson
Helmut G. F. Winkler	by K. -H. Nitsch

Necrology

Notice has been received of the following deaths: Howard T. Anderson, Riverside, California; Charles E. B. Conybeare, Canberra, Australia; J. Bruce Imswiler, Sparks, Nevada; Conrad S. Klepadlo, Fullerton, California; Frank E. Lozo, Houston, Texas; Ralph E. Van Alstine, Bethesda, Maryland; Eugene C. Wegmann, Neuchatel, Switzerland.

GSA News & Information

Vol. 4, no. 6 June 1982

GSA NEWS & INFORMATION (ISSN 0164-5854) is the monthly newsletter of The Geological Society of America, Inc., P.O. Box 9140, Boulder, Colorado 80301. Second-class postage rates paid at Boulder, Colorado, and at additional mailing office.

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

Gulf Basin synthesis volume organized

The second of the spring/summer 1982 D-NAG workshops on synthesis volumes for *The Geology of North America* was held in Austin, Texas, on January 28 and 29. This workshop established the organization of the synthesis for the Gulf of Mexico Basin. An 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 and accompanying synthesis maps for this volume are to be in the hands of the editors, Amos Salvador and R. T. Buffler, by January 1984.

- Chapter 1 Introduction. *A. Salvador, R. T. Buffler*
- Chapter 2 Physiographic provinces and bathymetry. *W. R. Bryant, R. G. Martin*
- Chapter 3 Quaternary sedimentary processes. *W. R. Bryant*
- Chapter 4 Tectonic features. *R. G. Martin*
- Chapter 5 Crust and Mantle: gravity, magnetics, seismic refraction, and deep reflection data. *R. H. Pilger, R. T. Buffler, S. A. Hall, R. G. Martin*
- Chapter 6 Evolution of structural features. *R. O. Kehle*
- Chapter 7 Igneous activity. *G. R. Byerly*
- Chapter 8 Pre-Upper Triassic: nature and age of the "basement"; Paleozoic. *R. D. Woods*
- Chapter 9 Upper Triassic-Jurassic. *A. Salvador, R. G. Martin*
- Chapter 10 Lower Cretaceous. *E. McFarlan, Jr.*
- Chapter 11 Upper Cretaceous. *N. F. Sohl*
- Chapter 12 Cenozoic. *D. G. Bebout, W. F. Fisher, W. E. Galloway, J. B. Dunlap, Jr.*
- Chapter 13 Seismic stratigraphy of the central Gulf of Mexico Basin. *R. T. Buffler*
- Chapter 14 Sedimentary cycles. *A. Salvador*
- Chapter 15 Origin and evolution of the Gulf of Mexico Basin. *A. Salvador, R. T. Buffler*
- Chapter 16 Oil and gas resources. *R. Nehring*
- Chapter 17 Lignite, uranium, phosphates, sulfur, and other minerals; geothermal and geopressed resources. *W. R. Kaiser, R. A. Morton*
- Chapter 18 Water resources. *C. W. Kreidler*
- Chapter 19 Summary; outstanding problems. *A. Salvador, R. T. Buffler*

MEETINGS 1983

SOUTH-CENTRAL

Texas A&M University
College Station, Texas
March 3-4, 1983

ABSTRACT DEADLINE: October 14, 1982

Submit completed abstracts to

Andrew Hajash and
Robert Popp, Program Committee Co-Chairmen
Geology Department
Texas A&M University
College Station, TX 77843
(713) 845-2451

SOUTHEASTERN

Florida State University
Tallahassee, Florida
March 16-18, 1983

ABSTRACT DEADLINE: October 28, 1982

Submit completed abstracts to

Paul Ragland, Program Committee Chairman
Department of Geology
Florida State University
Tallahassee, FL 32306
(904) 644-5860

NORTHEASTERN

Concord Hotel
Monticello, New York
March 23-25, 1983

ABSTRACT DEADLINE: October 15, 1982

Submit completed abstracts to

Elizabeth Downie, Program Committee Chairman
Department of Geological Sciences
SUNY at New Paltz
New Paltz, NY 12561
(914) 257-2167

NORTH-CENTRAL

Wisconsin Center
Madison, Wisconsin
April 28-29, 1983

ABSTRACT DEADLINE: December 7, 1982

Submit completed abstracts to

S. W. Bailey, Program Committee Chairman
Department of Geology and Geophysics
Weeks Hall
1215 West Dayton St.
Madison, WI 53706
(608) 262-1806

CORDILLERAN (joint meeting with

Salt Palace Rocky Mountain)
Salt Lake City, Utah
May 2-4, 1983

ABSTRACT DEADLINE: November 29, 1982

Submit completed abstracts to

Peter H. Roth, Program Committee Chairman
Department of Geology and Geophysics
University of Utah
Salt Lake City, UT 84112-1183
(801) 581-6553

ROCKY MOUNTAIN (joint meeting with

Salt Palace Cordilleran)
Salt Lake City, Utah
May 2-4, 1983

ABSTRACT DEADLINE: November 29, 1982

Submit completed abstracts to

Peter H. Roth, Program Committee Chairman
Department of Geology and Geophysics
University of Utah
Salt Lake City, UT 84112-1183
(801) 581-6553

1983 Section Meeting Announcements

PAPERS for all section meetings of the Geological Society of America are invited from GSA Fellows, Members, Student Associates, and nonmembers. Accepted abstracts will be published in the appropriate issue of *Abstracts with Programs*, which will be distributed as a formal publication prior to each section meeting. Depending on limitations set by the individual sections, any author may submit as many abstracts as he or she wishes; however, no more than two from any author or coauthor will be accepted for publication.

Abstracts will be selected on the basis of geologic significance, amount of new information, broad interest, and relevance to the section's geographic coverage.

GSA members are encouraged to order their section meeting book(s) on their dues statement. Nonmembers may order from Publication Sales.

Abstracts, which are limited to 250 words, must be

submitted camera-ready on official 1983 GSA forms that may be obtained from the local committee officers listed on this page or from:

Abstracts Coordinator
Geological Society of America
P.O. Box 9140
Boulder, CO 80301

If the typing of the original copy will not reproduce satisfactorily, accepted abstracts will be retyped at GSA headquarters; the senior author will be charged \$15. There will be no opportunity for authors to review or revise the retyped material. *Abstracts submitted on other than the GSA form will be returned without consideration for the meeting.*

(continued next page)

(Section meetings, continued)

PLEASE NOTE ABSTRACT DEADLINES. Acceptance or rejection of abstracts will be based on the abstracts as submitted by the author. There will be no opportunity to revise or withdraw them. Final decisions on acceptance or rejection of abstracts are the responsibility of the section Program Committees.

POSTER SESSIONS. Some sections will have space for poster sessions during their 1983 meetings. It will be necessary to submit the usual 250-word abstract explaining the material on display. Even though a formal paper is not read, the abstract is printed in *Abstracts with Programs*. Decisions on whether papers are accepted for oral presentations or poster sessions will be made by the Program Committees. The authors, however, may indicate their preference if they so desire.

STUDENT PAPERS are welcomed and encouraged. Some sections give a Best Student Paper award. To be considered for the award, the paper must be by an individual

student author, and it must be identified as being a student paper.

ALL SLIDES must be in a 2" x 2" frame and of a thickness that will fit comfortably in a standard Kodak carousel projection magazine. Slides should be designed for easy reading on 10-foot-wide screens by viewers who are as far away as 70 feet. Overhead projectors and chalkboards may be available on request.

DETAILED INFORMATION for registration, housing, field trips, short courses, guest activities, welcoming parties, business meetings and luncheons, annual dinners, and other events will be announced in future issues of *GSA News & Information*, as well as being included in the appropriate issues of *Abstracts with Programs*.

EXHIBIT SPACE may be made available at some section meetings. For information, please write or call the local committee officers listed on the facing page.

* * * * *

SPECIAL NOTE TO MEMBERS LIVING OUTSIDE CONTERMINOUS UNITED STATES

You may receive copies of the 1983 *Abstracts with Programs* for the section meetings too late to take advantage of the preregistration and housing forms.

Therefore, those who plan to attend a section meeting are urged to write to the appropriate local committee officers listed on the facing page for copies of the preregistration forms, housing applications, and field-trip information.

Program for 23rd U.S. symposium on rock mechanics is set

The technical program has been announced for the 23rd U.S. Symposium on Rock Mechanics, which will be held August 25-27, 1982, at the University of California at Berkeley.

A variety of activities centered on the symposium's theme, "Issues in rock mechanics," will include the technical program itself; two NSF-supported workshops, one on the relationship between geophysics and engineering rock mechanics, the other on deformation mechanisms and the development of textures in rocks; an optional short course, scheduled immediately preceding the symposium, on the fundamentals of fracture in brittle solids; and field trips, scheduled immediately before or after the technical program to the nuclear test site in Nevada, to points along the San Andreas earthquake fault in the San Francisco Bay Area, and to tectonically significant areas in the coastal mountains of northern California.

The major aspects of rock mechanics to be discussed in more than 100 papers presented during the technical program include rock mass exploration and reinforcement, in-situ stresses, laboratory and field tests, rock fracture, numerical models, statistics and tectonophysics. The speakers will con-

centrate on the more interesting and provocative features of their work, and the discussions will be structured so as to encourage participation by all who attend.

International interest in the meeting is evidenced by the inclusion of papers from ten nations in addition to the U.S.A.—Australia, Brazil, Canada, the People's Republic of China, Great Britain, India, Japan, South Africa, Sweden, and West Germany.

Sponsoring the symposium are the University of California at Berkeley, the U.S. National Committee on Rock Mechanics, the International Society for Rock Mechanics, and the National Science Foundation.

The registration fee is \$195; a special \$35 fee is open to students. Both fees include a hardbound copy of the proceedings.

To receive a brochure describing the program, auxiliary activities, and registration procedures, write to Continuing Education in Engineering, University of California Extension, 2223 Fulton St., Berkeley, California 94720, U.S.A., or call (415) 642-4151.

NEW ORLEANS, OCTOBER 18-21

1982 Annual Meeting Advance Notice

New Orleans is a boisterous, sophisticated city with Mardi Gras and petroleum on its mind. Grade it a 10 if you like jazz, creole cuisine, exotic history, night life, and warm breezes off the Mississippi. Add these words to your vocabulary: beignet, gumbo, cajun, creole, crawfish, and vieux carré. You'll know their meanings by the time you leave. It's going to be an unforgettable meeting.

PREREGISTRATION DEADLINE: SEPTEMBER 17

Preregistration Forms and Full Details Appear in July *GSA News & Information*

Call: GSA Meetings Department for Information

(Especially if you anticipate an address change for July)

(303) 447-2020

TECHNICAL PROGRAM. Over 1,000 papers will be given in both volunteered and invited sessions. The 25 symposia include topics with strong appeal to the petroleum community. The symposia list appeared in March *GSA News & Information*. A program summary will appear in August *GSA News & Information*.

SHORT COURSES/COLLOQUIA. GSA is sponsoring two Sunday courses:

1. Remote Sensing—Image Interpretation for Geoscientists. Faculty: F. F. Sabins, Sr. Research Assoc., Chevron Oil Co.

2. Deltas—Their Application to Oil, Gas, and Coal Exploration. Faculty: Ram Saxena, Exploration Geologist, Geoconsultants International.

Other courses will be sponsored by MSA, SEG, JCPDS, and AGI and AGI Women Geoscientists.

ENTERTAINMENT.

Sunday—Golf and Tennis Tournament; Welcoming Reception and Exhibits Fanfare

Monday—Alumni Receptions

Tuesday—Riverboat Night on *The President*. Three hours on the Mississippi with New Orleans jazz and beverages included

EXHIBITS. Technical, scientific, and publication displays will open Sunday night and continue through Wednesday noon. In addition to the exhibits, there will be drawings for prizes, a 7 foot model of the Cognac Drilling Platform, and the best coffee prices in town.

EMPLOYMENT SERVICE. This is a way to interview with employers in the geosciences, with emphasis on the New Orleans petroleum community.

FIELD TRIPS. Seventeen trips including those to the Grand Cayman Island, Jamaican Reefs, and the Yucatan are listed in March *GSA News & Information*. Trip details will appear in the July issue of *GSA News & Information*.

GUESTS. Created just for GSA guests, the program will include a creole lunch and ballet, shopping in the French Quarter, and technical sessions for not-so-technical persons.

ACCOMMODATIONS. Headquarters is the deluxe Hyatt Regency, where 1,000 rooms are being held at rates that average \$69 for single. From the Hyatt, there is direct access to the Superdome, making it the closest and most convenient of the 13 properties to be offered in the GSA room block. The Hyatt is also one of the best managed and most reasonably priced of the major New Orleans hotels. Students will find rooms at the YMCA at \$30 a night for single. Housing will be handled by the New Orleans Housing Bureau. **All reservations must be made on the GSA Housing Form available in the July issue of *GSA News & Information*.**

GROUND TRANSPORTATION. The New Orleans CBD shuttle provides convenient transportation from the Hyatt to the French Quarter and downtown areas. GSA is not providing a shuttle. For those staying at outlying hotels, we suggest the city bus, car, or taxi.

AIRFARES. An 800-number will be published in July for access to information and booking assistance to help you obtain the best fares possible.

NOTE THESE FIELD TRIP CHANGES

The following changes have been made to field trip information which appeared in March *GSA News & Information*:

Trip 3. Appalachian Thrust Belt in Alabama. It is now postmeeting trip 13; 2 days; begins in New Orleans and ends in Birmingham, Alabama.

Trip 11. Hydrogeology of Carbonate Rocks of the Yucatan Peninsula, Mexico (4 days). It is now a premeeting trip (remains trip 11); October 13-17.

Trip 13. Ouachita Thrust Belt in Arkansas. It is now premeeting trip 3; begins in Little Rock, Arkansas, and ends in New Orleans.

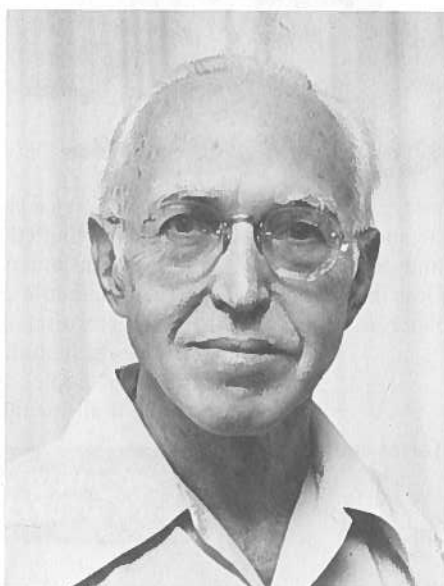
Field Trip Descriptions and Registration Forms
Available in the July Issue of *GSA News & Information*.

1982 ANNUAL MEETING CHAIRMEN



FIELD TRIP CHAIRMAN

GROAT, CHARLES GEORGE, b Westfield, NY, Mar 25, 40; m 63; c 2. **ECONOMIC GEOLOGY**. Educ: Univ Rochester, AB, 62; Univ Mass, MS, 67; Univ Tex, Austin, PhD (geol), 70. Prof Exp: Res Geologist, Bur Econ Geol, Univ Tex, Austin 68-71, assoc dir, 71-75, assoc prof, dept geol sci, 71-77, actg dir Bur Econ Geol, 75-77; Assoc Prof, Chair Dept of Geol Sc, Univ Tex, El Paso, 77-78, **STATE GEOL & DIR LOUISIANA GEOL SUR 78-**. Mem: Geol Soc Am; Soc Econ Geologists; Soc Mining Engr; Am Inst Prof Geologist. Res: Geology of energy resources, especially uranium, coal; environmental aspects of mining; geomorphology of arid areas.



GENERAL CHAIRMAN

BRAUNSTEIN, JULES, b. Buffalo, NY, Nov 4, 13; m 34. **STRATIGRAPHY**. Educ: George Washington Univ, BS, 33; Columbia Univ, MA, 36. Prof Exp: Shell Oil Co, 37-78, Paleontologist, 37-41, stratigrapher, 41-52, spec probs, 52-55, sr stratigrapher, 55-61, area stratigrapher, 61-66, staff geologist, 66-78; ED, **GEOL SURVEY ALA, 78-**; **ADJUNCT PROF GEOL, UNIV NEW ORLEANS, 78-**. Honors & Awards: Distinguished Serv Award, Am Asn Petrol Geologists, 75; Honorary mem AAPG, 79. Mem: Fel AAAS; Geol Soc Am; Am Asn Petrol Geologists; hon mem Soc Econ Paleontologists & Mineralogists; New Orleans Geol Soc. Res: Micropaleontology and stratigraphy of the Gulf Coast; lithology of carbonate rocks; petroleum geology of the southeastern Gulf Coast; regional stratigraphy, structure and petroleum geology of the US Gulf Coast.



TECHNICAL PROGRAM CHAIRMAN

CRAIG, WILLIAM WARREN, b Kansas City, MO, Apr 1, 35; m 61; c 4, **GEOLOGY**. Educ: Univ Mo, Columbia, BA, 57, MA, 61; Univ Tex, Austin, PhD (geol), 68. Prof Exp: Assoc Prof geol, Northeastern Mo State Col, 65-68; asst prof, 68-71, assoc prof, 71-77, **PROF EARTH SCI, UNIV NEW ORLEANS, 77-**. Mem: Geol Soc Am; Soc Econ Paleontologists & Mineralogists. Res: Cretaceous nonmarine Ostracodes; mid-continent Ordovician and Silurian stratigraphy and conodont biostratigraphy.



Looking for a new job?

Whether you are new to the field of geology or have had years of experience, the GSA Employment Service is your most economical way to locate that new position. More and more potential employers are turning to the Service each year as their place to find the qualified individuals they need.

You may register any time throughout the year and your name will be provided to all participating employers seeking individuals with your qualifications. If possible, take advantage of GSA's Employment Interview Service conducted each fall in conjunction with the Society-wide Annual Meeting (this year in New Orleans, October 18-21) where potential employers will be available for face-to-face interviews.

To register, complete the application form on the following page, make up a one-page typed resume, and mail with your check or money order to the address given below. One-year listing for GSA Members and Student Associates — \$15, non-members — \$30. That's less than a week or two of want ads in your hometown newspaper and much more effective.

For additional information and submission of forms contact:
Clara Hodgson, Membership Coordinator
Geological Society of America
P.O. Box 9140 • Boulder, Colorado • (303) 447-2020



Looking for a new geoscientist employee?

Your nation-wide search for geoscientists can be as simple as filling out the Employer's Request for Earth Science Applicants on the following page. You specify educational and professional experience required and specialty area or areas, and GSA's computerized file will take it from there. You will be provided with a printout which includes applicants' names, addresses, phone numbers, areas of specialty, type of employment desired, degrees held, years of professional experience, and current employment status. For 1982 the cost of a printout of one or two specialty codes is \$100. Each additional listing is \$30. A printout of the entire applicant listing in all specialties may be purchased for \$300.

GSA also conducts the Employment Interview Service each fall in conjunction with the Society-wide Annual Meeting (this year in New Orleans, October 18-21). Interview space may be rented in half-day increments and our staff will schedule all interviews with attending job applicants for each recruiter. Additional services available for employer participants include a message service, complete listing of applicants, copies of resumes at no additional charge, and posting of all vacancies.

APPLICANT AND EMPLOYER FORMS ARE
BACK-TO-BACK ON THE FOLLOWING PAGES

1983 ANNUAL MEETING

Call for suggestions for Centennial Symposia

The Council of the Society has authorized the designation of a featured Centennial Symposium for each annual meeting during the decade of the 1980s. These symposia are part of the Centennial Program and of the Decade of North American Geology. The President of the Society each year makes the final selection from suggestions and proposals made by the Program Review Committee, the Council, divisions, sections, and the membership at large.

It is hoped that each symposium will focus on an exciting new frontier of the science.

Suggestions and proposals are solicited from the membership. As this is a ten-year program, do not hesitate to send suggestions for several years in the future. Please send your suggestions to A. R. Palmer, Centennial Science Program Coordinator, Box 9140, Boulder, CO 80301, and they will be given the proper distribution.

**CALL FOR ALL OTHER 1982 SYMPOSIA PROPOSALS:
SEPTEMBER 1**

DEADLINE: JANUARY 1, 1983

FUTURE ANNUAL MEETING DATES

1983	Indianapolis, Indiana October 31–November 3
1984	Reno, Nevada November 5–8
1985	Boston, Massachusetts October 14–17
1986	San Antonio, Texas November 10–13



**THE
GEOLOGICAL SOCIETY
OF AMERICA**
P.O. Box 9140, Boulder, Colorado 80301

**FOR ACCTG
USE ONLY**
Rec. \$15 - \$30
Ck # _____
Ltr. _____
GSA _____
Add. _____

APPLICATION FOR EMPLOYMENT MATCHING SERVICE
(Please type or print legibly with **Black Ink**)

Name _____ Date _____
(last name first)
Mailing address _____
City _____ State _____ Zip code _____ If not U.S. citizen list visa _____
Date available _____ Telephone () _____
area code number (for contact during business hours)

EXPERIENCE

Must use specialty codes listed below

Choose as many as three that best describe your expertise in order of importance.

MUST have at least one listed

* 1. _____ 2. _____ 3. _____

TYPE OF POSITION DESIRED

Interested in	Specific interest	Will accept employment in
<input type="checkbox"/> Academic	<input type="checkbox"/> Administrative	<input type="checkbox"/> U.S. only
<input type="checkbox"/> Government	<input type="checkbox"/> Exploration/Production	<input type="checkbox"/> U.S. with foreign assignments
<input type="checkbox"/> Industry	<input type="checkbox"/> Field	<input type="checkbox"/> Either
<input type="checkbox"/> Other	<input type="checkbox"/> Research	
	<input type="checkbox"/> Teaching	

*Present specialty (choose one from codes below) _____ Years of experience in this specialty _____

Present employer _____ May he be contacted? Yes No

If you do not wish to be listed for employment with a specific organization, check here and list organization on an attached sheet.

Give number of years experience for any of the following that are applicable:

Administrative _____ Exploration/Production _____ Field _____ Research _____ Teaching _____ Total geological working experience _____

Foreign languages _____ Spoken (fluency) _____ Written _____

ACADEMIC TRAINING

College or University	Degree (rec'd or expected)	Year	Major	Minor

Postgraduate work beyond highest degree in (field) _____ Number of years _____

SPECIALTY CODES

Select those that best describe your ability. Use codes in bold face only when other breakdowns are inadequate.

- | | | | | |
|---|---------------------------|----------------------------------|-------------------------------|--------------------------------|
| 100. Economic Geology | 222. inorganic | 350. Mathematical Geology | 453. micropaleontology | 621. photogeology |
| 101. coal geology | 223. stable isotopes | 351. computer science | 454. paleobotany | 622. photogrammetry |
| 102. geothermal, etc. | 224. unstable isotopes | 352. statistical geology | 455. paleoecology | 630. Science Editing |
| 103. metallic deposits | 250. Geomorphology | 400. Mineralogy | 500. Petroleum Geology | 650. Sedimentology |
| 104. nonmetallic deposits | 251. Pleistocene geology | 401. crystallography | 501. exploration | 700. Seismology |
| 105. mining geology | 300. Geophysics | 402. clay mineralogy | 502. subsurface stratigraphy | 720. Stratigraphy |
| 120. Engineering Geology | 301. exploration | 410. Museum (curator) | 520. Petrology | 721. Cenozoic |
| 121. rock mechanics | 302. paleomagnetism | 420. Oceanography | 521. igneous | 722. Mesozoic |
| 150. Environmental Geology | 303. theoretical | 421. marine geology | 522. metamorphic | 723. Paleozoic |
| 151. public education and communication | 320. Hydrogeology | 422. coastal geology | 523. sedimentary | 724. Precambrian |
| 200. General Geology | 321. hydrochemistry | 450. Paleontology | 550. Planetology | 750. Structural Geology |
| 220. Geochemistry | 322. ground water | 451. invertebrate | 600. Regional Geology | 751. tectonics |
| 221. organic | 323. surface water | 452. vertebrate | 620. Remote Sensing | 752. tectonophysics |
| | 330. Library | | | 800. Volcanology |

* **Résumé must be attached.** Only one page typewritten on one side will be accepted for reproduction to employers. Include concise detail of work experience and college majors and minors on degrees.

* **Fee-\$15 if you are a Member or Student Associate of GSA (Member # _____); \$30 if you are not a member of GSA.** Payment must accompany form. Make check payable to the Geological Society of America.

I agree to release GSA or their representatives from responsibility for errors that may occur in processing or distributing this data. I understand that GSA makes no guarantee of contact by an employer in this service. I agree to notify GSA Employment Service immediately of (1) change of address, (2) acceptance of a position.

I will attend the 19____ GSA Annual Meeting in _____

* Signature (required) _____

This application will be active for 1 year.

*THESE ITEMS ARE ABSOLUTELY NECESSARY TO PROCESS THIS APPLICATION



**THE
GEOLOGICAL SOCIETY
OF AMERICA**

P.O. Box 9140, Boulder, Colorado 80301

EMPLOYER'S REQUEST FOR EARTH SCIENCE APPLICANTS

(Please type or print legibly with **Black Ink**)

R _____ -1

Name _____ Date _____

Organization _____

Mailing address _____

R _____ -2

City _____ State _____ Zip code _____ Telephone number (_____) _____
Area code Number

SPECIALTY CODES (see list below)

List the specialty code numbers that you wish to order, or check here if you want entire file of applicants in **ALL** specialties.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____

SPECIALTY CODES

100. Economic Geology	222. inorganic	350. Mathematical Geology	453. micropaleontology	621. photogeology
101. coal geology	223. stable isotopes	351. computer science	454. paleobotany	622. photogrammetry
102. geothermal, etc.	224. unstable isotopes	352. statistical geology	455. paleoecology	630. Science Editing
103. metallic deposits	250. Geomorphology	400. Mineralogy	500. Petroleum Geology	650. Sedimentology
104. nonmetallic deposits	251. Pleistocene geology	401. crystallography	501. exploration	700. Seismology
105. mining geology	300. Geophysics	402. clay mineralogy	502. subsurface stratigraphy	720. Stratigraphy
120. Engineering Geology	301. exploration	410. Museum (curator)	520. Petrology	721. Cenozoic
121. rock mechanics	302. paleomagnetism	420. Oceanography	521. igneous	722. Mesozoic
150. Environmental Geology	303. theoretical	421. marine geology	522. metamorphic	723. Paleozoic
151. public education and communication	320. Hydrogeology	422. coastal geology	523. sedimentary	724. Precambrian
200. General Geology	321. hydrochemistry	450. Paleontology	550. Planetology	750. Structural Geology
220. Geochemistry	322. ground water	451. invertebrate	600. Regional Geology	751. tectonics
221. organic	323. surface water	452. vertebrate	620. Remote Sensing	752. tectonophysics
	330. Library			800. Volcanology

Applicants seeking employment in:

- Academic
 Government
 Industry
 Other _____

Minimum degree required

- None
 B.A. or B.S.
 M.A. or M.S.
 Ph.D.

Minimum professional experience

- None
 1-5 yrs
 6-plus

Experience desired (yrs)

	None	1-5	6-plus
Administrative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exploration/Production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I am interested in interviewing applicants through the GSA Employment Service at the 19____ Annual Meeting in _____.

See attached sheet for current fee schedule.

1. I agree to use this service for valid recruiting purposes.
2. I agree that no placement charges will be assessed to any applicant participating in the GSA Employment Matching Service.

Total fee enclosed \$ _____
or invoice requested \$ _____

Signature (required)

GSA publications released in 1981

Below is a summary of new publications released by GSA during 1981. Numerous announcements of new publications are published throughout the year in the Society's journals, in this newsletter, in direct mailings, and at the various annual meetings. Watch for them in 1982.

Price lists for all GSA publications currently available can be obtained from the **Publications Sales Department**. Inquiries, orders, and requests for price lists should be addressed to that department at GSA, P.O. Box 9140, Boulder, CO 80301.

BOOK PUBLICATIONS

- Memoir 154—*Nazca Plate: Crustal Formation and Andean Convergence*, edited by LaVerne D. Kulm, Jack Dymond, E. Julius Dasch, Donald M. Hussong, and Roxanne Roderick, 834 p. + 3 microfiche cards.
- Special Paper 184—*Pacific Northwest Cenozoic Biostratigraphy*, edited by John M. Armentrout, 178 p.
- Special Paper 185—*Role of Volcanism in Climate and Evolution*, by Daniel I. Axelrod, 63 p.
- Special Paper 186—*Desert Dust: Origin, Characteristics, and Effect on Man*, edited by Troy L. Péwé, 315 p.
- Special Paper 187—*Paleontology in China, 1979*, edited by Curt Teichert, Liu Lu, and Chen Pei-ji, 272 p.
- Special Paper 188—*Sedimentary Structures in Dunes of the Namib Desert, South West Africa*, by Edwin D. McKee, 68 p.
- Microform Publication 12—*Bibliography of Circum-Pacific Plutonism*, edited by Wallace S. Pitcher and Luis Aguirre, 351 p. on 4 microfiche.
- Treatise on Invertebrate Paleontology, Part F. Rugosa, Tabulata—* 2 volumes, 808 p.
- Treatise on Invertebrate Paleontology, Part W, Supplement 2, Conodonts—* 230 p.

PERIODICALS

- Bulletin, Part I—*1,080 p.
- Bulletin, Part II—*2,684 p., on 43 microfiche.
- Geology—*640 p.
- News & Information—*232 p.

MAP AND CHART PUBLICATIONS

- MC-28L—*Geologic Cross Section of the Sierra Nevada and the Great Basin along 40° North Latitude, Northeastern California and Northern Nevada*, by R. C. Speed and E. M. Moores. Two sheets in color 49" x 40". Scale 1:250,000. With 12 p. text, in illustrated file envelope.
- MC-28M—*Geologic Cross Section from the Sierra Nevada to the Las Vegas Valley*, by L. A. Wright, B. W. Troxel, B. C. Burchfiel, R. H. Chapman, and T. C. Labotka. One sheet in color 30" x 52". Scale 1:250,000. With 16 p. text, in illustrated file envelope.
- MC-28N—*Geologic Cross Sections, Northern California Coast Ranges to Northern Sierra Nevada, and Lake Pillsbury Area to Southern Klamath Mountains*, J. C. Maxwell, compiler. One sheet in color 55" x 36½". Scale 1:250,000. With 8 p. text, in illustrated file envelope.
- (Note: The continuing MC-28 series is from Plate Margins Project, U.S. Geodynamics Committee, John C. Maxwell, Reporter.)
- MC-35—*North Atlantic Ocean: Bathymetry and Plate Tectonic Evolution*, by R. K. Perry, H. S. Fleming, P. R. Vogt, and others. One sheet in color 56" x 41". Scale at the equator 1:8,753,909. With text, in illustrated file envelope.

- MC-36—*Seasonal Reconstructions of the Earth's Surface at the Last Glacial Maximum*, by CLIMAP Project Members, Andrew McIntyre, leader LGM Project. Seventeen maps in color. With 18 p. text, in illustrated file envelope.
- MC-37—*Lake Superior Area. Lake Superior—Bouger Gravity Map, and Lake Superior—Total Magnetic Intensity Map*, by Norbert W. O'Hara. Two sheets in color 36" x 23". Scale 1:750,000. With 12 p. text in illustrated file envelope.
- MC-38—*Lake Michigan Area. Lake Michigan—Bouger Gravity Map, and Lake Michigan—Total Magnetic Intensity Map*, by Norbert W. O'Hara. Two sheets in color, 24" x 34". Scale 1:750,000. With 12 p. text in illustrated file envelope.
- MC-39—*Lake Huron Area. Lake Huron—Bouger Gravity Map, and Lake Huron—Total Magnetic Intensity Map*, by Norbert W. O'Hara. Two sheets in color, 29" x 26". Scale 1:750,000. With 12 p. text in illustrated file envelope.
- MC-40—*Michigan Basin Area. Southern Peninsula of Michigan—Bouger Gravity Map, and Southern Peninsula of Michigan—Total Magnetic Intensity Map*, by Norbert W. O'Hara. Two sheets in color 30" x 27". Scale 1:750,000. With 12 p. text in illustrated file envelope.
- MC-41—*Great Lakes Area. Great Lakes Region—Bouger Gravity Map, and Great Lakes Region—Total Magnetic Intensity Map, and Great Lakes Region—Free Air Gravity Map*, by Norbert W. O'Hara. Two sheets in color, 28" x 33". Scale 1:2,500,000. With 12 p. text in illustrated file envelope.
- MC-42—*Free-Air Gravity Field of the Southwest Pacific Ocean*, by A. B. Watts, M. G. Kogan, J. Mutter, and others. Two sheets in color 30" x 50". Scale 1:4,000,000. With 5 p. text in illustrated file envelope.
- MC-43—*Bathymetry of the Northeast Pacific*, by J. Mammerickx and S. M. Smith. One sheet in color 46" x 40". Scale at the equator 1:6,442,194. In illustrated file envelope.

OTHER PUBLICATIONS

- Abstracts with Programs—*seven books published, 600 p. total.
- Division newsletters—13 published, 89 p. total.
- Membership Directory—*200 p.
- Memorials Volume XII—*124 p.

REPRINTS

- MC-32—*Tectonic Map of South America*, published under the auspices of Ministry of Mines and Energy, DNPM, Brazil, and distributed by GSA. Two sheets in color, with 107 p. text, in illustrated file envelope.
- Rock-Color Chart*, by the Rock-Color Chart Committee, 16 p. with Munsell system color chips, plus protective envelope.
- Future Employment Opportunities in the Geological Sciences*, 16 p.
- Treatise on Invertebrate Paleontology, Part O, Arthropoda*, 584 p.



NEW BOOKS AND MAPS FROM THE GEOLOGICAL SOCIETY OF AMERICA

Geological Society of America Special Paper 183

The Scientific Ideas of G. K. Gilbert

Edited by Ellis L. Yochelson

Grove Karl Gilbert was a great scientist, there was little question about that, but he wasn't always correct in his conclusions. Following a careful study of Meteor Crater in northern Arizona, Gilbert concluded that the crater was the result of a steam explosion caused by ground water and magma. Although Gilbert felt compelled to reject meteoric impact origin for this crater, his ever-present objectivity led him in the end to conclude that all the evidence was not in yet. That is in 1896.

But if Gilbert had been able to travel to the moon on

one of the recent probes, he would have been pleased with the accuracy of sketches he made of the lunar landscape late in 1892. His contributions to glacial geology, to knowledge of igneous structures, to studies of faults, scarps, and earthquakes are all classics now but were received with skepticism by many of his contemporaries and were not fully accepted for about a quarter of a century. Modern surveys have confirmed his principal conclusions.

The Scientific Ideas of G. K. Gilbert is not intended as a *festschrift* volume honoring this pioneer of American geology, but the record of his research in so many areas—Lake Bonneville studies, gravity and isostasy, ground water, bedding rhythms and geochronology, the origin of barrier shorelines, iceberg-calving glaciers, sediments, and others—does do honor to the best known scientist on the USGS's original staff. Many of Gilbert's original photographs are sprinkled throughout these 14 chapters of fascinating reading for all geologists and geologists-to-be.

Special Paper 183, viii + 148, 8½ x 11, perfect bound \$17.00
LC-80-67676. ISBN 0-8137-2183-0. 83 figures, 4 tables

To order, send \$17.00* in U.S. funds (plus 3½% sales tax for Metro Denver delivery, 5½% Boulder, 3% other Colorado) with name and mailing address to GSA Publication Sales Department, P.O. Box 9140, Boulder, CO 80301.

*GSA Member discount allowed when claimed.

FIRST TIME OFFERED

Geological Society of America Special Paper 185

ROLE OF VOLCANISM IN CLIMATE AND EVOLUTION

By Daniel I. Axelrod

Although Late Cretaceous extinctions commenced as epeiric seas retreated, the pulses of sharply lowered temperature induced by explosive volcanism, together with widespread falls of volcanic ash, may have led to extinction of dinosaurs, ammonites, cycadeoids, and other Cretaceous taxa. Earlier, as Pangaea was assembled, Permian extinctions resulted not only from the elimination of oceans, epeiric seas, and shorelines, and the spread of more-continental climates, but also from the climatic effects of major pulses of global volcanism and Gondwana glaciation.

Thus ends the abstract of this new and exciting GSA Special Paper. Dr. Axelrod presents many aspects of volcanism: historic effects, volcanism during the Tertiary, Miocene forests and volcanism, Oligocene forests and volcanism, and volcanism's effects on Tertiary mammals, grassland, woodland, and on marine life. He also presents information on volcanism during the Cretaceous with emphasis on its effects not only on parts of the western U.S. and the Gulf Coast but in the West Indies, China, Japan, and India and the Himalayas. Fascinating and informative reading.

Role of Volcanism in Climate and Evolution \$ 7.00



NOW YOU CAN CHARGE YOUR PURCHASES
TO YOUR MASTERCARD OR VISA ACCOUNT



Announcing . . .

**TREATISE ON INVERTEBRATE PALEONTOLOGY
PART F (SUPPLEMENT 1) COELENTERATA
Anthozoa: Subclasses Rugosa and Tabulata**

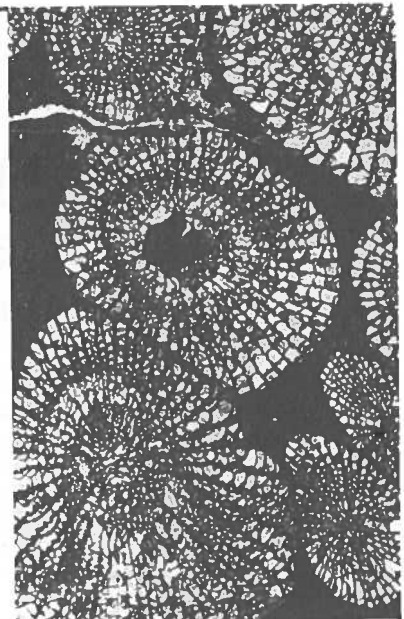
In this two-volume Supplement, Professor Dorothy Hill completes eight years of full-time dedication to the revision of the 1956 treatments of the Rugosa and Tabulata. The increase in knowledge of these subclasses, including many taxa first published in Russian and Chinese, is reflected in the expansion of systematic descriptions from 92 pages in the earlier edition to 497 pages (more than 1,050 generic descriptions) in this Supplement. A special effort has been made to facilitate the study of actual types and supporting series of specimens by including their locations and catalogue numbers wherever possible. Works published before the end of 1976 are covered completely, and genera named between then and September 1978 are included in the text but without illustration. Names new through 1980 are briefly covered in an appendix.

The Supplement is designed to be used as a single work, divided for ease of handling into two volumes of roughly equal size. The volumes are not available separately.

Treatise on Invertebrate Paleontology, Part F (Supplement 1) Coelenterata (Anthozoa: Rugosa and Tabulata) in 2 volumes, 1980, x1 + 762 p., 462 figures (3,317 photos and line drawings), 3 tables, LC: 53-12913; ISBN 0-8137-3029-5 . . . \$38.00

To order, send \$38.00* in U.S. funds (plus 3½% sales tax for Metro Denver delivery, 5½% Boulder, 3% other Colorado) with name and mailing address to GSA Publication Sales Department, P.O. Box 9140, Boulder, CO 80301.

*GSA Member discount allowed when claimed.



Transverse section, approximately X2.5, of *Tipheophyllum bartrumi* (Allan), from the Reefton Limestone, New Zealand; from Part F (Supplement 1), vol. 1, page 291.

**Write for free brochure listing
all available parts of Treatise
on Invertebrate Paleontology.**

JUST RECEIVED

GSA Special Paper 186
Desert Dust:
Origin,
Characteristics,
and
Effect on Man

Edited by Troy L. Péwé

Forty-six authors from five countries discuss the effect of desert dust on man as viewed from their own disciplines of geology, physical geography, microbiology, engineering, physics, meteorology, soil science, chemistry, oceanography, agricultural science, and highway engineering. Because of the international importance of this volume, the tables of contents and the abstracts of most chapters are presented in English, French, German, Russian, and Chinese.

Special Paper 186, xii + 303, 8½ x 11, soft bound in a sturdy leatherette cover, 3 full-color plates, CIP, ISBN 0-8137-2186-5 \$30.00

To order, mail check or money order in U.S. funds for full amount or include MasterCard or VISA account card number, expiration date, and your signature. GSA member discount allowed when claimed. Colorado residents add applicable sales tax: Denver metro—3½%; Boulder—5½%; other Colorado—3%.

Mail order to: Publication Sales, Geological Society of America, P.O. Box 9140, Boulder, CO 80301



NAZCA PLATE:

CRUSTAL FORMATION AND ANDEAN CONVERGENCE

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

Memoir 154 is organized into five sections:

INTRODUCTION — One chapter covering the history of the Nazca Plate Project: project initiation, objectives, participants, cruise activities, and publications.

DIVERGENT BOUNDARY — Four chapters on the evolution of the oceanic crust at the spreading East Pacific Rise.

METALLIFEROUS SEDIMENTS — Eight chapters on the sedimentation on the evolving crust as it is transported across the Nazca Plate.

CONTINENTAL MARGIN AND TRENCH — Fifteen chapters covering the disruption and destruction of the subducting plate along the Peru-Chile Trench and its influence on the evolution of the Andean continental margin.

ANDEAN CONVERGENCE ZONE — Seven chapters on the effect of subduction on the volcanism, mountain building, and ore deposits of the Andes.

In *Nazca Plate: Crustal Formation and Andean Convergence*, 56 authors discuss the tectonics of the Nazca-Pacific divergent plate boundary, geochemistry of Nazca plate surface sediments, uranium and thorium isotopic investigations, formation and growth of ferromanganese oxides, economic appraisal of Nazca plate metalliferous sediments, biogeography of benthic foraminifera, estimation of depth to magnetic source using maximum entropy power spectra, a geophysical survey of the Chile Margin triple junction, volcanic gaps and the consumption of aseismic ridges in South America, convergence and mineralization, and many others. The volume is dedicated to George P. Woollard.

Hard bound, x + 824 pages, 7" x 10", more than 400 illustrations and plates Price only \$18.00*

*This attractive price made possible by a generous contribution to GSA.

GSA Map and Chart Series

North Atlantic Ocean: Bathymetry and Plate Tectonic Evolution

Naval Research Laboratory • Acoustic Media Characterization Branch

This beautiful chart printed in hypsometric tints from surrounding land masses to sea level and down to 8,000 metres depth is a full 56 by 41 inches. Magnetic lineations, earthquake epicenters, and deep sea drilling program sites appear on the reverse side of the chart for obverse viewing. When a light source is placed behind the chart, these data become visible and can be viewed relative to the bathymetry on the front. Scale at equator 1:8,753,909.

Inserts on this chart include (A) paleobathymetric charts at various stages of evolution of the North Atlantic, (B) a time scale (chronology) of geomagnetic reversals, (C) crustal age versus distance from Mid-Atlantic ridge western North Atlantic, and (D) a map of the North Atlantic where known or presumed oceanic crust is color-coded in intervals of the stratigraphic time scale.

MC-35 Rolled \$10.25 Folded \$8.75

ALSO AVAILABLE

Geologic Cross Section of the Sierra Nevada and the Great Basin along 40°N. lat., Northeastern California and Northern Nevada by R. C. Speed and E. M. Moores. Two sheets in color 49" x 40" each, with 12-page text.

MC-28L Rolled \$14.00 Folded \$12.50

Geologic Cross Section from the Sierra Nevada to the Las Vegas Valley, Eastern California to Southern Nevada by L. A. Wright and others. One sheet in color 51" x 32" with 16-page text.

MC-28M Rolled \$15.75 Folded \$14.25

Geologic Cross Sections, Northern California Coast Ranges to Northern Sierra Nevada, and Lake Pillsbury Area to Southern Klamath Mountains by J. C. Maxwell and others. One sheet in color 55" x 36½" with 8-page text.

MC-28N Rolled \$12.00 Folded \$10.50

Order from
GSA Publications Sales
P.O. Box 9140
Boulder, CO 80301

Item	Price each	Qty	Total
MC-28L	Rolled \$14.00		
MC-28L	Folded \$12.50		
MC-28M	Rolled \$15.75		
MC-28M	Folded \$14.25		
MC-28N	Rolled \$12.00		
MC-28N	Folded \$10.50		
MC-35	Rolled \$10.25		
MC-35	Folded \$8.75		

Sales tax* _____
Total _____

check money order in U.S.
funds enclosed for total amount.

Name _____

GSA Member No.** _____

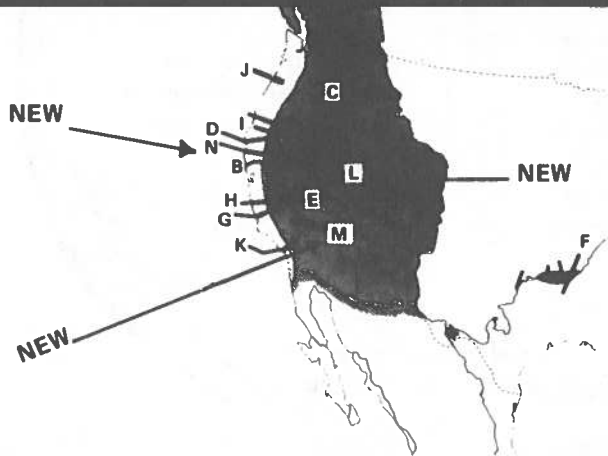
Address _____

City _____

State _____ Zip _____

*Metro Denver 3½%, Boulder 5½%,
other Colorado 3%.
**GSA Member discount allowed.

THREE NEW
GEOLOGIC CROSS SECTIONS
FROM GSA



These new additions to our popular MC-28 series created by the Plate Margins Working Group, U.S. Geodynamics Committee, are now available:

MC-28L Geologic Cross Section of the Sierra Nevada and the Great Basin along 40°N. lat., Northeastern California and Northern Nevada. By R. C. Speed and E. M. Moores. Two sheets in color 49" x 40" each, with 12-page text. 1:250,000.
MC-28L Rolled \$14.00 Folded \$12.50

MC-28M Geologic Cross Section from the Sierra Nevada to the Las Vegas Valley, Eastern California to Southern Nevada. By L. A. Wright, B. W. Troxel, B. C. Burchfiel, R. H. Chapman, and T. C. Labotka. One sheet in color 51" x 33", with 16-page text. 1:250,000.
MC-28M Rolled \$15.75 Folded \$14.25

MC-28N Geologic Cross Sections, Northern California Coast Ranges to Northern Sierra Nevada, and Lake Pillsbury Area to Southern Klamath Mountains. By J. C. Maxwell, S. D. Etter, D. M. Fritz, P. R. Gucwa, J. R. Kleist, D. H. Lehman, J. R. Raney, and D. M. Worrall. One sheet in color 55" x 36½", with 8-page text. 1:250,000.
MC-28N Rolled \$12.00 Folded \$10.50

中国古生物学会编印

1979年4月 苏州

Just arrived . . .

Paleontology
in China
1979

Edited by Curt Teichert, Liu Lu, and Chen Pei-ji

Scientific work all over China had been severely disrupted from 1966 to 1976, but following 1976 a tremendous surge of scientific activities were triggered. One of these activities was the meeting of the Palaeontological Society of China held in Suzhou, April 16 to 22, 1979. More than 250 papers covering most aspects of paleontology were presented, and this new GSA Special Paper contains 24 of the papers presented at that meeting.

Partial list of contents:

- Invertebrate paleontology in China, 1949-1979, by Yin Zan-xun.
- Thirty years of micropaleontological research in China by Lu Yan-hao, Yu Chang-min, and Chen Pei-ji.
- Vertebrate paleontology in China, 1949-1979, by Hao Yi-chun.
- Thirty years of paleobotany in China, 1949-1979, by Zhou Ming-zhen.
- On the genus *Paleofusulina* by Rui Lin and Sheng Jin-zhang.
- Lower Cambrian archaeocyathid assemblages of central and southwestern China by Yuan Ke-xing and Zhang Sen-gui.

Perfect bound, viii + 264 pages, 8½ x 11, more than 50 illustrations and plates, CIP, ISBN 0-8137-2187-3 . . . \$44.00

Address all orders to:

Publication Sales Department
Geological Society of America
P.O. Box 9140
Boulder, Colorado 80301

Date _____

Please send to: _____ GSA member number _____

Name _____

Address _____

City _____

State/Province _____ Zip Code _____

check enclosed MasterCard VISA

Card Number _____

Expiration Date _____

Signature _____

ORDER FORM

Qty.	Series and number (or other brief description)	Price each	TOTAL
	Colorado Residents add applicable sales tax	TAX	
		TOTAL	

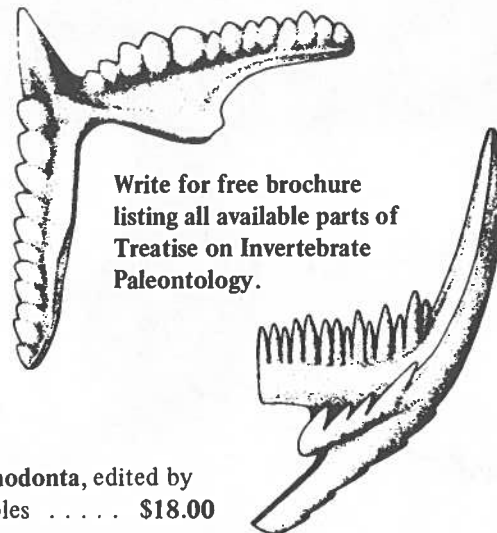
- Payment in U.S. funds must accompany all orders for up to \$50 regardless of their point of origin. Postage and handling charges are waived on these orders.
- GSA member discount (see reverse side of membership card) allowed when claimed.
- Orders in excess of \$50 will be accepted on open account only when originating within North America or a U.S. possession. The Society reserves the right to limit credit to organizations and individuals with established lines of credit.
- Denver metro residents— add 3½% sales tax; Boulder residents— add 5½% sales tax; Colorado residents— add 3% sales tax.



**TREATISE ON INVERTEBRATE PALEONTOLOGY
PART W, MISCELLANEA (SUPPLEMENT 2) CONODONTA**

Conodonts are an extinct group of microscopic marine organisms, the precise biology of which continues to elude discovery. Extremely important in the study of worldwide biostratigraphy, their value in correlation of Cambrian through Triassic rocks is not exceeded by any other group of fossils.

This new Supplement contrasts with the original Part W primarily in the elevation of the Conodonts to phylum and in the organization of 180 of 240-odd taxa into biologic genera rather than form-genera. Also contains an introduction covering macromorphology, internal structure and micro-oranamentation, extinction, paleoecology, and much more.



Write for free brochure listing all available parts of **Treatise on Invertebrate Paleontology**.

Treatise on Invertebrate Paleontology, Part W, Miscellanea (Supplement 2) Conodonts, edited by R. A. Robison, xxviii + 202 p., color frontispiece, 122 figs. (859 photos), 6 tables **\$18.00**

Order from: *GSA Publications Sales, P.O. Box 9140, Boulder, CO 80301*

Name _____
 GSA Member No. _____
 Address _____
 City _____
 State/Province _____ Zip _____
 Card Number _____
 Expiration Date _____
 Signature _____

Qty		Price each	Total
	Treatise, Part W, Miscellanea (Sup. 2) Conodonts	\$18.00	

Sales tax _____

Total _____



check money order in U.S. funds enclosed for total amount. VISA MasterCard.

Metro Denver 3½%, Boulder 5½%, other Colorado 3%
 GSA Member discount allowed when claimed

INSIDE---

Schedule for 1983 section meetings 80
 1982 Annual Meeting advance notice 82
 GSA Employment Service information and forms 84, 85, 86
 GSA publications released in 1981 87

 <p>THE GEOLOGICAL SOCIETY OF AMERICA P.O. Box 9140 • 3300 Penrose Place Boulder, Colorado 80301</p>	<p>SECOND CLASS Postage Paid at Boulder, Colorado and at additional mailing office</p>
--	---