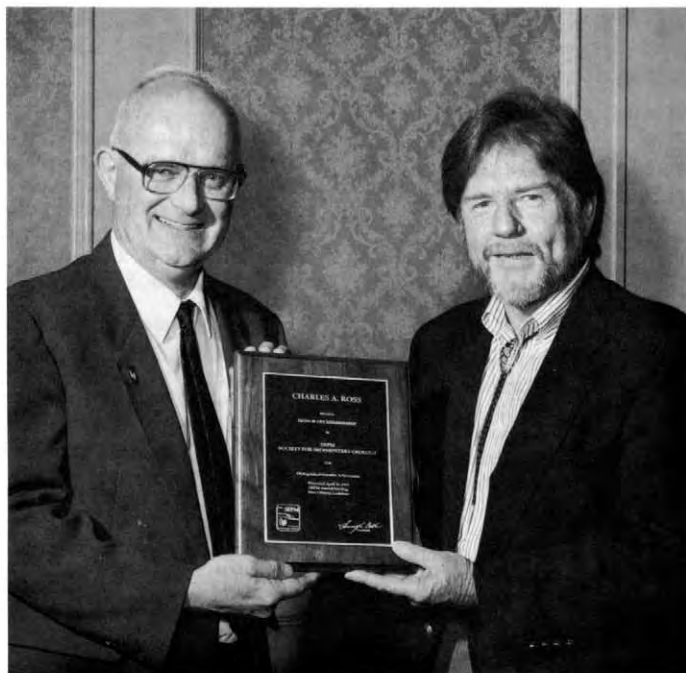
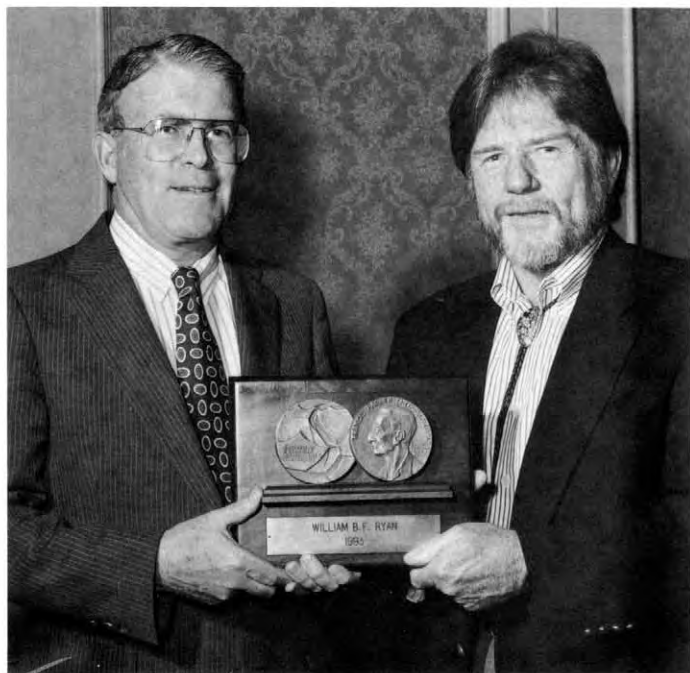


## SOCIETY RECORDS AND ACTIVITIES

### SEPM 1993 ANNUAL MEETING



Charles A. Ross, left, accepts Honorary Membership from President Harry Cook.



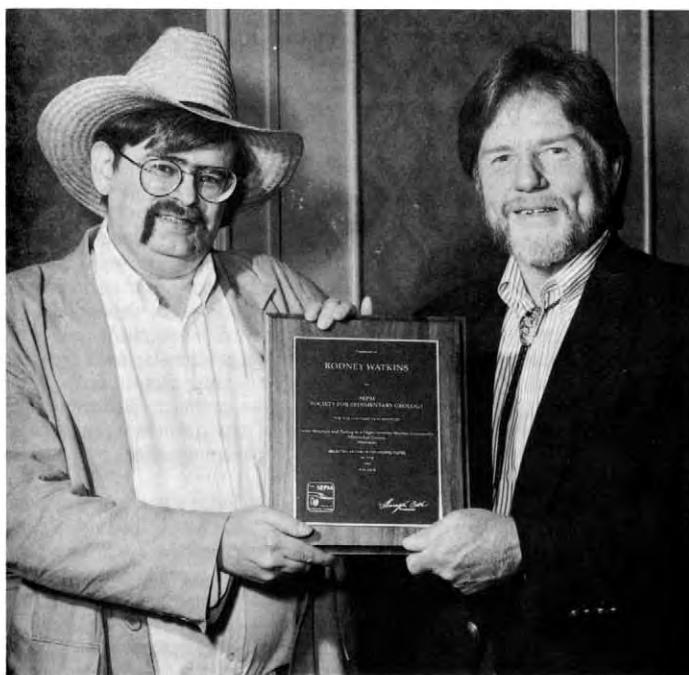
William B.F. Ryan, left, accepts the Shepard Medal from President Harry Cook.



Reuben J. Ross, Jr., left, accepts the Moore Medal from President Harry Cook.



Charles Campbell, left, accepts the Pettijohn Medal from President Harry Cook.



Rodney Watkins, left, accepts the award for the Outstanding Paper in the 1991 *PALAIOS* from President Harry Cook.



SEPM Council, 1993-94. Seated, left to right: David J. Bottjer, Editor, *PALAIOS*; Noel P. James, President-Elect; Sherwood W. Wise, Jr., President; Emily L. Stoudt, Secretary-Treasurer; John B. Southard, Editor, *Journal of Sedimentary Petrology*. Standing, left to right: Peter A. Scholle, Editor, Special Publications; David A. Budd, Sedimentology Councilor; Raymond L. Ethington, President, SEPM Foundation, Inc.; S.J. Mazzullo, Councilor for Research Activities. Not pictured: Carlton Brett, Paleontology Councilor.

## REPORT AND MINUTES OF THE SIXTY-SEVENTH ANNUAL MEETING OF THE SEPM (SOCIETY FOR SEDIMENTARY GEOLOGY)

The Sixty-Seventh Annual Meeting of the SEPM (Society for Sedimentary Geology) was held in New Orleans, Louisiana, 25–28 April 1993, in conjunction with the Annual Convention of the American Association of Petroleum Geologists.

W.A. Berggren, D.V. Kent, and J. Hardenbol convened the SEPM Research Symposium "Geochronology, Time Scales, and Correlation: Framework for a Historical Geology". Other technical sessions of the Society's program consisted of papers on carbonate and evaporite depositional systems; geochemical stratigraphy; outcrops, cores and subsurface examples of deep-water depositional systems; sequence stratigraphy; carbonate exploration and development; salt tectonics; early diagenesis through catagenesis; deep-water depositional systems; carbonate diagenesis; new applications of geochemistry; siliciclastic depositional systems; oil-source applications of geochemistry; cretaceous carbonate platforms; siliciclastic diagenesis; analysis of micropaleontological data; quantitative modeling of petroleum systems and fluid flow; and quantitative stratigraphic and structural modeling.

Poster sessions presented at this year's meeting included sessions on a sequence stratigraphic framework of diagenesis and porosity; carbonate diagenesis; application of isotope and trace-element composition of pore fluids to carbonate diagenesis; lacustrine rocks and sediments; siliciclastic diagenesis; computer simulations of geologic processes and systems; deep-water depositional systems; new applications of geochemistry; sequence stratigraphy sedimentary basin architecture; carbonate and evaporite depositional systems; mixed carbonate-siliciclastic depositional systems; high-frequency cyclicity in sequence stratigraphy; nannofossil biostratigraphy; sedimentary record of climatic changes; applications of biostratigraphy to stratigraphic problems; dolomitization and porosity evolution; mesozoic-cenozoic seismic stratigraphy and depositional history; carbonate reservoir sedimentology; cretaceous carbonate platforms; siliciclastic depositional systems; and salt tectonics.

At the President's Reception and Awards Ceremony on Monday evening the Society recognized the following individuals: Rodney Watkins, recipient of the award for Outstanding Paper in *PALAIOS*; Andrew D. Miall, recipient of the award for Outstanding Paper in the *Journal of Sedimentary Petrology*; Charles Campbell, recipient of the Francis J. Pettijohn Medal; Reuben J. Ross, Jr., recipient of the Raymond C. Moore Medal; William B.F. Ryan, recipient of the Francis P. Shepard Medal; Charles A. Ross, recipient of Honorary Membership; and Robert H. Dott, Jr., recipient of the William H. Twenhofel Medal.

### ANNUAL BUSINESS MEETING Tuesday, 27 April 1993 New Orleans, Louisiana

The meeting was called to order at 12:30 p.m. by President Harry E. Cook, who introduced the SEPM Council and Staff. The minutes of the 1992 Annual Business Meeting were approved as written. President Cook presented his report. He announced that SEPM had rejoined AGI, and that membership in SEPM increased for the first time since 1986. He also described an International Outreach Program granting seven-year international membership awards to thirty-two geoscientists in Russia, Siberia, Kazakhstan, China, and Poland. The Gulf Coast Section of SEPM sponsored two of these awards.

Cook announced Jacques Metzger of the University of Geneva was the winner of the SEPM logo contest. He reported SEPM is initiating a Visiting Scientist Program which will send a scientist abroad for one or two weeks to interact with local societies, possibly beginning in 1995. Cook also announced the name of the *Journal of Sedimentary Petrology* will change to the *Journal of Sedimentary Research* and will be issued in two parts: Part A Sedimentary Petrology and Processes and Part B Stratigraphy and Global Studies.

President Cook reported that the Council had recommended a revision to the SEPM Bylaws adding the President of the SEPM Foundation Inc. to the Board of Directors (Council) of the Society. (Complete text follows this report.) The motion was approved. Emily Stoudt, Secretary-Treasurer, reported that the SEPM continued to improve financially as a result of royalties received from the Copyright Clearance Center.

Distinguished Speaker Harry Cook presented a lecture on the status of sedimentary geology in the former Soviet Union. At the conclusion of his address he

introduced the 1993–94 Council and presented the gavel to Incoming President Sherwood W. Wise, Jr. Dr. Wise thanked those members of the Council whose terms were expiring for their dedicated service to the Society.

There being no other business, the meeting was adjourned by President Wise.

Respectfully Submitted  
Emily L. Stoudt  
Secretary-Treasurer

### BY-LAWS REVISIONS

#### BY-LAWS OF SEPM (Society for Sedimentary Geology)

(Insertions in **boldface italics**; deletions in [brackets])

#### ARTICLE VI

#### BOARD OF DIRECTORS

Section 6.1. The executive authority of this Society shall be vested in a Board of Directors (herein called "Council") consisting of **ten (10)** [nine (9)] members. Council membership shall include the president, president-elect, secretary-treasurer, the journal editors, the special publications editor, [and] three councilors [.] **and the President of the SEPM Foundation, Inc.**

#### ARTICLE VII

#### OFFICERS

Section 7.1. The officers of this Society shall be as follows: president, president-elect, secretary-treasurer, councilor for paleontology, councilor for sedimentology, councilor for research activities, an editor for special publications, **the President of the SEPM Foundation, Inc.**, and the editors for the official periodical publications as named in Article X of these Bylaws. Terms of office shall commence at the close of the annual business meeting.

### REPORT OF THE PRESIDENT (Harry E. Cook)

The sixty-seventh year of SEPM found the Society growing financially as well as in membership. Council voted to revise the By-Laws to add the President of the SEPM Foundation Inc. to Council, a move which should strengthen both the Society and the Foundation. The SEPM membership approved this action at the Annual Business Meeting in New Orleans, Louisiana on Tuesday, 27 April 1993.

SEPM finds its strength in the diligent work of its volunteers, many of whom serve on the various committees which oversee Society activities and advise Council. Summaries of many of these committees' activities have been submitted by their chairpersons, and are listed below.

*SEPM Headquarters and Business Committee (Daniel F. Merriam).*—The Committee monitors and supports Headquarters activities, and reviews and recommends the budget to Council. This year the Committee was asked to study the short- and long-range investment policies of the Society. Several personnel changes took place during the year and the Committee studied the effectiveness and turnover and retention of staff with the possibility of reorganization and/or reassignments. A survey of staff benefits was made and the evaluations of staff by the Executive Director were reviewed and recommendations made. The Continuing Education program was revamped and a new coordinator hired. It was a pleasure to note that intensive efforts by Headquarters was effective in improving the membership situation after several years of decline. Electronic publishing, networking, e-mail, and information dissemination occupied much time during the

year. The way in which to accomplish and implement these changes and the equipment needed to do so was explored in some depth. Several changes and upgrades were made including connection to e-mail and implementation of a news bulletin board (through COGS in Denver). The new editor of *Journal of Sedimentary Petrology* indicated a willingness to try at least some aspects of electronic publication and has moved the processing of manuscripts for the journal in that direction. New and better ways of information dissemination were the topics of considerable discussion. The Committee considered events and functions which could be part of the Society's Diamond Jubilee (75th Anniversary) in 2001. All-in-all it was a good year. The financial situation continued to improve, Headquarters Staff functioned well, the membership situation improved, and the information dissemination and publications showed promise of improvement.

*Developing Countries' Libraries Committee (Abhijit Basu).*—The good news is that a few individual donors and their organizations have come forward to ship some books and journals to developing countries' libraries. This is very welcome because in the absence of Smithsonian Institution's support, SEPM cannot afford the international mailing cost of all the books and journals that are donated by so many. SEPM is continuing to provide gratis subscription of JSP/JSR and PALAIOS to about 30 libraries. A few members have ear-marked their journals to be sent to a deserving library. The cost of mailing is met from the cash donations of members, usually made with their subscription renewals. One of our recent initiatives is an effort to assess the efficacy of our program by polling the recipient libraries and departments. DCLC is always seeking advice from the membership and we welcome any suggestions and active participation in our program of "giving".

*Membership Committee (S.A. Graham).*—The principal focus of the SEPM Membership Committee during the past year was development of initiatives to reverse a nine-year decline in SEPM membership. By focusing on specific groups, joint efforts by the Membership Committee and SEPM Headquarters Staff yielded new memberships sufficient to finally reverse the long-term slide in membership. Specific focal efforts of the Membership Committee in the past year, accomplished with major support from SEPM Headquarters Staff, included: (1) Membership retention: Headquarters Staff facilitated the conversion of eligible Associate Members to full membership. (2) Students: Through the efforts of Elizabeth Burton, the campus representative program was revitalized. Twenty-one SED Awards were made, and this successful program probably will be expanded to include additional graduate programs, undergraduate institutions, and institutions outside of North America. (3) Petroleum industry: An industry representative program, analogous to the campus rep program, is in place to provide a personal contact point between SEPM and earth scientists in major petroleum companies. (4) Special membership: President Harry Cook, Past-President Gail Ashley, and Councilor Steve Graham presented a limited number of SEPM memberships to distinguished scientists in the former Soviet Union, eastern Europe and China, in order to make SEPM more accessible and visible to scientists in these rapidly changing regions. In 1993, SEPM Council will expand this pilot program into a separate program shepherded by Harry Cook. (5) Attendees of SEPM Research Conferences: The numerous non-SEPM members who attend SEPM Research Conferences were invited to enjoy the considerable benefits of SEPM membership. (6) SEPM Section members: SEPM Section members who are not also members of SEPM were invited by mail to realize the benefits of SEPM membership.

*Publications Committee (Barbara H. Lidz).*—Special Publications: *Origin, Diagenesis and Petrophysics of Clay Minerals in Sandstones* (No. 47) was released in April 1992, *Quaternary Coastal and Lacustrine Systems of the United States* (No. 48) was released in February 1993, and *Applications of Paleomagnetism to Sedimentary Geology* (No. 49) was in press and scheduled to be released in November 1993. The following titles have been approved for Special Publications: *Sedimentary Records of Modern and Ancient Saline Lakes; Incised Valley Systems: Origin and Sedimentary Sequences; Geology, Time Scales and Stratigraphic Correlation; Stratigraphic Development in Foreland Basins, and Graphic Correlation and Composite Standard Approaches to Biostratigraphy*. The title *Influence of Sea Level on Deposition, Diagenesis, and Sequence Stratigraphy*, previously approved as Special Publication No. 47, was withdrawn by the editors. Concepts in Sedimentology and Paleontology *Tectonic and Eustatic Controls on Sedimentary Cycles* (Vol. 4) is in review by the SP Editor and is scheduled to be released in the Fall of 1993. Two other titles were considered for the camera-ready series and were declined by the committee. The first two volumes of the Atlas Series are in the final stages of preparation. *Shallow-Water Carbonate Deposits* (Vol. 1) and *Atlas of Ichnofacies* (Vol. 2) were scheduled for release in 1993 and early 1994, respectively. Four of the Special Publications titles and one of the Atlas Series titles were approved by mail ballot, thereby reducing the time between proposal submission and approval significantly.

*K-12 Earth Science Education Committee (Heather Macdonald).*—The Committee on K-12 Earth Science Education is working both to increase the involve-

ment of sedimentary geologists in earth science education and to provide hands-on activities that geologists and K-12 teachers can use in the classroom. This year we continued to work with precollege teachers, using activities from the two books we have produced, *A Sedimentary Geologists' Guide to Helping K-12 Earth Science Teachers* and *Hands-On Geology: K-12 Activities and Resources*. Committee members work with teachers locally and at regional and national meetings. We sponsored a field trip (Mississippi Delta flyover) for teachers and co-sponsored (with AAPG) a workshop for teachers at the AAPG/SEPM meeting in New Orleans. The enthusiastic response by teachers suggests these are effective. We are a member of the Coalition for Earth Science Education (CESE); with other member organizations we are responding to documents on national standards for science education. Our next project is a book on K-6 geology activities. We have written an article for each of the SEPM newsletters to keep SEPM members informed about committee activities and to encourage them to get involved in earth science education.

*Computer Applications Committee (W. Lynn Watney).*—Extensive electronic compilations of references on specific geological topics are being developed by SEPM members. Arrangements are being made to distribute those offered to SEPM via diskette or other media, e.g., carbonate bibliography prepared by Peter Scholle. Software included with citations will search key words, organize and sort entries, insert references, and build bibliographies with word processing software. Other reference sets are sought. A digital cumulative index of SEPM journals that can be electronically accessed by SEPM members is under discussion. Electronic communication between SEPM, the Business Office, committees, Council, and meeting planners will be in operation by mid-1993 via Internet. A file server and moderator will permit review and comment of files, file transfer, and conferencing. The Computer Contribution Series now has a submission procedure and policy, all described in a brochure. The series, edited by Dan Merriam, needs more good computer programs. New titles are in review and planned for release in late 1993. It has been several years since the last special session on computers was held at an Annual Meeting. Ideas and presenters are needed for sessions/short courses/workshops on computing. Topics currently being considered include computing tools to aid research and introduction to quantitative basin/stratigraphic modeling, the latter reflecting the keen interest of many SEPM members to go beyond qualitative approaches. Computer-aided multimedia presentations in the classroom is another topic being considered for a workshop. The Computer Applications Committee has also acted as resource to SEPM on such matters as exploring potential uses of CD-ROM technology.

*Research Committee (S.J. Mazzullo).*—In 1992 the Research Committee initiated a new program for promoting proposal submissions for SEPM Symposia and SEPM Research Conferences. Beginning at the AAPG-SEPM Annual Meeting in 1993, calls for and procedures involved in submitting proposals for symposia and conferences were advertised to the audience attending each Research Group meeting, and to the audience attending symposia. This program has already proven successful in generating proposals. The Committee approved revisions in the Procedures to strengthen the effectiveness of the Research Groups in Committee matters by adding to the Committee up to 10 new voting members, on a rotating basis, from these groups. The Research Committee formally approved the following proposals for SEPM Symposia: (1) "Geochronology, Time Scales, and Correlation: Framework for an Historical Geology", organized by W. Berggren and others, convened in New Orleans in 1993; and (2) "Sequence Development and Eustasy: Evidence For and Against", organized by J. Pindell, W. Wornardt, W. Pitman, and P. Vail, to be convened in Denver (1994). It also approved the following Research Conferences: (1) "Siliciclastic-Carbonate Facies Variations: Sedimentology, Diagenesis, Biogeography", organized by P. Krutak and others, to be convened in Vera Cruz, Mexico in 1994; (2) "Clastic Deposits of the Transgressive Systems Tract: Facies, Stratigraphy, and Reservoir Character", organized by E. Clifton and others, to be convened in Washington in 1994; (3) "Basin-Wide Diagenetic Patterns—Petrologic, Geochemical, and Hydrologic Considerations", organized by J. Gregg and others, to be convened in the Ozarks in 1994.

*Hydrogeology and Environmental Geology Ad Hoc Committee (Gail M. Ashley).*—The Committee was established to develop a program within the Society focusing on the application of sedimentary geology to hydrogeology and environmental geology. The practical need for abundant, potable water and safe disposal sites for wastes of all types is creating small, often isolated, research groups around the country. These scientists from state and federal agencies, utility companies, and academia commonly find themselves working with engineers and computer modelers that have little appreciation of the natural variability of porosity and permeability in sedimentary rocks. The SEPM could be the mechanism for bringing interested people together and promoting new and innovative approaches to environmental problems. The goals of the new SEPM program are to offer short courses, research conferences, technical sessions, symposia, and a variety of publications that focus on the importance of sedimentary geology in hydrogeology

and environmental geology. A wide spectrum of activities for 1994 and 1995 are in the planning stages. SEPM is cosponsoring a symposium, short course, and two theme sessions with the GSA Division of Sedimentary Geology at the 1993 GSA meeting, and cosponsoring a symposium with the AGU Hydrology Division at the 1993 AGU meeting.

*Report on 1993 SEPM Meeting Activities (Michael Arthur and Rudy Slingerland).*—The organizing committee for the SEPM Meeting “The Stratigraphic Record of Global Change—Climate, Eustasy, Life” had a busy ’92–93. We prepared a circular and call for abstracts, with a 1 February 1993 deadline. In all, 163 abstracts were received for the meeting. Each abstract was assigned to a poster or oral presentation slot in one of 12 “themes” which had been preselected by the organizing committee. A session chair and plenary speaker were invited for each theme, and the session chairs helped to organize a coherent session with available submitted and invited abstracts. In addition, the Committee planned five field trips and a special Sunday session on Lacustrine paleoenvironments. The program and registration announcement was prepared and submitted to SEPM for printing and distribution, and an abstract volume with programs was prepared. We are preparing this in “digital format”, by scanning and reformatting all abstracts for uniformity and ease of publication. We have made a formal request to the *Journal of Sedimentary Petrology* editor for space to publish the abstracts. We believe that this should become SEPM policy in order to encourage more attendance and increase the visibility of the meetings.

**EDITOR'S REPORT**  
**JOURNAL OF SEDIMENTARY PETROLOGY**  
(Harvey Blatt)

During 1992 we published: 82 articles, 12 methods papers, four discussions, one conference report, one perspective paper, 39 book reviews, and seven sedimentology photos. The mean page length of articles was 12.6, which was an increase over 1991 of .6 page. Based on home institutions of first and sole authors, published papers in all categories came from 16 countries, with those from the U.S. and Canada accounting for 74% of the total. This was a nine percent increase in the U.S./Canadian authors over 1991. Submissions dropped. The average time from acceptance to publication was 9.3 months and submission to publication was 19.5 months. During 1991, 29 authors and/or sponsoring institutions contributed a total of \$22,430 in page contributions. This compares with \$24,456 paid by 32 contributors in 1991, \$21,181 paid by 37 contributors in 1990, \$21,557 paid by 34 contributors in 1989, and \$34,805 paid by 37 contributors in 1988.

**EDITOR'S REPORT**  
**PALAIOS**  
(Dave Bottjer)

Between the June 1992 Annual Meeting in Calgary and the April 1993 Annual Meeting in New Orleans, *PALAIOS* received 94 manuscripts for publication. During that time period the acceptance rate ran at approximately 50%. The five issues published in this 10-month interval had 29 Research Reports, six Research Letters, three Book Reviews, and two Afterthoughts articles. As more and more manuscripts have been submitted to *PALAIOS*, the backlog has achieved a slight buildup; time from acceptance to publication during this period averaged 8–10 months. In August of 1992, a very well-received Theme Issue was published, “Chemosynthesis: Geological Processes and Products”, edited by Benoit Beauchamp and Peter von Bitter. We have continued to have success with Onlines articles, and this interval saw Onlines authored by Brad Sageman, Warren Allmon, Bruce Corliss, Roger Kaesler, and (for the Theme Issue) Benoit Beauchamp and Peter von Bitter. The success of the journal is reflected in a substantial increase in subscribers. From the February 1991 issue (V. 6, No. 1) to the December 1992 issue (V. 7, No. 6), subscriptions rose from 1564 to 1853, an increase of 18% over this two year period. In 1992, the second of these years, 66% of the new subscriptions were from outside the U.S., a clear indicator of the increasing international stature of the journal. Further subscription growth is needed for the continued health of the journal, and the Editor and SEPM Staff have joined in a push to reach 2000 subscriptions in the near future.

A look down the road shows that Reese Barrick, *PALAIOS* Assistant Editor for the past four years, will complete his tenure with *Palaios* on 31 July 1993 and will move on to an NSF post-doc at North Carolina State University, having successfully completed his Ph.D. at USC. *PALAIOS* and SEPM owe much to Reese for the smooth operation of the journal since it moved to USC. Starting 1 August 1993 the new *PALAIOS* Assistant Editor will be James W. Hagadorn.

**REPORT OF THE SECRETARY-TREASURER  
AND THE EXECUTIVE DIRECTOR**  
(Emily L. Stoudt and Robin Dixon)

The Society continued to improve its financial position during 1992 finishing the year of financial surplus of \$84,244. The net worth of the Society as measured by its Fund Balance rose to \$836,999, up 11% over 1991. Operating income at

**SEPM (Society for Sedimentary Geology) AND SUBSIDIARY  
CONSOLIDATED BALANCE SHEETS**

	Year ended 31 December		Year ended 31 December	
	1992	1991	1992	1991
<b>ASSETS</b>				
<b>CURRENT:</b>				
Cash and cash equivalents	\$ 177,810	\$ 159,073		
Short-term investments	198,000	297,000		
Accounts receivable, less allowance of \$1,337 for possible losses	14,933	14,357		
Inventory	191,196	200,345		
Prepaid expenses	48,221	35,674		
Due from affiliate	18,160	6,164		
<b>TOTAL CURRENT ASSETS</b>	<b>648,320</b>	<b>712,613</b>		
<b>FURNITURE AND EQUIPMENT</b>				
less accumulated depreciation	67,620	55,982		
<b>OTHER:</b>				
Investments	555,268	421,246		
Land	67,767	67,767		
	623,035	489,013		
	<u>\$1,338,975</u>	<u>\$1,257,608</u>		
<b>LIABILITIES AND FUND BALANCE</b>				
<b>CURRENT LIABILITIES</b>				
Accounts payable			\$ 41,795	\$ 75,647
<b>DEFERRED INCOME</b>			460,181	429,206
<b>COMMITMENT</b>			—	—
<b>FUND BALANCES:</b>				
General—unrestricted			640,586	670,674
New Frontiers—restricted			196,413	82,081
<b>TOTAL FUND BALANCES</b>			<u>836,999</u>	<u>752,755</u>
			<u>\$1,338,975</u>	<u>\$1,257,608</u>

**SEPM (Society for Sedimentary Geology) AND SUBSIDIARY  
CONSOLIDATED STATEMENTS OF INCOME AND FUND BALANCE**

	Year ended 31 December			Year ended 31 December	
	1992	1991		1992	1991
<b>INCOME:</b>					
Dues	\$ 140,290	\$ 105,058	Publishing costs— <i>PALAIOS</i>	100,906	110,466
Publications	265,737	209,388	Publications	155,743	100,751
<i>Journal of Sedimentary Petrology</i> — subscriptions, royalties, and other	382,529	378,204	Continuing education	44,392	74,547
<i>PALAIOS</i> —subscriptions, royalties, and other	92,619	115,754	Meetings, conferences, and field trips	93,837	59,105
Continuing education	87,177	123,061	Membership activities	85,457	45,586
Meetings, conferences, and field trips	136,207	58,116	General and administrative	447,529	418,906
Membership activities	12,593	17,524	Total costs and expenses	1,181,894	1,042,317
Royalties—New Frontiers Fund	109,700	82,081	Operating income	44,958	46,869
Total income	<u>1,226,852</u>	<u>1,089,186</u>	OTHER INCOME—Investment income	39,286	57,977
			NET INCOME	84,244	104,846
<b>COSTS AND EXPENSES:</b>			FUND BALANCES, beginning of year	752,755	647,909
Publishing costs— <i>Journal of Sedimentary Petrology</i>	254,030	232,956	FUND BALANCES, end of year	<u>\$ 836,999</u>	<u>\$ 752,755</u>

**SEPM (Society for Sedimentary Geology) AND SUBSIDIARY  
CONSOLIDATED STATEMENTS OF CASH FLOWS**

	Year ended 31 December			Year ended 31 December	
	1992	1991		1992	1991
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>			<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Net income	\$ 84,244	\$ 104,846	Payments for purchases of property and equipment	(32,303)	(33,541)
Adjustments to reconcile net income to net cash (used in) provided by operating activities:			Purchase of investments	(264,262)	(897,844)
Depreciation	20,665	18,824	Proceeds from maturations and sales of investments	130,240	790,570
Provision for losses on accounts receivable	474	1,995	NET CASH (USED IN) INVESTING ACTIVITIES	(166,325)	(140,815)
Changes in assets and liabilities:			NET INCREASE (DECREASE) IN CASH	18,737	(163,066)
Decrease (increase) in short-term investments	99,000	(148,000)	CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	159,073	322,139
(Increase) in accounts receivable	(1,050)	(181)	CASH AND CASH EQUIVALENTS AT END OF YEAR	<u>\$ 177,810</u>	<u>\$ 159,073</u>
(Increase) in due from affiliate	(11,996)	(4,287)			
Decrease (increase) in inventory	9,149	(13,129)			
(Increase) in prepaid expenses	(12,547)	(5,237)			
(Decrease) increase in accounts payable	(33,852)	9,721			
Increase in deferred income	30,975	13,197			
NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES	<u>185,062</u>	<u>(22,251)</u>			

## MEMBERSHIP STATISTICS

	1988	1989	DECEMBER 1990	1991	1992
<b>SEPM MEMBERSHIP:</b>					
Members	6,212	5,795	5,474	5,360	5,438
Nondues Paying Members	<u>100</u>	<u>104</u>	<u>113</u>	<u>116</u>	<u>125</u>
	<u>6,312</u>	<u>5,899</u>	<u>5,587</u>	<u>5,476</u>	<u>5,563</u>
<b>PALAIOS MAILING LIST:</b>					
SEPM Members & Honorary (Regular)	1,163	1,173	1,177	1,206	1,289
SEPM Members (Students)	99	110	105	120	166
Subscribers	375	402	425	446	455
	<u>1,637</u>	<u>1,685</u>	<u>1,707</u>	<u>1,772</u>	<u>1,910</u>
<b>Journal of Sedimentary Petrology MAILING LIST:</b>					
SEPM Members & Honorary (Regular)	4,549	4,291	4,143	4,077	4,031
SEPM Members (Students)	531	488	395	397	451
Subscribers	<u>1,740</u>	<u>1,740</u>	<u>1,666</u>	<u>1,630</u>	<u>1,601</u>
	<u>6,820</u>	<u>6,519</u>	<u>6,204</u>	<u>6,104</u>	<u>6,083</u>
<b>TOTAL EDITIONS:</b>					
<i>PALAIOS</i>	2,400	2,000	2,000	2,000	2,000
<i>Journal of Sedimentary Petrology</i>	7,500	7,000	7,000	7,000	7,000
<b>NEW MEMBER INFORMATION:</b>					
Applications Completed	301	225	196	318	530
Reinstatements	30	57	91	49	27
Transfers	16	10	48	21	8
Resigned	110	109	116	66	104
Deceased	8	9	13	7	10
Dropped for nonpayment of dues	859	577	470	405	356
Unpaid: Members and Associates	463	371	327	306	354
Students	114	99	78	50	55

Emmons & Hartog  
Certified Public Accountants

## INDEPENDENT AUDITORS' REPORT

SEPM (Society for Sedimentary Geology)  
Tulsa, Oklahoma

We have audited the accompanying consolidated balance sheets of the SEPM (Society for Sedimentary Geology) and subsidiary as of December 31, 1992 and 1991, and the related consolidated statements of income and fund balance and cash flows for the years then ended. These financial statements are the responsibility of the Society's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the SEPM (Society for Sedimentary Geology) and subsidiary at December 31, 1992 and 1991, and the consolidated results of their operations and their cash flows for the years then ended in conformity with generally accepted accounting principles.

July 9, 1993

*Emmons & Hartog*

\$44,958 decreased from \$46,869 in 1991. Cash flow for 1992 decreased due to the purchase of new equipment. Long-term investment funds grew from \$421,246 to \$555,268. This large increase was due to royalties received from the Copyright Clearance Center. In 1992, our operating revenue was \$1,226,852 up 12% from 1991 revenue of \$1,089,186. Operating expenses increased 13% to \$1,181,894 from 1991 expenses of \$1,042,317.

ANDREW D. MIALL  
Outstanding Paper Award, 1991  
*Journal of Sedimentary Petrology*

Andrew Miall is well known to all of us who study sedimentary rocks. His book on basin analysis is clutched by students worldwide, his edited syntheses of fluvial and alluvial sedimentary systems and concepts of facies architecture are on our bookshelves, and his papers, scholarly and critical, are required reading for all professionals. English by birth, he gained his first degree at the University of London and then emigrated to Canada, as he says, "out of a sense of adventure". This was clearly manifest in his Ph.D. research at the University of Ottawa where he focused on Arctic Geology. Interest in the beautifully exposed rocks of the Arctic Islands continued while he worked in the petroleum industry and at the Geological Survey in Calgary, and formed the basis for many of his seminal papers and syntheses during early years at the University of Toronto, where he is now Professor of Geology. Over the last decade he has switched to research in more equitable climes and is presently engaged in several projects in the southwestern USA, specifically investigating fluvial architecture and sequence stratigraphy. The paper for which he receives this award is typically concise, tackling fundamental concepts of stratigraphy and sedimentology in a forthright and direct way. His extraordinary abilities at synthesis and writing are illustrated not only by his books but also by his editorship of the national Canadian Journal, *Geoscience Canada*, for many years and his current editorship of the *Journal of Sedimentary Geology*. He has an impressive record of invited international speaking tours and distinguished lectureships and has been honored with the Past-President's Medal of the Geological Association of Canada and recently with a D.Sc. from the University of London.

*Citation:* In recognition of Andrew D. Miall who has, using the fundamentals of sedimentology, biostratigraphy, and tectonics, addressed principals that are central to the correct use of sequence stratigraphic analysis.

RODNEY WATKINS  
Outstanding Paper Award, 1991  
*PALAIOS*

Rodney Watkins was born in 1949 in Jefferson County, Washington. He obtained A.B. and M.A. degrees from the University of California, Berkeley, where his interest in paleoecology was inspired by Robert M. Kleinpell. Watkins's first publication, on Carboniferous stratigraphy of the eastern Klamath terrane, California, appeared in 1973 in the *AAPG Bulletin*. Watkins received a D.Phil. degree from Oxford University in 1975. His doctoral work, on paleoecology of the Ludlow Series in the classic Silurian of the Welsh Borderland, was published in the *British Museum Bulletin*. His publications reflect the extremely wide range of his interests. His papers include paleoecologic studies in the Ordovician, Devonian, upper Paleozoic, and Tertiary of California, the Silurian of the Welsh Borderland, Ireland, Gotland, Nova Scotia, and Wisconsin. He has papers on the ecology of brachiopods, cephalopods, bivalves, crinoids, graptolites, and trilobites, but most paleontologic work focuses on entire faunal associations and their relationship to sedimentologic facies. He has a variety of sedimentologic publications on the middle and late Paleozoic of northern California, the Tertiary from several parts of California, the Mesozoic of northern California, and the Middle Ordovician in Northern Nevada. Watkins taught briefly at the University of Texas, Austin, then worked as a self-employed prospector, ranging from New Mexico to northern California. He began teaching at New Mexico State University in 1979 and remained for eight years. Many of his students maintain close contact with him, indicating the effectiveness of his teaching. During summers, he worked as an exploration geologist in the western states, most notably in mapping the pit area of Viceroy Gold Corporation's rhyolite-hosted Au deposit in the Castle Mountains, California.

In 1988 Watkins became a curator of Geology at the Milwaukee Public Museum. He is editor of the Museum's scientific publications and is an adjunct professor at the University of Wisconsin, Milwaukee. Upon moving to Wisconsin he developed an interest in the local Silurian which resulted in publication of the paper for which he is receiving this award. His continuing work on Wisconsin's Silurian

reef and interreef faunas and sedimentology is bringing this long-neglected, classic region back into the mainstream of paleontologic inquiry.

Peter Sheehan

CHARLES V. CAMPBELL  
*Francis J. Pettijohn Medalist*  
For Excellence in Sedimentology

Charles V. (Chuck) Campbell has earned and richly deserves the Pettijohn Medal for significant contributions to stratigraphy and sedimentology. Working mostly in the proprietary environment of Exxon, he was a powerhouse of knowledge and ideas, with 97 internal research reports and 9 outside papers. He provided concepts on the practical relationship of geologic time to stratigraphy, which proved fundamental to the sequence stratigraphy developed by Peter Vail and his group, including John Sangree and myself. Above all, he was a teacher and/or "father image" for many researchers including John Van Wagoner, Kevin Biddle, Bob Oaks, Bob Dott, Jr., and Ed Cotter. He exerted strong influence on European sedimentologists Emiliano Mutti and Dolf Seilacher.

Chuck graduated from the Montana School of Mines in 1944, and worked as a miner to help pay for college. Early oil company field work in Colombia, Venezuela, and Wyoming gave him an abiding interest in sedimentology. This interest led him to graduate school at Stanford (M.S., 1949; Ph.D., 1956), then back to industry at Exxon until he retired in 1982. His greatest contributions are concepts in the field of physical stratigraphy, especially the basic chronostratigraphic nature of bedding surfaces and their use as a framework in analyzing the contemporaneity of facies and environments. These ideas are best exemplified in his classic paper on *Lamina, laminaset, bed, and bedset*. Chuck helped us understand that time-parallel bedding surfaces generate curves of the fundamental geophysical tools of industry: well logs and seismic sections. He taught us that well-log patterns are "bedding surfaces once removed", and seismic imagery is "bedding surfaces twice removed". His ideas on pattern correlation of bedding surfaces in well logs led Peter Vail to recognize the chronostratigraphic significance of seismic reflections. He was an early leader in clastic and carbonate facies, and paleoenvironmental interpretation of sedimentary structures. His quotable watchword was "by their bedding ye shall know them", and its corollary "by their bedmates ye shall know them". He developed several outcrop-based sandstone facies models, and early (1962) recognized the paleoenvironmental significance of hummocky cross-stratification (Chuck's "truncated wave ripples"), and structures in turbidite successions. He contributed innovative ideas on recognition of triple junctions by mapping facies patterns on adjacent plates. Chuck still carries his keen powers of observation in retirement in the Bitterroot Valley of Montana, with his dedicated avocation of bird study. It is with great pleasure and appreciation that we honor him today.

*Citation:* To Charles V. Campbell, the SEPM Francis J. Pettijohn Medal, for pioneering work on the chronostratigraphic significance of stratal surfaces, for leadership in interpreting the paleoenvironmental significance of sedimentary structures, and for his influence upon those of us who listened, learned and applied the fundamentals he taught.

Robert M. Mitchum

RESPONSE FROM CHARLES V. CAMPBELL

I am honored to receive the Pettijohn Medal and I thank my colleagues. I find this a humbling experience because I have been retired over ten years, literally out to pasture in the north forty or maybe four hundred or four thousand, depending upon how I feel at any one moment, in western Montana. I fell into geology as the lesser of the evils at the Montana School of Mines. Other choices were metallurgical engineering (it was cookbook chemistry) or mining engineering (it was the life of a mole at that time). I have never regretted that descent. No one person provided me with inspiration and guidance. Many did. However, my basic teacher was the rocks. I learned how to look at rocks from geologists who mapped before the advent of electric logs and the seismograph. They taught me to look at the rocks, to think about what they were telling me, and then to explain or at least interpret them in terms of the immediate goals. These concepts were further emphasized at Stanford University. But more important was my introduction to the available and extensive literature on concepts of sedimentary facies and unconformities. Most enlightening was Walter's concept of facies change, which was written one hundred years ago. Also, the paucity of literature on sedimentary structures was disappointing because the explanation and meaning of sedimentary structures seemed a root of many of the problems I had encountered



in field work. Eventually, at Exxon, the opportunity to focus on sedimentary structures came my way; concepts of the meaning of the patterns of layers that I found in the rocks followed. About that time digital seismic records began to appear, and they showed patterns of layers essentially identical to outcrops, even though the scale of the records was hundreds of times the size of the outcrops. I hope some of you young geologists with computer expertise in fractals either have or are studying the repetition of outcrop size sedimentary structures on digital seismic records.

I would like to share this honor with my wife of forty-three years, my companion, confidant, most severe critic, source of encouragement. So, in the current politically correct lingo, what I am saying is: thanks, guys.

**REUBEN J. ROSS, JR.**  
*Raymond C. Moore Medalist*  
For Excellence in Paleontology

To write the biography for our Society's Moore medalist, Reuben J. Ross, Jr., is a daunting charge. This richly-deserved award is bestowed on a colleague whose research has always been global in scope and concept. At the same time he is a garrulous perfectionist, to whom nothing is more important than accuracy and clarity of thought and expression. So, if I don't get it right, I shall hear about it! I first worked with Rube along the rain-swept coast of Newfoundland. I had asked him to join us in unraveling the Ordovician geology of this complex terrane because he simply knew a lot about the stratigraphy and paleontology of Ordovician rocks worldwide. In subsequent years, both there and on the sun-baked slopes of Nevada and Utah, I came to know this dogged, combative, imaginative, and inordinately kind person exceptionally well. Between the curses and infectious laughter is a devoted scientist and unabashed field paleontologist who, over four decades, has, as geofads have waxed and waned, championed the fundamental tenants of geology.

Born in New York, Rube is a Princeton graduate. His first research, while there, was on the K-T boundary, where he learned the principal that objective, stratigraphically controlled collecting is essential to paleontology, a precept that has guided his research ever since. These beginnings were interrupted by World War II, where he saw service in Africa and Europe. Upon his return, professors, who had commissions as majors and captains, were taken aback by this upstart student who was a Lt. Colonel. His love affair with the Basin Ranges began during his graduate research at Yale. Results of his Ph.D. work, a zonal scheme for the lower Ordovician Garden City beds based on trilobites, has lasted for 40 years. After several years teaching at Wesleyan University, he joined the USGS in Denver, settled in the west for good, and was charged with unraveling the stratigraphy and paleontology of the enormous expanse of Ordovician strata in the Great Basin. It is the results of more than 30 years work in the west that is the core of his distinguished career. All students of the Ordovician know of his seminal contributions to Lower Paleozoic brachiopod/trilobite taxonomy, the Toquima-Table Head faunal realm, the genesis of the Mickeljohn mound complex and the relationship between trilobites, lithospheric plates and ocean currents. Never content to work in isolation, he organized, beginning in 1965, four international Great Basin Ordovician excursions, to show and argue about these rocks with colleagues from all over the world. No participant in these trips will ever forget being forced up Mickeljohn Peak in the searing Nevada sun accompanied by a continuous discourse on the superb, but puzzling rocks. Although taxonomy and rigorous paleontology have been central to his research, the ultimate aim, it seems, has always been correlation and recognition of global geological events. Thus, in the mid-70s, he strenuously pushed, and led by example, for the integration of biostratigraphic and radiometric dating of Ordovician strata; a project that continues today, using every more sophisticated techniques. During that period he served as Chair of the IUGS Subcommittee on Ordovician stratigraphy, initiated a program of publishing a series of correlation charts, and with his usual flair arranged much of the printing himself on a shoe-string budget and his own resources.

While writing this biography I have talked to several young researchers, working for the first time on the Ordovician of the Great Basin, and seeing the rocks with new eyes. It is always Rube who has guided them to the outcrops and infused them with his enthusiasm. Their comments always speak of their admiration for this tough-minded character, without whose painstaking and careful study they would not even be able to start working in this terrane. At the same time there is an unspoken understanding that they better do a damned good job or Rube will pounce on their interpretations. What better accolade to a senior researcher than the admiration of the young.

*Citation:* In recognition of his exceptional contributions to the understanding of invertebrate fossils in and stratigraphy of Ordovician rocks, worldwide.

**RESPONSE BY REUBEN JAMES ROSS, JR.**

There is no greater honor for a geologically oriented paleontologist than to receive the Raymond C. Moore Medal of the SEPM. It is particularly pleasing to receive the award from President Harry Cook and to have a citationist that paragon of teachers Noel James, our president-elect, who has just revealed himself as a master of exaggeration. Ray Moore, a geologically inclined paleontologist, spent a stimulating week with us in Jim Gilluly's USGS field camp in Nevada in 1954.

You will not hear the long list of people who have contributed to the success of my endeavors, because you would soon learn that they, not I, deserve this wonderful honor. Forgive me if I mention a few, however. Taylor Thorn, my first Princeton professor, dictated an entire structural guidebook to me as stenographer, while he drove along every possible road in the Bighorn Basin in 1937; what an introduction to geology! Later that summer Steven K. Fox disciplined me in the necessity for making unbiased fossil collections (foraminiferal) in tightly sampled measured sections in the Cannonball Formation of North Dakota. (That effort coordinated with Jepsen's work on vertebrates and Dorf's on plants was published eventually in 1942, and settled, the position of the K/T boundary in the western interior. Some of you probably think that a bolide made that dating, but you have it backwards.) Active military duty starting in June 1941 interrupted graduate school at Yale, virtually every weekend of which had involved commuting in a borrowed auto to Smith College, despite warnings of academic disaster from Adolph Knopf. Rube Ross somehow persuaded Elizabeth Fabian, known to all of us as Jill, to become an Army bride on March 21, 1942. Matchless wife and mother, she has played hostess to countless geologists from every continent but Africa in the past 51 years. She is also a very sharp-eyed fossil collector.

A suggestion of a potential Ph.D. problem from J. Stewart Williams during his visit to Carl Dunbar at Yale early in 1946 resulted in a stratigraphic plunge down into the lower Ordovician. That had two happy results, one of which was my discovery of Lehi Hintze, a potential rival, but a prince among gentlemen, a great regional stratigrapher and geologist, and the greatest of friends. Independently but in concert we worked out the second result, a standard biostratigraphic section for the lower Ordovician to take the place of the abused and confusing Canadian Series. Thirty years later we named it the Ibxian Series. A more weighty account of its attributes is due for publication by the USGS before the next international Ordovician Symposium at Las Vegas in 1995. No one could have had better supervisors than I. There was thoughtful Joe Webb Peoples at Wesleyan, and, at the USGS, inspirational Preston Cloud and enthusiastically supportive Tom Dutro and Norman Sohl. Nor could one find a more congenial field companion and technical assistant than Leonard Wilson, who aided me from 1965 to 1980. I had two paleontologic role models: H.B. Whittington and G. Arthur Cooper. At the USGS, A.R. "Pete" Palmer, Paul Richards, T.B. Nolan, then Frank Kleinhampfl, and later F.G. "Barney" Poole, J. Fred Smith, and K.B. Ketner are examples of those who introduced me to an endless string of geologic problems that required paleontologic teamwork. When returning to teaching in 1980, the warm welcome, the advice, and the education that I received from fellow faculty members and students at the Colorado School of Mines provided a feeling of rejuvenation and change in perspective.

The necessary discipline of paleontology has been taking some normally cyclic raps of late and continues to be downplayed in some academic circles. Nonetheless, stratigraphers and structural geologists who think they can do without well-disciplined paleontology are misguided. During a recent discussion of interpretations of two controversial amendments to the Colorado Constitution, a lawyer friend quoted his favorite professor, who advised, "Never mind the interpretations, read the law". And what is the law for us geologists? It is the rock, whether in outcrop or in core. The rock is our "law", and everything else is interpretation. When it comes to dating rock, the fossiliferous ingredients are our most reliable indicators. Using stratigraphic sequences or physical stratigraphy alone for correlation is a return to the early 19th century. It is a return to a land of Shangri-La, where a stratigrapher can escape the nagging warnings of his paleontologic friends. But he should recall that James Hilton's title was not Shangri-La; it was "Lost Horizons".

**WILLIAM B.F. RYAN**  
*Francis P. Shepard Medalist*  
For Excellence in Marine Geology

Bill Ryan obtained his B.A. in Physics from Williams College in 1961 and his Ph.D. in Geology from Columbia University in 1971, where he was a student of Bruce Heezen. He has been at Lamont ever since, and is now a Senior Research Scientist and a Doherty Senior Scholar. Although the main area of Bill's research has been marine geology, his interests and publications have ranged far outside of these boundaries, ranging from consideration of Alpine Orogenesis based on

plate tectonics to developing of SeaMARC instrumentation. It is only possible to discuss here several of the highlights of Bill's career.

In 1973 Bill and his colleagues recognized the Mediterranean isolation and salinity crisis during the Messinian; that the Mediterranean was perhaps converted for a short period of time into a chain of hypersaline lakes. This event was terminated by a catastrophic reflooding in Messinian time via the straits of Gibraltar. This hypothesis, based on the presence of Messinian evaporites in the sediments of the deep Mediterranean and the morphology of river channels that drained into the Mediterranean, was at first quite controversial. Its later general acceptance was pivotal in encouraging scientists of all disciplines to consider once again the potential effect of catastrophic events upon the geologic and evolutionary record. In the 1970's Bill began to study the poorly known processes that allowed the systematic accumulation of thick wedges of sediments at Atlantic type margins. Analyses of data from onshore wells suggested that rifted margins were probably strongly influenced by a thermal subsidence driving mechanism. Bill used data from a series of offshore wells to show that indeed continental margin basement subsidence was caused by cooling, and in later work with other colleagues showed that as a margin aged by cooling, the basement responded flexurally to the sediment load, with rigidity increasing with age. This work was part of the embryonic phase of the now widely-used technique called back-stripping employed in basin analyses.

Bill was a prime mover in the development of the SeaMARC series of submersible, unmanned, exploration devices. This development, an outgrowth of the Deep Tow program, incorporated new technology to meet the challenge of new problems. One of the most important functions of this instrument is to create very detailed images of bottom morphology and subbottom reflections in deep water. A most important dividend of this program was to provoke a renewed interest in detailed studies of bottom morphology at all depths. In this Bill was a visionary, seeing clearly the problems to be solved and the way in which the new technologies could be applied. He obtained the funding, worked with engineers on the design, and conducted the earliest experimental use of the instrument. The SeaMARC with other submersible instrumentation was used to study the axis and offsetting transforms of sections of the Mid-Ocean Ridge system in order to better understand the accretionary process. One of the startling observations Bill and his students made was that spreading at ridge axes took place in a nonsteady state. Using these and other bottom observation techniques Bill and his students have continued to study the detailed morphology of continental margins, seeking to further understand the erosional and depositional processes that take place on deep-sea fans and in the canyons that frequently cut the continental outer shelf and slope. This has led to a continuous stream of detailed and innovative papers describing the morphology and genesis of these features particularly with regard to the canyons: their origin and geological history, and the effect upon them of tectonics and large rapid sea-level events. Much of Bill's most recent research deals with the archiving and distribution of multibeam bathymetric data. Realizing that the vast quantities of new data being collected are of little use unless they are easily accessible to the scientific community, Bill has developed and distributed state-of-the-art software which allows the visualization and interpretation of multibeam bathymetric data. Bill has been a major force in marine geology for the past 25 years. He has nurtured, educated, and trained numerous associates and students. He has always demonstrated a keen sense of where the science should be going. With his powerful intellectual abilities, his honesty, his forthrightness, and his energy, Bill Ryan has been a star, who has truly pushed back the envelope.

*Citation:* Those of us who have collaborated with Bill have often been awed by the elegance of his scientific reasoning and the clarity of his scientific thoughts. Bill's farsightedness and vision have been an inspiration to all of us who have had the privilege of working with him. He has constantly kept us at the forefront of his science.

### CHARLES A. ROSS Honorary Member

Like many members of our profession, Charles Ross was attracted to the science of Geology and Paleontology somewhat by chance when he became "hooked", the result of taking an introductory college course in Geology to fulfill a "science requirement". However, in many respects Charlie had an added advantage over some of us, in that his lifelong career was nurtured and undoubtedly heavily influenced by the lifestyle and professional interests of his parents. His father was an entomologist with the Illinois Natural History Survey at Urbana, where family activities included an avid interest in nature and the outdoors, fulfilled by many pleasurable weekends of travel and camping to collect insects and other natural specimens. Some of these trips included collecting fossil insects, fish, plants and other specimens from the Pennsylvanian coal measures. Partly because of this,

the interests of the young Charlie turned early to science during high school years, where he excelled in and enjoyed math, physics, biology, chemistry, etc. Once he received a stern lecture when he and a pal mixed up some gun powder on the sly in the chemistry lab and unexpectedly filled the room with gunpowder smoke.

When he was privileged to enter college at the University of Illinois in 1950, these earlier imprints were firmly ingrained in his thinking, but career interests developed slowly at first and went through several stages. However, his program included science requirements, and it was here that Charlie elected "Introduction to Geology" to help fulfill that obligation. He was fortunate enough to draw an imaginative instructor who further stimulated his natural interests, so Charlie soon was "hooked" and immediately settled on a major in Geology. He later transferred to the University of Colorado to finish the B.A. in Geology, in the shadow of the magnificent Front Range of the Rocky Mountains. From here, a R.O.T.C. commitment took him to the U.S. Corps of Engineers during the Korean War, where he became one of the few "military geologists" of the time. After discharge, he entered the Yale University graduate program in geology and was fortunate to become associated with Carl Dunbar as advisor on his dissertation program in the Glass Mountains of Texas. He was awarded a Teaching Fellowship at Yale and while there met June Phillips. June, a post-doctoral student from Australia, was studying geology at the Museum of Natural History at Yale University. They were married in 1959. She continues as his faithful companion, most ardent critic, and sometimes joint author on several of his publications. June later was awarded a Doctor of Science from the University of Sydney and is now Professor of Biology at Western Washington University.

After Yale, Charlie became associated with Bo Wilman and Luke Thompson at the Illinois Geological Survey, and here his growing interest in fusulinid fossils further developed, to later become the focus of a major part of his career accomplishments. He joined the Geology faculty at Western Washington University in 1964 to teach courses in paleontology, stratigraphy, and others. Here, he became a recognized authority on the applications of fusulinid work to problems of global plate tectonics, stratigraphic correlation, and chronology, and became Chairman of the department in 1977. In 1982, he left the university to join Gulf Oil Co. as Staff Geologist and became Director, Stratigraphic Sciences Group in 1983. He was Senior Biostratigrapher with Chevron from 1985 to 1992, when he left to develop a consulting practice in Bellingham, WA.

Charlie Ross's professional accomplishments are legion; the list would more than exceed the word limitation of this biography. Included are almost 150 scientific publications on subjects as diverse as late Paleozoic fusulinid correlations and related stratigraphy of Texas, New Mexico, and Arizona; global applications of these faunas in Japan, Australia, Europe, and other countries; late Paleozoic crustal tectonics; plate tectonic applications; and others. He holds membership, honorary membership, or fellowship in 12 scientific societies, which he has served in numerous capacities, including committee membership and chairmanship and society offices. He has made major contributions to SEPM activities, including many committee assignments, editor of Special Publications 21 and 42, as Secretary-Treasurer in 1982-84, and as an officer of the SEPM Foundation in 1988 to the present. SEPM, as well as several other scientific societies are indeed fortunate to list Charlie Ross as a long time member and contributor.

*Citation:* To Charles A. Ross, outstanding scientist, energetic researcher, prolific author, scholar and teacher, extraordinary contributor to the fields of paleontology and stratigraphy, and respected servant of SEPM.

James A. Peterson

### RESPONSE FROM CHARLES A. ROSS

Many thanks to SEPM for this honor it has bestowed on me. The honorary members of SEPM are distinguished contributors to the field of sedimentary geology and paleontology, and I hope that my contributions also will have some lasting significance. My special thanks to the numerous people who have helped me in my endeavors. My wife, June, always has been a supportive co-scientist. Both my parents encouraged an interest in biology and evolution, and I found that fossils and stratigraphy went hand-in-hand with those interests. Paul Shaffer, University of Illinois, first showed me that geology combined all the sciences into a cohesive, historical perspective. The geology faculty at the University of Colorado was persistent in giving students a broad background in field work and field experiences. At Yale University, the geology faculty supported the concept of a total and thorough understanding of subjects from their historical beginnings to their present concepts. The Illinois State Geological Survey provided extensive practical experience at a premier scientific establishment. Eighteen years of teaching and research at Western Washington University on the west coast further broadened my scientific studies. Then, ten years in the petroleum industry presented exciting opportunities to work with many stimulating and highly qualified

people in closely knit teams looking at very diverse sets of geological problems in many parts of the world. SEPM with its members and staff creates a platform for strong professional support. My heartfelt thanks to everyone for their continued encouragement and support.

The biological record preserved in strata has great paleobiogeographic significance when interpreted in the context of evolutionary histories, dispersals, sea-floor spreading, plate tectonics, paleoclimates, and island hopping. This fossil record has greatly helped geologists who are studying the place of origin and timing of the accretion of many displaced terranes around the Paleopacific (Panthalassa) ocean basin. Immediately ahead are the major challenges to understand and to date accurately Paleozoic sequence stratigraphy and to determine the causes of eustatic sea-level fluctuations.

Again, many thanks to all the SEPM community for their active support and encouragement.

ROBERT H. DOTT, JR.  
*Twenhofel Medalist*

In 1929 our Bob Dott was born in Tulsa where his father, the real Robert H. Dott (1896–1988), had headquartered for some years while engaged in the petroleum geology of Oklahoma and foreign parts. Before young Bob was old enough to recognize that times were tough in the Great Depression of the 'Thirties, the family moved some distance down Route 66 to Norman where Father Bob became the long-term director of the Oklahoma Geological Survey. Thus our Bob passed his formative years, shielded by a university-dominated community from many of the realities faced by other Oklahomans, yet constantly exposed to geology and geologists. Small wonder that he heeded these influences and went off to Michigan, Old Bob's alma mater. Before 1951 is over we find our young hero at Columbia, with B.S., M.S., and wife Nancy in hand. Schermerhorn Hall housed some great people ready to communicate with a receptive mind—Norman Newell and John Imbrie for instance, and of course, there was Marshall Kay. We tend to connect Marshall Kay with all those varieties of geosynclines but he was concerned with much more than nomenclature. In the early '50s Marshall was pursuing his long-term love, the Ordovician, into tectonically complex regions (the habitats of eu- and miogeosynclines), including eastern Nevada where the route of the Overland Trail (= Int. 80), following the Humboldt River, passes intriguing late Paleozoic exposures. These became the nucleus of Bob Dott's thesis area and the proving ground for him and field-assistant/camp tender Nancy, forging a lasting partnership. If W.H. Twenhofel himself had planned the Nevada experience, he couldn't have designed a better training exercise for his latter-day successor at Wisconsin; it was all there—litho- and biostratigraphy, sedimentary petrology, sedimentary tectonics, everything. It cannot be said that Bob's post-Columbia career, mostly at Madison (three and a half decades), would meet Twen's high paleontological standards but, in all other regards, he would join us in enthusiastic applause for our medalist's performance as a Renaissance Man among sedimentary geologists, devoted teacher and research leader, writer of a highly-regarded textbook, organizer and editor of important symposia (most recently GSA Mem. 180, q.v.), and as an honored officer and servant of this Society.

It is unfair to select certain "highlights" of this record, suggesting that other items are less worthy. Nevertheless, I have some favorites: the studies and [the majority of] the interpretations of the sandstones mantling the Wisconsin Arch, the identification of critical unanswered questions (about sea levels, about geologic "events", etc.); the thoughtful analyses of the precepts promoted by our intellectual forebears (e.g., Suess, Chamberlin). For all these reasons, and many more, we are about to bestow a truly-earned award; we only regret that Bob, Senior left us a few years too early to participate in this happy ceremony. It gives all of us great pleasure to present Robert H. Dott, Jr., a second-generation SEPM stalwart and the 1993 recipient of the Twenhofel Medal.

*Citation:* To Robert H. Dott, Jr., for sustained productive labor in many of the fields that define the main stream of sedimentary geology and for able communication of his findings to his students, to the SEPM community, and beyond.

L.L. Sloss

RESPONSE FROM ROBERT H. DOTT, JR.

It is the greatest possible honor for a sedimentary geologist to receive the Twenhofel Medal, but, for a Wisconsinite, it is doubly honorific. Nevertheless, President Cook's phone call informing me of my selection as the 1993 recipient prompted some worry. Only a month earlier, I had been notified of my selection to be the American Institute of Professional Geologists' Parker Medalist, so now I began wondering whether these awards signaled that I was over the hill or that selection

standards had slipped seriously. Being a pragmatist, however, I decided to make the best of it, and was honored that Larry Sloss agreed to provide the requisite appointment. Contrary to what one might suppose, I became a geologist in spite of being a son of one and a nephew of another, my uncle Richard Hughes (who had influenced my father's choice of geology as a career). Although I was a child of the petroleum industry, as well as of the Great Depression and Dust Bowl, geology seemed to me as a callow youth to be the dumbest possible way to make a living. Growing up in a university community also gave me a somewhat jaundiced impression of professors. Instead, from the age of ten, my passion was for the Rocky Mountains. Although legally an Okie, spiritually I was a Coloradoan. When my parents sent me off to summer camp near Estes Park, I had fallen in love with the mountains, horses, trout fishing, camping, and hiking. I envied the early explorers of the west who had been the first paleofaces to Long's Peak, Yellowstone, and the Tetons. My principal youth hobby was photography, so I was captivated by the autobiography of William H. Jackson, pioneer photographer of the west, who took most of the classic photos made famous in F.V. Hayden's government publications. A lifelong wanderlust was kindled further when friends of my parents visited and showed color slides—the very first Kodachromes—of far-away romantic places like the Peruvian Andes and Saudi Arabia. My imagination was also spurred by my dad's albums of pictures from his early 1920s work for Standard Oil of New Jersey in the wilds of Bolivia and Argentina. I could pore over maps of such places by the hour. Consequently, unknown to me, I had been predisposed for a geological career.

When I was ready to go off to college, my father, in his characteristic low key manner, suggested that, "Unless I had a different plan, why didn't I take introductory geology to fulfill my freshman science requirement?" Well, I had no plan, and so two years, four geology courses, and a couple of summers with USGS field parties later, I was hooked. In retrospect, years later I realized that besides my youthful passion for mountains, geology held a fascination like that of a good detective story. I love geological mapping because of its Sherlock Holmes-like mystery solving from clues gathered at scattered outcrops. And, to this day I find the reconstruction of mysterious pasts that no human was around to observe to be the most satisfying intellectual activity imaginable. At the University of Michigan, a couple of other important things happened. I met my wife Nancy in a geology laboratory and proceeded to rescue her from the greater Detroit area to begin a long and exciting career of traveling and camping through life and across the world together. It turned out that she, too, had grown up with a love of the outdoors, and as a young girl had dreamed of living on a ranch in Wyoming. Our union has been fruitful to the tune of five younger Dott's before our eyes, all of whom share a love of nature—thanks mostly to their naturalist mother. Included among the Dott tribe is one son who found his way into geology by a more circuitous path than mine, and a botanist daughter who married a geologist. Another important happening at Michigan was my first encounter with L.L. Sloss, who came to speak about facies mapping around 1950, when the fruits of that unusual Northwestern Troika, Sloss, Krumbein, and Dapples, were just coming to harvest. Although I drifted east to Columbia University for my Ph.D., my career was influenced and enhanced significantly by those near-neighbors in Evanston. I am indebted to Larry for much encouragement, especially to write *Evolution of the Earth*, and now for his citation for the Twenhofel Medal.

In the early 1950s, Columbia University was an exceptionally exciting place to study geology. The Lamont Geological Observatory had just begun its pioneering exploration of the ocean basins under the direction of Maurice Ewing; Walter Bucher and Marshall Kay were exploring frontiers in tectonics; Norman Newell and John Imbrie were leaders in paleobiology; and Arthur Strahler was helping forge a new, process-oriented geomorphology. Although I learned about those unpronounceable geosynclines for which Kay became famous, I gained much more from Marshall's vast knowledge of and unique perspectives on stratigraphy and tectonics. Of equal importance at Columbia was my association with a remarkable group of outstanding fellow graduate students, a list of whom could be a Who's Who in Earth Sciences. Around 1960, many of my generation, who were trained primarily in stratigraphy, transformed ourselves like chameleons into sedimentologists. Most of us were self-trained because sedimentology had not been clearly defined as a subject when we were students, except at a handful of institutions, which included Chicago, Penn State, Wisconsin, and Northwestern.

Soon after I arrived at Wisconsin, three older colleagues, Lewis Cline, Lowell Laudon, and Stanley Tyler, began whispering offers of various courses that I might like to take from them. While working for Humble Oil and Refining Company in the Pacific Northwest and in Southern California during the mid-fifties, I had become increasingly interested in sedimentology in orogenic belts. So I accepted Tyler's offer, and found myself teaching physical sedimentation. Thus was my career direction altered; it did not hurt that the sixties was a golden decade for sedimentology generally. At first, I continued my passion for mountains by emphasizing sedimentology in orogenic belts in Oregon, South America, and Ant-

arctica. It took me ten years to realize that there were also some worthy unanswered questions about Sloss's cratonic Sauk Sequence right there in my Wisconsin backyard (literally as well as figuratively, for we live in a former quarry). Pursuit of the latter has been enhanced by the collaboration with Wisconsin colleagues Charles Byers, Lloyd Pray, and more recently, Toni Simo.

It is a heavy responsibility to teach sedimentary geology at Wisconsin and try to live up to the Twenhofel Tradition. Although I never know "Twenie" personally, I have heard much lore about him. It is well known that he was a leader in paleontology, a founder of the field of sedimentology and of SEPM, and was also editor of the *Journal of Sedimentary Petrology* for 13 years. Besides all of that, Twenie was much revered as a teacher. His star student, Stanley A. Tyler (discoverer of the Proterozoic Gunflint fossils), whom I was privileged to know before his untimely death in 1963, was also an adored teacher. Stan taught everything from sedimentation to metamorphic and structural geology—something quite impossible today. The Twenhofel-Tyler tradition of high priority for teaching as well as scholarship has always appealed to me. Indeed, I believe firmly that the two activities should be complementary, so I hope that I have lived up to this fortune cookie message, which I received about a year ago: "You will advance the careers of your friends as you climb for success". I mark myself as extremely fortunate to have had many fine students, and I hope that Twenhofel would be pleased with the record of sedimentary geology at Wisconsin (and everywhere) since his passing.

Although I cannot claim to be a prophet, I conclude my remarks with a brief assessment of sedimentology today. First, I wish to acknowledge the tremendously fruitful symbiosis that our field has enjoyed with the petroleum industry for three quarters of a century. But, now that that industry is changing so dramatically, we must wonder about the future of our relationship. In 1987 I suggested at the International Sedimentological Congress in Canberra that sedimentary geology must change and adapt to new circumstances. Today, the petroleum industry needs our expertise primarily in maximizing the recovery of rapidly shrinking hydrocarbon reserves, which requires very detailed sedimentological and petrophysical insights. The several branches of environmental geology have similar needs. Whether a sedimentary rock is a reservoir for petroleum or water, or is to be the foundation for a dam, an intimate knowledge of fundamental sedimentary properties is essential for constraining engineering models. If we do not provide informed knowledge, someone else will provide uninformed guesses. On another front, sedimentology has much to offer current efforts to assess global change. For example, climate models can be greatly refined with data from the sedimentary record—we may even be able to assess the relative changes of atmospheric carbon dioxide, which is a particularly critical parameter for those models. Addressing such issues as these provides major challenges for our profession, and I feel sure that W.H. Twenhofel would join me in urging younger colleagues to take up those challenges.

#### IN MEMORIAM

It is with regret the SEPM (Society for Sedimentary Geology) reports the deaths of the following members:

**Kenneth E. Caster**  
**Robert Frey**  
**Mackenzie Gordon, Jr.**  
**John C. Griffinths**

**Robert S. Grinnell**  
**Peter J. Hawkins**  
**Wendell B. Johnson**

**Viktor Petters**  
**R. Dana Russell**  
**Charles W. Stuckey, Jr.**

The Society acknowledges its indebtedness for their contributions to science and for their support of the Society's objectives.