

Proceedings of the Sixty-ninth Annual Meeting of the Mineralogical Society of America in Denver, Colorado

REPORT OF THE SECRETARY FOR 1988

The sixty-ninth annual meeting of the Society was held from October 31 to November 3, 1988, in Denver, Colorado. It coincided with the centennial celebration of the Geological Society of America. Oral presentations sponsored by MSA were organized into thirteen technical sessions: one on experimental petrology, five on igneous petrology, four on metamorphic petrology, two on crystallography, and one on volcanology. Poster presentations were included in five different poster sessions. The number of volunteered abstracts was 336, with 262 accepted in accord with GSA's recommended acceptance rate of 78%. MSA's representatives to the GSA Joint Technical Program Committee were Jo Laird, Mark S. Ghiorso, Robert J. Tracy, and Roger G. Burns. MSA's Symposium on "The Chemistry and Physics of Minerals in the Mantle" was organized by H.O.A. Meyer. Prior to the meeting, MSA's Short Course on "Hydrous Phyllosilicates (exclusive of micas)" was organized by S. W. Bailey.

The retiring President, D. B. Stewart, presented an address to the Society entitled "Crustal Processes in Maine" on Tuesday, November 1. Subsequently, President Stewart called the annual business meeting of the Society to order.

Council meetings

The first meeting of the 1988 Council was held on October 27, 1987, in Phoenix, Arizona; the second was on May 10, 1988, in Hunt Valley, Maryland; and the third meeting was on October 30, 1988, in Denver, Colorado.

The first meeting of the 1989 Council was also held in Denver, Colorado, on November 1, 1988.

Discussions and actions by Council, as summarized from minutes of the three 1988 Council meetings and the 1988 business meeting, are noted below.

Results of the 1988 election

The voting for officers and Council members of the Society for 1989 was held during the summer of 1988; the following persons were elected:

<i>President:</i>	Charles W. Burnham (1989)
<i>Vice-President:</i>	Peter Robinson (1989)
<i>Treasurer:</i>	James A. Whitney (1989–1990)
<i>Councillors:</i>	Frank C. Hawthorne (1989–1991) David R. Veblen (1989–1991)

The ballots (872) were certified on August 8, 1988, by the Tellers, H. K. Mao and M.J.K. Flohr. Approximately 33% of the members eligible to vote cast their ballots.

Membership statistics

As of December 1988 the Society's 2692 members included 1693 Members (+19), 514 Fellows (–20), 465 Students (–63), 5 Honorary Fellows (–1), and 15 Associated Life Members/Fellows (–3). Numbers in parentheses are changes from December 1987.

Necrology

It is with regret that the Society announces the deaths of the following Fellows and Members:

Victor T. Allen (LF)
Gerald Andrew (LM)
Frederic V. G. Bird (M)
Raymond N. Brothers (M)
Randolph Chapman (LF)
Benjamin J. Chromy (LF)
Hans Eugster (LF)—President 1985
Arnold Fainberg (M)
Ernest E. Fairbanks (LF)
Jerome D. Fisher (LF)
Robert Garrels (LF)
Glaucio Gottardi (HF)
Peter Misch (F)
Richard S. Mitchell (F)
Werner Nowacki (HF)
Lance R. Raynor (S)
Christopher Scarfe (M)
Vernon E. Scheid (LM)
Quentin D. Singewald (LF)
Dudley T. Smith (LM)
Bertold Suhner (M)
Udo Warhus (M)

Anyone who wishes to honor a deceased Fellow or Member by preparing a memorial should contact Memorialist B. H. Mason.

Financial affairs

Council voted to increase the annual subscription rate of the *American Mineralogist* to \$150 from \$140. Membership dues remained the same.

The Society's programs continue to benefit from contributions made by its members. Strong interest in the fund for Research Grants in Mineralogy/Petrology enabled the Society to present two awards for 1989.

The financial status of the Society is discussed in detail in the Report of the Treasurer.

American Mineralogist

Council approved establishment of a "Letters" section in the *American Mineralogist*. This option provides a means for rapid publication (4–6 months) of short communications that are unusually timely and significant.

Council discussed the request of *American Mineralogist* Editor James Munoz to step down from the editorship by November 7, 1989. Councillor Holdaway will chair the search committee for the new editor(s). Council agreed that reconfiguration of the editorship should also be considered during this change in personnel.

Awards

The 1989 Roebling Medal will be awarded to Helen D. Megaw of Cambridge and the 1989 Mineralogical Society of America Award to Michael A. Carpenter of Cambridge.

Two 1989 Research Grants for Mineralogy/Petrology were awarded. Recipients were Nancy Elizabeth Brown of Princeton University and Jillian Fiona Banfield of Johns Hopkins.

Sixteen students received the *American Mineralogist* Undergraduate Award in 1988.

Fellowship

Council approved Fellowship status for the following Members of the Society:

W. L. Brown
 J. B. Gill
 A. M. Kudo
 W. P. Leeman
 R. C. Liebermann
 J. Longhi
 M. H. Manghnani
 M. T. Naney
 J. D. Pasteris
 D. W. Rankin
 C. M. Scarfe (posthumous)
 E. B. Watson
 E. F. Westrum, Jr.
 W. E. Wilson

Nominations for officers for the 1989 election

President: Peter Robinson, University of Massachusetts
Vice-President: Larry W. Finger, Carnegie Institution of Washington
 (one to be elected) Malcolm Ross, U.S. Geological Survey
Secretary: Maryellen Cameron, Miami University
 (1990–1991)
Treasurer: (Not on 1990 ballot)

Councillors:
 (1990–1992; two to be elected)

Rosemary (Vidale) Buden, National Science Foundation
 Maria Luisa Crawford, Bryn Mawr College
 Charles V. Guidotti, University of Maine
 Lincoln S. Hollister, Princeton University

Other

Council approved establishment of a MSA Lecture Program to begin in 1989. Intent of the program is to foster interaction with educational institutions and promote wider awareness of current research in mineralogy, petrology, and crystallography. The lectures will be presented at a level appropriate for upper-division undergraduate students and beginning graduate students.

MSA and the American Geophysical Union reached an agreement regarding a joint Spring meeting starting in 1989. Both societies anticipate that the cooperation will strengthen the Spring meeting in the areas of mineralogy, petrology, and crystallography, as well as mineral physics.

Council also approved the establishment of the Distinguished Public Service Medal of the Mineralogical Society of America. Intent of the award is to recognize "distinguished contributions to public policy and awareness that individual scientists have made."

MARYELLEN CAMERON

REPORT OF THE TREASURER FOR 1988

This report summarizes the financial activity of the Mineralogical Society of America for the calendar year 1988. The financial statements have been audited by Laventhol & Horwath of Washington, D.C., and a copy of the audit report is on file at the Society's business office. The financial statements given in this report are taken from the audit report. The statements consist of a balance sheet for 1988 (Table 1, p. 1411) and a discussion of income and expense for 1988 and of 1988 income and expense for the Society's funds (Table 2, p. 1412).

The balance sheet (Table 1) shows that the net worth of the Society's funds increased to \$883,881 in 1988, an increase of 8.9%. The cash condition of the Society's accounts is strong. More than half of the \$42,761 unrealized loss on investments that occurred in 1987 owing to the October fall in the stock market was recovered during 1988. As of this writing in 1989, all of the unrealized loss on investments has been recovered.

The Society has four Funds. The *General Operating Fund*, which accounts for all aspects of the Society's operations, showed a deficiency of revenues over expenses of \$25,822, with a balance as of December 31, 1988, of \$57,675 (Table 2, column 1). The *Endowment Fund*, which acts as a reserve for the Society and whose income provides some support for Society operations and special projects, showed a growth of \$57,761 to yield a balance of \$725,560 (Table 2, column 2). The *Crystallography*

TABLE 1. STATEMENTS OF ASSETS, LIABILITIES AND FUND BALANCES DECEMBER 31, 1988 AND 1987

	1988		1987	
	Total	Unrestricted funds	Restricted funds	Total
ASSETS				
Current assets:				
Cash	\$ 263,817	\$ 263,817	\$ 302,187	\$ 302,187
Accounts receivable	20,484	20,484	10,301	10,301
Prepaid expenses and deposits	14,093	14,093	19,255	19,255
Total current assets	298,394	298,394	331,743	331,743
Investments (Note 3)	823,324	724,593	\$ 98,731	643,545
Furniture and equipment, net of accumulated depreciation (Note 4)	19,718	19,718		25,861
	\$1,141,436	\$1,042,705	\$ 98,731	\$1,081,146
				\$79,997
LIABILITIES AND FUND BALANCES				
Current liabilities:				
Accounts payable	\$ 43,290	\$ 43,290	\$ 27,279	\$ 27,279
Due to other publishers	13,602	13,602	21,340	21,340
Deferred revenues:				
Dues	45,773	45,773	70,333	70,333
Subscriptions	154,890	154,890	150,705	150,705
Due to (from) other funds		1,915	\$ (1,915)	3,990
				\$(3,990)
Total current liabilities	257,555	259,470	(1,915)	273,647
Commitments (Note 5)				(3,990)
Fund balances	883,881	783,235	100,646	727,502
	\$1,141,436	\$1,042,705	\$ 98,731	\$1,001,149
				\$79,997

TABLE 2. DETAIL REVENUES, EXPENSES AND CHANGES IN FUND BALANCES YEAR ENDED DECEMBER 31, 1988

	UNRESTRICTED			RESTRICTED			Grand total
	General operating fund	Endowment fund	Total	Crystallography fund	Mineralogy and petrology fund	Total	
Revenues:							
Publications	\$327,566		\$327,566				\$327,567
Investments	13,689	\$ 56,144	69,833	\$ 2,442	\$ 3,243	\$ 5,685	75,518
Dues	87,219		87,219				87,219
Short courses	30,040		30,040				30,040
Contributions		1,617	1,617	454	1,681	2,135	3,752
GSW	3,169		3,169				3,169
Expenses:							
Publication and distribution	461,683	57,761	519,444	2,896	4,924	7,820	527,264
General and administrative	279,782		279,782				279,782
Insurance	7,722		7,722				7,722
Payroll taxes	5,024		5,024				5,024
Printing and postage	8,025		8,025				8,025
Professional services	5,660		5,660				5,660
Rent	22,086		22,086				22,086
Salaries and benefits	78,468		78,468				78,468
Services and supplies	14,782		14,782				14,782
Telecommunications	1,928		1,928				1,928
GSA/Council and Committee expense	16,025		16,025				16,025
Membership services and awards	439,502		439,502				439,502
Short courses	9,068		9,068	3,500		3,500	12,568
Depreciation	26,445		26,445				26,445
GSW	9,943		9,943				9,943
	2,547		2,547				2,547
	487,505		487,505	3,500		3,500	491,005
Excess (deficiency) of revenues over expenses	(25,822)	57,761	31,939	(604)	4,924	4,320	36,259
Fund balance, January 1, 1988	82,987	644,515	727,502	37,357	46,630	83,987	811,489
Transfer	510	(510)					
Reduction in unrealized loss on investments		23,794	23,794	5,469	6,870	12,339	36,133
Fund balance, December 31, 1988	\$ 57,675	\$725,560	\$783,235	\$42,222	\$58,424	\$100,646	\$883,881

Fund and the *Mineralogy-Petrology Fund*, which provide biennial research grants to promising young scientists, increased by \$5,469 and \$6,870, respectively, to yield balances of \$42,222 and \$58,424 (Table 2, columns 3 and 4).

Significant changes in costs during 1988 included continuing decrease in business office costs and increase in printing and publication costs. The latter were partially offset by the increase in cost to subscribers for the *American Mineralogist* reported last year. During the current year, a sharp increase in the receipt of page charges and reprint payments has allowed the Society to avoid any further increases in subscription rates or dues through 1990.

Therefore, at the end of 1988, the Society is in strong financial health. The deficiency in the General Operating Fund is a small percent of the operating budget and is projected downward for 1989. Our goal continues to be to keep dues low (so that the members are receiving value for their dues), library subscription rates reasonable, and student rates as low as possible so they can afford the journal and the *Reviews in Mineralogy*. In 1990, thanks in part to increases in page charge and reprint payments, the cost of subscriptions will remain at \$150, new *Reviews* are \$20 (less with member's discount), and dues remain at \$40 for members and \$20 for students. If you consider what you get for your dues, we feel that you will agree that the Mineralogical Society of America is still one of the best bargains in professional societies for earth scientists.

JAMES A. WHITNEY

REPORT OF THE FINANCIAL ADVISORY COMMITTEE FOR 1988

The endowments of the Mineralogical Society of America consist of three parts: one large unrestricted fund, the Endowment Fund, and two smaller restricted funds, the Crystallography Fund and the Mineralogy-Petrology Fund. It is important to emphasize that the following report reflects the fiscal year history of monies actually invested in the MSA endowment accounts, including net transfers made during 1988. It does not include any new endowment contributions or budgeted expenditures residing in the Society's General Operating Fund at year-end pending transfer by the Treasurer in 1989.

No significant reallocation of investment instruments occurred during 1988. The Society's Endowment Fund was divided among two U.S. Treasury bills, two cash money-market funds, and two stock mutual funds, Fidelity Magellan Fund and Reich and Tang Equity Fund. At year-end, the Endowment Fund was 26% in cash or cash equivalents and 74% in equities. The two smaller restricted funds were 100% in equity-income mutual funds.

Growth in the market value of the MSA endowments

was substantial during 1988. The market value of all of the endowments increased from \$723,542 in 1987 to \$867,226 in 1988 with the costs of the endowments increasing from \$767,882 in 1987 to \$831,531 in 1988. The market value of the endowments increased 19.9% while the costs increased 8.3%. Growth was realized in the Endowment Fund, which increased in market value from \$643,545 in 1987 to \$768,495 in 1988 as the cost increased from \$667,339 in 1987 to \$724,593 in 1988. The market value of the Crystallography Fund increased from \$36,435 in 1987 to \$41,799 in 1988 as the cost decreased from \$45,824 in 1987 to \$45,719 in 1988. The market value of the Mineralogy and Petrology Fund increased from \$43,562 in 1987 to \$56,932 in 1988 as the cost increased from \$54,719 in 1987 to \$61,219 in 1988.

Income to and expenses charged against the endowment funds for 1988 were as follows. Income received by the Endowment Fund was derived from the following sources: contributions, \$1,617; dividends, \$11,463; interest on Treasury bills, \$8,500; reinvested income, \$9,152; long-term capital gain (Fidelity), \$26,410; and short-term capital gain (Fidelity), \$618. Expenses of \$510 were incurred by the Endowment Fund for the AMU awards. Income received by the Crystallography Fund was derived from contributions of \$454 and reinvested income of \$2,442. Expenses of \$3,500 were incurred by the Crystallography Fund for the research grant. The Crystallography Fund had a net loss of expenses over income of \$604. The Petrology-Mineralogy Fund received income from contributions of \$1,681 and reinvested income of \$3,243 and incurred no expenses. Total income from all of the Society's endowment investments was \$61,829. This figure is down 45% from 1987. The decrease in income arises from the difference in capital gains in which large capital gains of \$85,455 were realized in 1987 from the transfer of funds from the two stock funds to the two money-market funds. Income from interest and dividends increased in 1988.

Respectfully submitted,
B. S. HEMINGWAY, Chair
J. F. HAYS (Management Committee Chair)
G. L. NORD, JR.
J. H. STOUT
J. A. WHITNEY (Treasurer)

REPORT OF THE EDITOR FOR 1988 (OCTOBER 1, 1987-SEPTEMBER 30, 1988)

During the year ending September 30, 1988, 212 manuscripts were submitted to the journal. This may be compared to 193 manuscripts for the same annual period in 1987, and thus represents an increase of 10%. The number of manuscripts rejected or withdrawn was 48, corresponding to an effective rejection rate of 22%, which is comparable to that of past years. Volume 73 of *American Mineralogist* will contain 1532 total pages, which

TABLE 1. Summary of *American Mineralogist* operations

Volume	No.	Number of scientific articles	Pages of scientific articles	Pages of miscellaneous	Total pages	Signatures*
October 1, 1987, to September 30, 1988						
72	9-10	21	163	25	188	5.875
72	11-12	22	218	34	252	7.875
73	1-2	20	199	1	200	6.25
73	3-4	30	248	0	248	7.75
73	5-6	23	219	9	228	7.125
73	7-8	32	257	7	264	8.25
73	9-10	32	268	12	280	8.75
73	11-12	36	273	39	312	9.75
Total (v. 73)		173	1464	68	1532	47.875
For comparison: 1987						
Total (v. 72)		148	1211	91	1302	40.688
For comparison: 1986 (including Jahns's Memorial Issue)						
Total (v. 71)		171	1465	107	1572	49.125
Manuscripts submitted, 10/1/87 to 9/30/88						212
Manuscripts submitted, 10/1/86 to 9/30/87						193
Manuscripts in press for January-February 1989						35**
Manuscripts in press for January-February 1988						19†
Manuscripts on hand for March-April 1989						15**
Manuscripts on hand for March-April 1988						10†
Manuscripts under review						87**
Manuscripts under review						120†
Manuscripts rejected, 10/1/87 to 9/30/88						31
Manuscripts rejected, 10/1/86 to 9/30/87						20
Manuscripts withdrawn, 10/1/87 to 9/30/88						17
Manuscripts withdrawn, 10/1/86 to 9/30/87						20
* One signature = 32 pages.						
** As of September 30, 1988.						
† As of September 30, 1987.						

represents an increase of 18% over 1987. The average publication time for regular articles (counting from the date that the manuscript is received in the editorial office to the date of publication) remains constant at about one year, but the standard deviation is large. Excessively long publication times are almost always a result of delays during the revision process, when the manuscript is under the control of the author or authors. Details of journal operation as of September 30, 1988, are summarized in Table 1.

During the summer of 1988, *American Mineralogist* introduced "Letters," a new manuscript format that is a vehicle for rapid (4-6 months) publication of research results that are judged to be especially timely, significant, and of interest to a significant percentage of our readers. The extremely short publication time is made possible by restricted manuscript size (limit of 15 total pages counting title page and each figure and/or table as one page), rapid review (48 hours), rapid revision (less than one week is required), and the extra effort expended by Mary Eberle and Allen Press that it takes to squeeze an accepted "Letter" into an issue that has already been typeset and paged. Initial response has been very positive, and I expect this new option to be a successful and popular addition to the journal.

It is an understatement to report that the new color for the journal cover adopted in 1988 did not meet with wide acclaim. Fortunately, yet another color change will appear in 1989. The new yellow is bright and cheery. Finally, as always, I am happy to acknowledge the unflagging support of the MSA Council, Susan Myers in the business office, and Mary Eberle.

J. L. MUNOZ

REVIEWERS OF MANUSCRIPTS EITHER PRINTED OR REJECTED IN 1988

- Altaner, S. P.
 Amouric, M.
 Andersen, D. H.
 Andersen, H.
 Angel, R. J.
 Appleman, D. E.
 Aragon, R.
 Arculus, R. J.
 Bailey, S. W.
 Bakken, B.
 Barton, M. D.
 Bayliss, P.
 Bish, D. L.
 Bloss, F. D.
 Bohlen, S. R.
 Bown, M. G.
 Boyd, F. R., Jr.
 Brady, J. B.
 Brearley, A. J.
 Brey, G.
 Brookins, D. G.
 Bukowinski, M.S.T.
 Burnham, Charles W.
 Burns, R. G.
 Buseck, P. R.
 Calas, G.
 Cameron, M.
 Carmichael, I. S.
 Carpenter, M. A.
 Cashman, K.
 Černý, P.
 Chakoumakos, B. C.
 Champness, P. E.
 Cheney, J. T.
 Chernosky, J. V., Jr.
 Chivas, A. R.
 Chou, M.
 Clayton, C.
 Coey, J. M.
 Cohen, A. J.
 Davidson, P. M.
 Davis, G.
 Dawson, B.
 Dickenson, M. P., III
 Dollase, W. A.
 Downs, J. W.
 Dowty, E.
 Drake, M. J.
 Dungan, M. A.
 Dyar, M. D.
 Edgar, A. D.
 Egglar, D. H.
 Ehrlich, R.
 Engler, P.
- Ercit, T. S.
 Essene, E. J.
 Evans, B. W.
 Evans, H. T., Jr.
 Farmer, L.
 Ferry, J. M.
 Fleet, M. E.
 Foit, F. F., Jr.
 Francis, C. A.
 Fridsch, E.
 Fryer, B.
 Garofalini, S. V.
 Gaskell, D. R.
 Gervais, F.
 Ghent, E. D.
 Ghiorso, M. S.
 Ghose, S.
 Gibbs, G. V.
 Giese, R. F.
 Goodman, B.
 Graham, C. M.
 Grambling, J. A.
 Green, N. L.
 Greenwood, H. J.
 Grew, E. S.
 Grice, J. D.
 Griffen, D. T.
 Grossman, L.
 Grove, T. L.
 Grover, J. E.
 Guggenheim, S. J.
 Gust, D. A.
 Haggerty, S. E.
 Hanor, J. S.
 Harlow, G. E.
 Hauff, P.
 Hawthorne, F. C.
 Helz, R. T.
 Hemingway, B. S.
 Henderson, G. S.
 Henry, D. J.
 Hess, P. C.
 Hill, R. J.
 Hochella, M. F., Jr.
 Hofmeister, A. M.
 Hogarth, D. D.
 Holdaway, M. J.
 Hughes, J. M.
 Hutton, D. R.
 Inoue, A.
 Jefferson, D.
 Keller, W. D.
 Kirkpatrick, R. J.
 Kordas, G.
- Kroll, H.
 Labotka, T. C.
 Lager, G. A.
 Lal, R. K.
 Lang, H. M.
 Lange, R. A.
 Langer, K. E.
 Langmuir, D.
 Lear, P.
 Lehmann, J.
 Liebau, F.
 Lindsley, D. H.
 London, D.
 Longhi, J.
 Luhr, J. F.
 Luth, R. W.
 MacKinnon, I.D.R.
 Mahood, G. A.
 Mandarino, J. A.
 Martignole, J.
 Martin, R. F.
 Matson, D.
 Mattioli, G. S.
 McDowell, S. D.
 McKibben, M.
 McLellan, E.
 Meier, W. M.
 Moore, P. B.
 Morse, S. A.
 Munoz, J. L.
 Murray, J. W.
 Nablek, P. I.
 Nadeau, P. H.
 Nassau, K.
 Newnham, R. E.
 Nicholls, J. W.
 Nord, G. L., Jr.
 Nordstrom, D. K.
 Novak, S. W.
 Paque, J.
 Peacock, S. M.
 Peacor, D. R.
 Peck, J.
 Perkins, D., III
 Phillips, M. W.
 Polts, P.
 Ponader, C. W.
 Popp, R. K.
 Post, J. E.
 Price, G. D.
 Rajamani, V.
 Ramik, R.
 Redfern, S.A.T.
 Reeder, R. J.
- Reynolds, R. C., Jr.
 Ribbe, P. H.
 Rieder, M.
 Rimstidt, J. D.
 Robie, R. A.
 Robins, R. G.
 Robinson, G. W.
 Roeder, P. L.
 Rosenberg, P. E.
 Rossi, G.
 Rossman, G. R.
 Rouse, R. C.
 Rumble, D., III
 Ryerson, F. J.
 Salje, E.
 Sawhney, B. J.
 Saxena, S. K.
 Schaefer, M. W.
 Schock, R. N.
 Schreyer, W. E.
 Schumacher, J. C.
 Sherman, D. M.
 Shraizu, N.
 Sigurdsson, H.
 Smith, B. K.
 Smykatz-Kloss, W.
 Smyth, J. R.
 Speer, J. A.
 Spera, F. J.
 Spry, P. G.
 Stormer, J. C., Jr.
 Stucki, J.
 Szymanski, J. T.
 Tossell, J. A.
 Ungaretti, L.
 van Tendeloo, G.
 Veblen, D. R.
 Velde, B.
 Vergo, N.
 Virgo, D.
 Vogel, T.
 Vry, J. K.
 Watson, B.
 Waychunas, G. A.
 White, W. B.
 Whitney, G.
 Williams, H. R.
 Williams, Q.
 Wood, B. J.
 Wright, A. C.
 Wuensch, B. J.
 Yoder, H. S., Jr.
 Yund, R. A.
 Zoltai, T.