Proceedings of the Seventy-first Annual Meeting
of the Mineralogical Society of America
in Dallas, Texas

REPORT OF THE SECRETARY FOR 1990

The seventy-first annual meeting of the Society was held on October 29–November 1 in Dallas, Texas. Oral presentations sponsored by MSA were organized into 18 technical sessions: two on experimental petrology, six on igneous petrology, five on metamorphic petrology, two on mineralogy and crystallography; and three on volcanology. Five of these sessions were poster presentations and two were theme sessions. The number of volunteered abstracts in the five MSA-sponsored categories was 244, with an acceptance rate at 93% for all categories. MSA’s representatives to the GSA Joint Technical Program Committee were R. J. Tracy, M. S. Ghiorso, and D. L. Bish. MSA’s symposium, “Thermodynamic Mixing Properties of Petrologically Important Minerals,” was convened by M. S. Ghiorso and R. C. Newton. Prior to the meeting, MSA’s short course, Mineral Water Interface Geochemistry, was organized by Michael F. Hochella, Jr., and Art F. White.

The retiring President, P. Robinson, presented an address to the Society entitled “The Eye of the Petrographer, the Mind of the Petrologist” on Tuesday, October 30. Subsequently, President Robinson called the annual business meeting of the Society to order.

Council meetings

The first meeting of the 1990 Council was held on 7 November 1989 in St. Louis, Missouri; the second was on 29 May 1990 in Baltimore, Maryland; and the third was held on 28 October 1990 in Dallas, Texas.

The first meeting of the 1991 Council was also held in Dallas, Texas, on 30 October 1990.

Discussions and actions by Council, as summarized from minutes of the three 1990 Council meetings and the 1990 business meeting, are noted below.

Results of the 1990 election

The voting for officers and Council members of the Society for 1991 was held during the summer of 1990; the following persons were elected:

President: Malcolm Ross (1991)
Vice-President: Michael J. Holdaway (1991)

The ballots (852) were certified on 11 September 1990 by the Tellers Ann G. Wylie and Bjorn O. Mysen. Approximately 36% of the membership eligible to vote cast their ballots.

Membership statistics

As of December 1990 the Society’s 2415 members included 1503 Members (–134), 547 Fellows (–11), 333 Students (–67), six Honorary Fellows (–1), and 26 Associated Life Members and Life Fellows (+6). Numbers in parentheses are changes from December 1989.

Necrology

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

Edwin B. Eckel (LF)
Per-Olov Ehlin (M)
Robert M. Garrels (LD)
Ralph E. Grim (LF)
Stephen Hui (M)
Charles Milton (LF)
Adolph Pabst (LF)
Guiseppe Rossi (M)

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

Financial affairs

Relocation and reorganization of the editorial office of American Mineralogist has required substantial additional support from the Society compared to previous years. The financial status of the Society is discussed in detail in the Report of the Treasurer.

American Mineralogist

Council approved appointments of the following Associate Editors, who will serve for the four-year period 1991–1994: Ross Angel, Philip E. Brown, John B. Brady, Mark S. Ghiorso, and Jonathan F. Stebbins. Issues related to American Mineralogist are discussed in the Report of the Editors for 1990.

Awards

The 1991 Roebling Medal will be awarded to E-an Zen (U.S. Geological Survey and the University of Maryland, College Park), the 1991 Mineralogical Society of America Award to Mark D. Barton (University of California at Los Angeles), and the Distinguished Public Service Medal of the Mineralogical Society of America to H. Catherine W. Skinner (Yale University).

The recipient of the 1991 Mineralogy-Petrology Research Grant Award is John C. Ayers of Rensselaer Polytechnic Institute, New York.
Thirteen students received the *American Mineralogist* Undergraduate Award in 1990.

**Fellowship**

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

- Jan H. Bernard
- Michael F. Hochella, Jr.
- David L. Bish
- M. Qasim Jan
- Robert J. Bodnar
- Jeffrey E. Post
- Ernst A. J. Burke
- Jonathan F. Stebbins
- Harry W. Green II
- Glenn A. Waychunas

**Nominations for officers for the 1991 election**

- President: Michael J. Holdaway, Southern Methodist University
- Vice-President: Alexandra Navrotsky, Princeton University
- Gordon L. Nord, Jr., U.S. Geological Survey
- Secretary: Stephen J. Guggenheim, University of Illinois at Chicago
- Treasurer: David L. Bish, Los Alamos National Laboratory
- Councillors: Michael F. Hochella, Jr., Stanford University
- Richard J. Reeder, SUNY Stony Brook
- Joseph R. Smyth, University of Colorado at Boulder

**Other**

The MSA Lecture Program continues to be extremely well received within the geoscience community. Seventy-two requests for speakers were received by the Society. The 1990–1991 lecturers, M. Darby Dyer and Harry Y. McSween, expect to present lectures at approximately a dozen universities before the end of the 1990–1991 academic year.

MSA and AGU continue to hold a joint Spring meeting. In the second joint meeting (1990), MSA Representative to the AGU Program Committee, Joseph R. Smyth, organized 55 MSA-designated abstracts into five sessions. MSA encourages members interested in organizing special or joint sessions at the AGU-MSA Spring meeting to contact the MSA Business Office for additional information.

The following short courses have been approved by MSA Council: Modern Methods in Igneous Petrology (Fall 1990 AGU), Fe-Ti Oxides: Their Petrologic and Geophysical Significance (Spring 1991 AGU), Contact Metamorphism (Fall 1991 GSA), Physical Properties of Minerals (Spring 1992 AGU), High-Resolution Transmission Electron Microscopy (Fall 1992 GSA), and Health Effects of Mineral Dusts (Fall 1993 GSA).

**REPORT OF THE TREASURER FOR 1990**

This report summarizes the financial activity of the Mineralogical Society of America for the calendar year 1990. The financial statements have been audited by Massey Good and Associates of Gaithersburg, Maryland. The financial statements given in this report are taken from the audit report.

The Statement of Assets, Liabilities, and Fund Balances (Table 1) shows a negative balance of $48,406 in the General Operating Fund and positive balances of $842,531 in the Endowment Fund, $41,580 in the Crystallography Fund, and $57,665 in the Mineralogy and Petrology Fund. Table 2, Statement of Revenue and Expense, demonstrates that these balances represent a $98,885 decrease in the General Operating Fund, a $37,941 increase in the Endowment fund, and increases of $747 and $6,627 in the Crystallography and Mineralogy and Petrology Funds, respectively. The Society’s net worth therefore decreased by a total of $74,701, or 6.0%. This loss includes an excess of expense over revenues of $53,570. The rest represents an unrealized loss on investments not offset by investment income.

**Breakdown by funds**

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 $98,885, with a balance as of December 31, 1990, of negative $48,406 (Tables 1 and 2, column 3). The Endowment Fund, which acts as a reserve for the Society and whose income provides some support for Society operations and special projects, showed an excess of revenue over expenses of $37,941 to yield a balance of $842,531 (Tables 1 and 2, column 4). The Crystallography Fund and the Mineralogy and Petrology Fund, which provide biennial research grants to promising young scientists, showed an excess of revenue over expenses of $747 and $6,627, respectively, to yield balances of $41,580 and $57,665 (Tables 1 and 2, columns 6 and 7).

**Discussion of changes**

The losses for the year were due to a number of causes involving both decreased revenues and increased expenses. In income, MSA dues received were 3% below projections and *American Mineralogist* income was 9% below budget. These losses were partially due to 44 fewer subscribers, 46 fewer members, and 12 fewer student members than in the original budget. *Reviews in Mineralogy* brought in 24% more revenue than projected, but this was partially offset by increased costs of printing and distribution. Money market income was also lower due to lower cash balances and lower interest rates.

Under expenses, the business office came in under budget by 7% ($12,262). *Reviews in Mineralogy* came in over budget by $13,278, but this was offset by the increased revenue shown above. *American Mineralogist* came in over budget by 53% for the editorial office ($28,612) and...
15% ($23,885) for printing and distribution. The short courses lost $8,249 for the year.

**Business office.** The business office came in under budget for two reasons. First, the position of membership coordinator was not filled with a full-time person as projected, but rather with a part-time person. Taxes and benefits for 1990 were way below budgeted amounts. This was partially caused by keeping the part-time position of Membership Coordinator, which does not carry fringe benefits for 1990 were way below budgeted amounts. This was partially caused by keeping the part-time position of Membership Coordinator, which does not carry fringe benefits, and a change in the accounting for vacation time. Other items listed in the budget under Administration came in reasonably close to budget.

**Reviews in Mineralogy.** Both the income and expenses for Reviews in Mineralogy were affected by the fact that we printed three new volumes in 1990. Volume sales were higher than budget by $15,000. The income from subscriptions was also up due to the publication of three volumes. Editorial office expenses were up $1,000 over the budget due to $500 for the third volume and $500 approved by Council for technical typing. Composition and printing and postage were also up accordingly. These factors accounted for most of the cost overruns. The cost overruns were more than offset by increased revenues. Therefore, Reviews in Mineralogy continues to show a profit for the Society.

**American Mineralogist.** The American Mineralogist accounts for the majority of revenue shortfalls and cost overruns. The loss of members and subscribers shows up mainly in a decrease in revenue for the American Mineralogist. Also, page charges fell $5,000 below budget, and reprint sales decreased to less than half the 1989 rate, and far below the $10,000 budgeted to come from this source. In addition, the interest income from the Commercial Money Market is normally credited to the American Mineralogist, and that too was down for the year. The net result was that revenues for the American Mineralogist were down $23,478.

At the same time, expenses increased greatly. A new full-time position of assistant editor was created to resolve the problem of chronic understaffing in the editorial office. As a consequence, taxes and benefits went up as well. Other categories, including typist and editorial support, office supplies, postage, and travel, had to be increased substantially because of the increased staff and the increasing workload. There were also additional transition expenses associated with transferring the office, including software and computer facilities. All of this resulted in the $28,612 or 53% increase in the cost of running the editorial office.

The costs of printing and distribution also were over budget, since an anticipated decrease in the number of signatures published did not occur. The majority of these increased costs were in composition and printing ($23,885) although a substantial increase was also encountered in revision lines, which were considerably higher than in the previous year.

The net result was an approximately $60,000 increase in the deficit for the American Mineralogist, from a $19,895 budgeted shortfall to $89,896. This is essentially the entire difference in the 1990 actual expenses over budget, which shows a $61,282 greater loss than originally projected.

**Short courses.** This past year, we lost $8,249 on short courses. This loss was dominantly from a small atten-
dance at the San Francisco short course. In the future, we feel we should not schedule short courses at Fall GSA and AGU in San Francisco in the same year. Financially speaking we do not seem to have the needed clientele at the San Francisco AGU. In the future, we must also be sure that the convener's projections of attendance are reasonable.

Summary

In summary, the 1990 year was one of financial difficulty for the Society. We lost nearly $100,000 in the General Operating Fund, which depleted our cash reserves in that fund, yielding a negative balance on paper, and as a result experienced a decrease of $75,701 in the net value of the Society.

Unfortunately, 1991 expenses will also exceed income because of the record number of pages to be published in the American Mineralogist in 1991, including the Thompson issue. At the Fall GSA meeting, the Council approved taking up to $100,000 from the Endowment, if necessary, to fund publication of up to 63 signatures in 1991 and to cover the society's other expenses for the year.

After thorough discussion at the May Council meeting, the Council adopted a plan for increasing revenues and cutting costs for 1992. The subscription rates for 1992 will be increased by approximately 15% to $200, with an additional surcharge for foreign subscribers to pay for higher postage costs. The dues for students and regular members will be raised by $10 to $30 and $50, respectively, with the increase being assigned to the American Mineralogist. A 3% surcharge is also being imposed on all credit card charges received by mail or phone to offset the fees the society must pay to the credit card companies.

The American Mineralogist will return to issues of a normal size in 1992. In addition, the editorial office and business office will continue to keep expenses to a minimum and look for other ways to cut printing costs in conjunction with negotiating the new contract with Allen Press.

With these changes, it is projected that the society should be back to a nearly balanced budget by 1992.

James A. Whitney

<table>
<thead>
<tr>
<th>TABLE 2. Statements of revenue and expense</th>
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<td></td>
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<tr>
<td>Revenue:</td>
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<tr>
<td>Publications</td>
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<td>American Mineralogist</td>
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<td>Income from investments</td>
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<td>Contributions</td>
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<td>Research grant</td>
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<td>Meetings</td>
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<td>$7,374</td>
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Table 1. Changes in the Society's Endowment

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<th>Market</th>
<th>Cost</th>
<th>Market</th>
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<td>$860,995</td>
<td>$819,875</td>
<td>$834,585</td>
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<td>40,870</td>
<td>51,441</td>
<td>49,973</td>
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<td>Mineralogy and Petrology</td>
<td>70,165</td>
<td>56,032</td>
<td>63,030</td>
<td>62,341</td>
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<table>
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<th>Investment type</th>
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<td>U.S. Government obligations</td>
<td>40,000</td>
<td>40,000</td>
<td>80,000</td>
<td>80,000</td>
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<td>Mutual funds-stocks</td>
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<td>778,446</td>
<td>721,821</td>
<td>834,374</td>
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<td>Cash equivalents</td>
<td>139,451</td>
<td>139,451</td>
<td>132,525</td>
<td>132,525</td>
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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 and 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 1990. 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 1991.

No significant reallocation of investment instruments occurred during 1990. 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. Near year end, one U.S. Treasury bill ($40,000) matured. The funds were not reinvested in a U.S. Treasury bill but were placed in a money market fund in the Society's General Operating 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.

Stock prices declined in the last quarter of 1990 in response to uncertainties regarding the economy and the conflict in the Arabian Gulf area. The market value of endowment funds decreased from $1,046,899 in 1989 to $997,897 in 1990, as costs rose from $934,346 in 1989 to $939,374 in 1990. The market value of funds actually in the endowment funds at year end was $957,897, as $40,000 received from a matured U.S. Treasury bill was placed into the General Operating Fund near year end. Costs increased 0.5% while the market value of funds actually in the Endowment funds decreased 8.5%. Changes in the Endowment by fund type and by investment type are given in Table 1.

The Society suffered operating losses of about $85,000 in 1990 with a larger loss projected for 1991. The losses are associated with increased costs for editing and publishing the American Mineralogist (see Treasurer's report). Some, and probably most, of the losses will have to be covered by Endowment funds during 1991 and 1992.

Although the Society remains in a strong financial position, expenses and income must be balanced or the Society's Endowment fund will be depleted.

Respectfully submitted,
B. S. Hemingway, Chair
D. A. Hewitt
O. B. James (Acting Chair, Management Committee)
J. H. Stout
J. A. Whitney (Treasurer)

Report of the Editors for 1990
(October 1, 1989-September 30, 1990)

This year has been one of significant change for the editorial office. This is the first year in which there have been two coeditors, a change mandated by the increasing number of submissions and resultant workload. From the point of view of the coeditors, the change has worked well. The division of labor between a crystallographer-mineralogist and a petrologist-mineralogist seems to ensure adequate coverage of the great variety of subject matter. Submissions continue to represent breadth over the range of mineralogy, crystallography, and petrology, with significant increases especially in the areas of mineral physics and clay mineralogy.

The editorial office was moved from Boulder, Colorado, to Ann Arbor, Michigan, and the new managing editor, Vicki Lawrence, has hired and trained new staff. With the permission of Council, we have hired a full-time assistant editor, Joyce Sherman, who replaced our part-time editorial assistant. The staff in the managing editor's office now consists of Joyce Sherman (Assistant Editor), and Jane Rodgers (Editorial Secretary; part-time). This represents an increase in staffing equivalent to a half-time position and was necessary to alleviate the longstanding understaffing of the editorial office.

New computer equipment has been purchased and programming of new software is underway. The index for Volume 75 was printed on a laser printer with a font that closely approaches that used by Allen Press for the journal. As a result, the index has the appearance of having been typeset and has a far more professional look.
Fig. 1. Manuscripts submitted to and published by the American Mineralogist from 1980 through 1990.

As can be seen in Figure 1, the number of manuscripts submitted to the journal increased for the fifth year in a row to a record 269 manuscripts in 1990. Not only has the number increased, but the average length of papers has increased as well. Table 1 gives comparisons for the last three years of operations.

The special issue in honor of J. B. Thompson, Jr., has added to the problems of dealing with the increase in number, length, and complexity of papers. These factors, in addition to the move of the editorial office to Ann Arbor, the training of a whole new staff, and problems (now resolved) in having two editors, have combined to create a difficult situation for the journal and its staff. One very visible result has been that the production schedule of the American Mineralogist has fallen behind.

At the Fall meeting, we presented the Council with three possible solutions: fund larger issues, authorize the creation of a large backlog, or authorize a greatly increased rejection rate. After discussion, the council approved funding larger issues and a temporary half-time staff position to help process the increased load. As a result, in 1991 the journal will publish approximately 2000 pages and will make up the time lost in the production schedule.

Papers submitted in 1991 should not be affected by the glut created in 1990. In fact, since these papers will profit by the increased staffing and efficiency implemented to solve the 1990 problems, they should receive especially rapid publication.

Steven R. Bohlen, Editor
Donald R. Peacor, Editor
Vicki Lawrence, Managing Editor

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**TABLE 1. Summary of American Mineralogist operations**

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<tr>
<th>Volume</th>
<th>No.</th>
<th>Number of scientific articles</th>
<th>Pages of scientific articles</th>
<th>Pages of miscellaneous</th>
<th>Total pages</th>
<th>Signatures*</th>
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<td>9–10</td>
<td>32</td>
<td>256</td>
<td>8</td>
<td>264</td>
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<tr>
<td>74 / 74</td>
<td>11–12</td>
<td>26</td>
<td>176</td>
<td>35</td>
<td>211</td>
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<tr>
<td>75 / 75</td>
<td>1–2</td>
<td>27</td>
<td>246</td>
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<td>246</td>
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<tr>
<td>75 / 75</td>
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<td>26</td>
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<td>26</td>
<td>220</td>
<td>24</td>
<td>244</td>
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<td>Total (v. 75)</td>
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<td>1422</td>
<td>52</td>
<td>1474</td>
<td>46.68</td>
</tr>
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</table>

| For comparison: 1989 | 1374 | 69 | 1443 | 45.25 |
| For comparison: 1988 | 1481 | 71 | 1532 | 47.875 |
| For comparison: 1987 | 1211 | 91 | 1302 | 40.688 |

Manuscripts submitted, 10/1/89 to 9/30/90: 269
Manuscripts submitted, 10/1/88 to 9/30/89: 239
Manuscripts submitted, 10/1/87 to 9/30/88: 212
Manuscripts rejected, 10/1/89 to 9/30/90: 45
Manuscripts rejected, 10/1/88 to 9/30/89: 29
Manuscripts rejected, 10/1/87 to 9/30/88: 31
Manuscripts withdrawn, 10/1/89 to 9/30/90: 17
Manuscripts withdrawn, 10/1/88 to 9/30/89: 13
Manuscripts withdrawn, 10/1/87 to 9/30/88: 17

* One signature = 32 pages.
Reviewers of manuscripts either printed or rejected in 1990

Abbott, R. N.
Aines, R.
Aleinikoff, J.
Alpers, C. N.
Altaner, S. P.
Angel, R. J.
Anovitz, L. M.
Apps, J.
Arculus, R. J.
Arrhenius, G. O.
Ashwal, L. D.
Bailey, S. W.
Barber, D. J.
Barker, D. S.
Baronnet, A.
Bass, J. D.
Bauer, J.
Beard, J. S.
Beran, A.
Berman, R. G.
Bethke, C. M.
Birnie, R. W.
Bischoff, W. D.
Bish, D. L.
Bishop, F. C.
Blank, J.
Bloss, F. D.
Bohlen, S. R.
Boles, J. R.
Brady, J. B.
Brearley, A.
Brookins, D. G.
Brown, P. E.
Brown, T. L.
Brown, W. L.
Bukowinski, M.S.T.
Burnham, C. W.
Burns, R. G.
Burt, D. M.
Burton, B.
Cabri, L. J.
Calas, G.
Candel, A. P.
Cerný, P.
Chacko, T.
Chatterjee, N. D.
Chernosky, J. V., Jr.
Chipera, S. J.
Cohen, R. E.
Condon, D.
Cosca, M. A.
Crowley, K. D.
De Grave, E.
Dingwell, D. B.
Dollase, W. A.
Donahoe, R.
Donelick, R. A.
Doolan, B. L.
Downs, J. W.
Dunbar, N. W.
Dunn, P. J.
Dyar, M. D.
Dymek, R. F.
Ebel, D. S.
Eberl, D. D.
Eggler, D. H.
Ellis, D.
Emslie, R. F.
Ekriksson, S. C.
Farver, J.
Finger, L. W.
Fleet, M. E.
Flemming, R.
Foit, F. F., Jr.
Fournier, R. O.
Francis, C. A.
Francis, D.
Freed, R. L.
Frost, R.
Gaffey, S. J.
Ganguly, J.
Gasparik, T.
Getting, I.
Ghiorso, M. S.
Gibbs, G. V.
Giese, R. F.
Gilpet, P.
Gittins, J.
Grambling, J. A.
Grant, J. A.
Greenwood, H. J.
Grew, E. S.
Griffen, D. T.
Groat, L. A.
Grove, T. L.
Gudmundsson, G.
Guggenheim, S. J.
Guthrie, G.
Haggerty, S. E.
Hammarsstrom, J. M.
Harlow, G. E.
Harte, B.
Haselton, T.
Hawthorne, F.
Hazen, R. M.
Hearn, B. C., Jr.
Helgeson, H. C.
Helper, M.
Hem, J.
Hemley, R. J.
Henderson, C.M.B.
Henderson, G. S.
Hochella, M. F., Jr.
Hodges, K. V.
Hoering, T. C.
Hofmeister, A. M.
Holdaway, M. J.
Hollowcher, K.
Holloway, J. R.
Honig, J. M.
Hovis, G. L.
Huebner, J. S.
Hughes, J. M.
Inoue, A.
Jambor, J. L.
Jenkins, D. M.
Johns, W. D.
Joyce, D.
Juster, T.
Kashman, K.
Keays, R. R.
Keller, K. D.
Kerrick, D. M.
Kirkpatrick, R. J.
Kodama, H.
Kohn, M.
Koziol, A.
Kress, V. C.
Krupka, K. M.
Labotka, T. C.
Lager, G. A.
Laird, J.
Lamb, W.
Lambert, D. L.
Lange, R. A.
Leavens, P. B.
Lehmann, G.
Leonard, B. F.
Lindsley, D. H.
Liou, J. G.
Lofgren, G. E.
London, D.
Longhi, J.
Luhr, J. F.
Luth, R. W.
MacKinnon, I.D.R.
Mackwell, S.
Mahood, G. A.
Maroni, V.
Mattioli, G.
McCullum, M. E.
McCormick, T. C.
McDowell, S. D.
McKenna, L. W.
McLelland, J.
McMillan, P.
McNeil, L.
Mellini, M.
Mendelsonsohn, M.
Merzbacher, C. I.
Meyer, H.O.A.
Miser, D. E.
Moecher, D.
Moore, P. B.
Morrison, J.
Morse, S. A.
Mortensen, J.
Munoz, J. L.
Murad, E.
Mysen, B.
Nassau, K.
Navrotsky, A.
Newton, M. D.
Nickel, E. H.
Nicol, M.
Nitkiewicz, A.
Nord, G. L., Jr.
Ohashi, Y.
O’Keeffe, M.
Olsen, S. N.
O’Neill, H.St.C.
Orr, B.
Papike, J. J.
Peacock, D. R.
Peck, J.
Perkins, D., III
Pertlik, F.
Petersen, E. A.
Plumele, G.
Pluth, J.
Post, J. E.
Presnall, D. C.
Prewitt, C. T.
Reeder, R.
Reynolds, R. C., Jr.
Ribbe, P. H.
Rice, J. M.
Rigden, S.
Rivers, M.
Roberson, H. E.
Robinson, P. D.
Roddick, J. C.
Roeder, P.
Rogers, P.S.Z.
Romberger, S. B.
Rosenberg, P. E.
Ross, C. R., II
Rossman, G. R.
Rouse, R. C.
Sack, R. O.
Schiffman, P.
Schiffries, C. M.
Schneiderman, J. S.
Schreyer, W. F.
Sclar, C. B.
Shearer, C. K.
Shelton, K. L.
Sherman, D. M.
Simmons, E. C.
Skippen, G. B.
Smith, J. J.
Smyth, J. R.
Snyder, R. L.
Spee, J. A.
Spera, F. J.
Spinnler, G. E.
Stebbins, J.
Sternele, I. M.
Stewart, D. B.
Stoffregen, R.
Stormer, J. C., Jr.
LIST OF FORMER OFFICERS, MEDAL RECIPIENTS, AND MEETING PLACES

Honorary Presidents

Edward S. Dana 1925–1935
Charles Palache 1949–1954
Edward H. Kraus 1955–1973

Presidents


Vice-Presidents


Secretaries
1920–1922 Herbert P. Whitlock
1923–1933 Frank R. Van Horn
1933–1934 Albert B. Peck
1934–1944 Paul F. Kerr
1944–1959 C. S. Hurlbut, Jr.
1959–1966 George Switzer
1966–1969 Ralph J. Holmes
1970–1971 Arnulf Muan
1972–1975 Joan R. Clark
1976–1979 Larry W. Finger
1980–1983 M. Charles Gilbert
1984–1987 Maryellen Cameron
1988–  Maryellen Cameron

Treasurers
1920–1923 Albert B. Peck
1924–1929 Alexander H. Phillips
1920–1930 Albert B. Peck
1930–1940 Waldemar T. Schaller
1941–1958 Earl Ingerson
1938–1968 Marjorie Hooker
1973–1974 Philip M. Bethke
1971–1984 Odette B. James
1989–  James A. Whitney

Editors
1920–1921 Edgar T. Wherry
1922–1956 Walter F. Hunt
1957–1961 Lewis S. Ramsdell
1961–1966 E. Wm. Heinrich
1966–1972 William T. Holser
1972–1975 F. Donald Bloss
1976–1980 Brian Mason
1981–1985 Michael J. Holdaway
1986–1989 James L. Munoz
1990– Steven R. Bohlen
1990– Donald R. Peacor

Councillors
1921 Frank R. Van Horn, Frederick E. Wright, Alexander H. Phillips, Austin F. Rogers.
1922 Frederick E. Wright, Alexander H. Phillips, Austin F. Rogers, Thomas L. Watson.
1923 Alexander H. Phillips, Austin F. Rogers, Thomas L. Watson, Esper S. Larsen.
1924 Austin F. Rogers, Thomas L. Watson, Esper S. Larsen, Arthur L. Parsons.
1925 Thomas L. Watson, Esper S. Larsen, Arthur L. Parsons, William F. Foshag.
1930 Alexander N. Winchell, Ellis Thomson, Clarence S. Ross, Paul F. Kerr.
1931 Ellis Thomson, Clarence S. Ross, Paul F. Kerr, William S. Bayley.
1964 Francis J. Turner, Hatten S. Yoder, Jr., W. F. Bradley, Howard T. Evans, Jr., Harold L. James, Joseph V. Smith.
Recipients of the Roebling Medal

1937 Charles Palache
1938 Waldemar T. Schaller
1940 Leonard James Spencer
1941 Esper S. Larsen, Jr.
1945 Edward H. Kraus
1946 Clarence S. Ross
1947 Paul Niggli
1948 William Lawrence Bragg
1949 Herbert E. Merwin
1950 Norman L. Bowen
1952 Frederick E. Wright
1953 William F. Foshag
1954 Cecil Edgar Tilley
1955 Alexander N. Winchell
1956 Arthur F. Buddington
1957 Walter F. Hunt
1958 Martin J. Buerger
1959 Felix Machatchki
1960 Tom F. W. Barth
1961 Paul Ramdohr
1962 John W. Gruner
1963 John Frank Schairer
1964 Clifford Frondel
1965 Adolf Pabst
1966 Max H. Hey
1967 Linus Pauling
1968 Tei-ichi Ito
1969 Fritz Laves
1970 George W. Brindley
1971 J.D.H. Donnay
1972 Elburt F. Osborn
1973 George Tunell
1974 Ralph E. Grim
1975 Michael Fleischer
1976 O. Frank Tuttle
1977 Carl W. Correns
1978 Raimond Castaing
1979 James B. Thompson
1980 W. H. Taylor
1981 Dmitrii Sergeevich Korzhinskii
1982 Robert M. Garrels
1983 Joseph V. Smith
1984 Hans P. Eustiger
1985 Paul B. Barton, Jr.
1986 Francis J. Turner
1987 Edwin Roedder
1988 Gerald V. Gibbs
1989 Julian R. Goldsmith
1990 Helen D. Megaw

Recipient of the Mineralogical Society of America Award

1951 Orville F. Tuttle
1952 Frederick H. Stewart
1953 L. H. Ahrens
1954 Hatten S. Yoder, Jr.
1955 Julian R. Goldsmith
1956 George C. Kennedy
1957 Rustum Roy
1958 Charles E. Weaver
1959 Harry F. W. Taylor
1960 Donald L. Graf
1961 Joseph V. Smith
1962 Douglas S. Coombs
1963 Nobuo Morimoto
1964 William S. Fyfe
1965 Peter J. Wyllie
1966 David B. Stewart
1967 Alfred E. Ringwood
1968 Barclay Kamb
1969 W. Gary Ernst
1970 Bernard W. Evans
1971 Robert A. Berner
1972 Arthur L. Boettcher
1973 Paul Brian Moore
1974 James J. Papike
1975 Roger G. Burns
1976 Friedrich A. Seifert
1977 J. G. Liou
1978 J. Stephen Huebner
1979 Ho-Kwang Mao
1980 Susan Werner Kieffer
1981 Alexandra Navrotsky
1982 Robert M. Hazen
1983 David R. Veblen
1984 Bernard J. Wood
1985 John M. Ferry
1986 Antonio C. Lasaga
1987 Donald J. DePaolo
1988 Raymond Jeanloz
1989 Michael A. Carpenter
1990 Russell J. Hemley
Recipient of the Distinguished Public Service Medal
1990 Malcolm Ross

Annual Meeting Places

1920 Chicago, Illinois
1921 Amherst, Massachusetts
1922 Ann Arbor, Michigan
1923 Washington, D.C.
1924 Ithaca, New York
1925 New Haven, Connecticut
1926 Madison, Wisconsin
1927 Cleveland, Ohio
1928 New York, New York
1929 Washington, D.C.
1930 Toronto, Canada
1931 Tulsa, Oklahoma
1932 Cambridge, Massachusetts
1933 Chicago, Illinois
1934 Rochester, New York
1935 New York, New York
1936 Cincinnati, Ohio
1937 Washington, D.C.
1938 New York, New York
1939 Minneapolis, Minnesota
1940 Austin, Texas
1941 Boston, Massachusetts
1942 No meeting held
1943 No meeting held
1944 No meeting held
1945 Pittsburgh, Pennsylvania
1946 Chicago, Illinois
1947 Ottawa, Canada
1948 New York, New York
1949 El Paso, Texas
1950 Washington, D.C.
1951 Detroit, Michigan
1952 Boston, Massachusetts
1953 Toronto, Canada
1954 Los Angeles, California
1955 New Orleans, Louisiana
1956 Minneapolis, Minnesota
1957 Atlantic City, New Jersey
1958 St. Louis, Missouri
1959 Pittsburgh, Pennsylvania
1960 Denver, Colorado
1961 Cincinnati, Ohio
1962 Houston, Texas
1963 New York, New York
1964 Miami Beach, Florida
1965 Kansas City, Missouri
1966 San Francisco, California
1967 New Orleans, Louisiana
1968 Mexico City, Mexico
1969 Atlantic City, New Jersey
1970 Milwaukee, Wisconsin
1971 Washington, D.C.
1972 Minneapolis, Minnesota
1973 Dallas, Texas
1974 Miami Beach, Florida
1975 Salt Lake City, Utah
1976 Denver, Colorado
1977 Seattle, Washington
1978 Toronto, Canada
1979 San Diego, California
1980 Atlanta, Georgia
1981 Cincinnati, Ohio
1982 New Orleans, Louisiana
1983 Indianapolis, Indiana
1984 Reno, Nevada
1985 Orlando, Florida
1986 San Antonio, Texas
1987 Phoenix, Arizona
1988 Denver, Colorado
1989 St. Louis, Missouri
1990 Dallas, Texas

LIST OF 1991 OFFICERS AND COMMITTEES
Mineralogical Society of America
1130 Seventeenth Street NW, Suite 330, Washington, DC 20036

Membership in the Mineralogical Society of America is open to persons interested in the fields of mineralogy, petrology, crystallography, and allied sciences. Membership application forms may be obtained from the address given above. Annual dues are $40.00 ($20.00 for students), which includes a subscription to American Mineralogist. Members may also subscribe to Mineralogical Abstracts at the reduced rate of $25.00, Journal of Metamorphic Geology at the reduced rate of $102.50, Journal of Petrology at the reduced rate of $137.00, and Physics and Chemistry of Minerals at the reduced rate of $250.00.

OFFICERS SERVING IN 1991

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Malcolm Ross, U.S. Geological Survey, MS 959, National Center, Reston, Virginia

Past President
Peter Robinson, University of Massachusetts, Amherst, Massachusetts

Vice-President
Michael Holdaway, Southern Methodist University, Dallas, Texas

Treasurer
James A. Whitney, University of Georgia, Athens, Georgia

Secretary
Maryellen Cameron, Miami University, Oxford, Ohio

Councillors
1990-1992
Rosemary V. Buden, EG&G Idaho, Inc., Idaho Falls, Idaho

1990-1992
Maria L. Crawford, Bryn Mawr College, Bryn Mawr, Pennsylvania

1989-1991
Frank C. Hawthorne, University of Manitoba, Winnipeg, Manitoba, Canada

1991-1993
R. James Kirkpatrick, University of Illinois, Urbana, Illinois

1991-1993
Jo Laird, University of New Hampshire, Durham, New Hampshire

1989-1991
David R. Veblen, Johns Hopkins University, Baltimore, Maryland

APPOINTIVE POSTS FOR 1991

Roebbing Medal Committee
R. James Kirkpatrick, Chair
David A. Hewitt
John B. Lyons
Charles T. Prewitt
Douglas Rumble
Jan Tulis

MSA Award Committee
Jo Laird, Chair
John L. Rosenfeld
Georges Calas
Antonio C. Lasaga
Bruce D. Marsh
John W. Valley

Research Grant Committee (Even-numbered years, crystallography; odd-numbered years, min/pet; 1991 Committee will recommend a recipient for the 1992 award in Crystallography)
Frank C. Hawthorne, Chair
M. Darby Dyar
Anne M. Hofmeister
John M. Hughes
Ronald C. Peterson
Howard T. Evans

Public Service Award Committee
David B. Stewart (1991), Chair
F. D. Bloss (1990–1992)

MSA Lecture Program Committee
G. R. Rossman (1989–1991), Chair

Committee on External Medals and Awards
A. C. Lasaga (1989–1991), Chair
A. Montana (1990–1992)

Nominating Committee for Fellows
R. A. Wiebe (1990–1992), Chair

MSA Delegates to the Joint Technical Program Committee of the GSA
M. S. Ghiorso, Representative (1988–1991), Chair
D. L. Bish, Conference (1990–1992)

MSA Delegate to the AGU Program Committee

Nominating Committee for Officers
M. Charles Gilbert, Chair
Edward D. Ghent
Timothy L. Grove

Stephan J. Guggenheim
Charles V. Guidottti

Tellers Committee
A. G. Wylie (1990–1991), Chair

Committee on Committees
Michael Holdaway, Chair
M. Cameron, Secretary
Gordon L. Nord, Jr.
Alexandra Navrotsky
Russell J. Hemley
Philip E. Brown

Committee on Management
G. L. Nord (term ends in 1992), Chair
M. C. Gilbert (term ends in 1991)
George W. Fisher (term ends in 1993)
M. Cameron, Secretary
J. A. Whitney, Treasurer
B. S. Hemingway, Chair, Financial Advisory Committee

Financial Advisory Committee (6-year terms)
B. S. Hemingway (1987–1992), Chair
G. L. Nord, Chair, Committee on Management
J. A. Whitney, Treasurer
J. H. Stout
D. A. Hewitt

Publications Committee
M. S. T. Bukowski (1989–1991), Chair

Committee on Short Courses
D. M. Sherman (1989–1991), Chair
P. H. Ribbe (Editor, Reviews in Mineralogy)

Archivist
H. Belkin

Memorialist
B. Mason (appointed 1985)

Mineral Museums Advisory Council
P. C. Keller (1983)

American Mineralogist
Editor: S. R. Bohlen
Editor: D. R. Peacor
Managing Editor: V. Lawrence

Board of Associate Editors
New Mineral Names (1987–)
J. L. Jambor
1987–1991
D. T. Griffen
1988–1991
D. L. Bish
F. F. Foit, Jr.
1989–1992
W. D. Carlson
T. D. Hoisch
J. Longhi
G. A. Waychunas
1990–1993
C. R. Bacon
J. M. Hughes
T. C. McCormick
R. C. Reynolds, Jr.
D. J. Weidner
R. F. Wendlandt
1991–1994
Ross Angel
John B. Brady
Philip E. Brown
Mark S. Ghiorso
Jonathan F. Stebbins

Reviews in Mineralogy
Editor: P. H. Ribbe

Mineralogical Abstracts
Principal Editor: R. A. Howie
Organizer for American Abstracts: K. A. Riggs

Representatives to Other Organizations
American Crystallographic Association: B. J. Wuensch
(appointed 1981)

American Geological Institute: M. C. Gilbert (1991)
Friends of Mineralogy: E. E. Foord (appointed 1987)
International Mineralogical Association: C. W. Burnham (appointed 1989)
AGU Mineral Physics Committee: R. M. Hazen ("pro
tem"—appointed 1988)

MSA Representatives on IMA Commissions
Mineral Data & Classification: P. B. Moore (1977)
Ore Microscopy: J. R. Craig (1977)
History & Teaching: C. Klein (1985)
Applied Mineralogy: M. Ross (1986)

MSA Representatives on IMA Working Groups
Electron Microscopy Applied to Mineralogy: P. R. Buseck
Abstracts: K. A. Riggs
Cosmic Mineralogy: R. Hewins (1988)