Proceedings of the Fortieth Annual Meeting
Of the Mineralogical Society of America
At Pittsburgh, Pennsylvania

C. S. Hurlbut, Jr., Secretary

The fortieth meeting of the Society was held on November 2-4, 1959 at the Penn-
Sheraton Hotel, Pittsburgh, Pennsylvania. The scientific sessions were integrated with
those of the Geological Society of America and other affiliated Societies. A total of thirty-
five scientific sessions were held; of these two were devoted to mineralogy, two to petrology,
one to crystallography and five to geochemistry, at which 107 papers were presented.

The annual luncheon of the Society on November 3 was attended by 234 fellows,
members and guests. This exceeded by two the number attending the luncheon in Atlantic
City in 1957 and was thus the largest number ever to attend a Society luncheon. Following
the luncheon the seventeenth presentation of the Roebling Medal was made to Felix
Machatschki and the ninth presentation of the Mineralogical Society of America Award
was made to Harry F. W. Taylor.

On the afternoon of November 3 the Society was addressed by the Retiring President,
Ralph E. Grim, on the subject, Some Applications of Clay Mineralogy. The annual business
meeting was held at 4:30 on the afternoon of November 3, at which brief reports were
given by the Secretary, Treasurer and Editor. It was voted in response to a motion made by
Professor C. W. Wolfe—That the Society spread upon its records an expression of appreci-
ation of the services rendered the Society by Professor C. S. Hurlbut, Jr. during his fifteen
years as Secretary.

Council Action

The 1959 Council of the Society met on the afternoon and evening of November 1 for
a total of six hours and discussed 23 items of business. Although there were the usual num-
ber of items, the time needed to consider them was less than in many years. This was
because of the excellence of the reports submitted by the several committees that had been
at work throughout the year.

At its first meeting in November 1958, the 1959 Council appointed a Policy Com-
mittee to consider the future financial needs of the Society and to make recommendations
to the Council at its Pittsburgh meeting. Council action on certain aspects of this Com-
mittee report affects all members and fellows of the Society and is thus given below.

Publication costs of the American Mineralogist as well as other Society expenses have
been rising continuously during the past decade while dues have remained constant. At
present neither the dues of Members and Fellows nor the subscription rate of the American
Mineralogist is sufficient to meet the publication costs of the journal. Acting on recom-
mendations of the Policy Committee the Council voted the following:

Subscription to the American Mineralogist. That the subscription rate of the American
Mineralogist be $10.00 a year beginning in 1961.

Dues of Members and Fellows. That steps be taken to raise the dues of members and
fellows to $8.00 a year.

Student Members. That the dues of members who are students be set at one-half the
dues of other members.

Mineralogical Abstracts to Members and Fellows. That, if dues are raised to $8.00 a year,
Mineralogical Abstracts be made available to members and fellows for $2.00 a year addi-
tional. Note. Students paying the reduced rate will pay $3.00 for Mineralogical Abstracts.

Change in the By-Laws. In order to effect the increase of dues of members and fellows,
the Council recommends the following changes in Article II, Sections 1 and 2 of the by-laws:
Section 1. The annual dues for members shall be four dollars ($4) payable in January.

Section 2. No person shall be accepted as a fellow of the Mineralogical Society of America unless he pays dues for the year within three months after notification of his election. The annual dues for fellows shall be five dollars ($5) payable in January.

To

Section 1. The annual dues for members and fellows shall be eight dollars ($8) payable in January. Members who are students shall pay one-half the dues of other members.

Section 2. No person shall be accepted as a fellow of the Mineralogical Society of America unless he pays dues for the year within three months after notification of his election.

The Council also recommends the following change in Article II, Section 3 of the by-laws.

From

Section 3. Fellows who have reached the age of seventy years, and who have paid dues for at least thirty (30) years, shall be exempt from further payment of dues.

To

Section 3. Fellows and members who have reached the age of seventy years, and who have paid dues for at least thirty (30) years, shall be exempt from further payment of dues.

The Council requests that the general membership of the Society be asked to vote on the above recommended changes in Article II of the by-laws.

International Mineralogical Association. A report was given the Council by Professor C. Frondel, delegate to the International Mineralogical Association Congress held in Zurich, Switzerland August 28–September 4, 1959. A summary of this report was printed in the American Mineralogist 44, 1319 (1959). Another meeting of the International Mineralogical Association is to be held in Copenhagen, Denmark in 1960 during the meetings of the XXI International Geological Congress.

Honorary Fellows. The Council voted that Felix Machatschki, the 1959 recipient of the Roebling Medal, be made an Honorary Fellow.

Action by the 1960 Council

The 1960 Council met on November 4, 1959 for three hours and discussed fourteen items of business.

International Mineralogical Association. The Council voted that $150.00 be paid during 1960 as the Society’s dues to the International Mineralogical Association.

Advertising in the American Mineralogist. It was agreed by the Council that it would be desirable to increase the amount of advertising carried in American Mineralogist in order to increase the Society’s revenue. The Council voted that Martin L. Ehrmann be appointed to carry out this project.

Editor of the American Mineralogist. The Council voted that Lewis S. Ramsdell be appointed Editor of the American Mineralogist for the year 1960.

Articles for the Amateur. The 1958 Council appointed Richard H. Jahns to arrange for occasional articles in the American Mineralogist of interest to non-professional mineralogists. The 1960 Council voted that Dr. Jahns be authorized to continue with this activity.
Endowment Committee. The Council voted that this committee be reactivated.

Commercial Audit of the Society Books. Upon recommendation of the 1959 Auditing Committee, the Council voted that the Financial Advisory Committee study the possibility of having a commercial firm audit the Society books and make specific recommendations to the Council in November 1960.

Committee Appointments. President Murdoch made the following committee appointments, which were approved by the Council.

### 1960 Committees of the Mineralogical Society of America

<table>
<thead>
<tr>
<th>Nominating Committee for Fellows</th>
<th>Nominating Committee for Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. Roy, Chairman 1960–63</td>
<td>V. B. Meen, Chairman</td>
</tr>
<tr>
<td>C. O. Hutton 1958–60</td>
<td>B. Mason</td>
</tr>
<tr>
<td>A. L. Anderson 1958–60</td>
<td>C. L. Christ</td>
</tr>
<tr>
<td>J. L. Kulp 1959–61</td>
<td>J. L. Gibson</td>
</tr>
<tr>
<td>E. N. Cameron 1960–63</td>
<td>L. Staples</td>
</tr>
<tr>
<td>J. D. H. Donnay 1960–63</td>
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<thead>
<tr>
<th>Roebling Medal Committee</th>
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<tr>
<td>J. R. Goldsmith, Chairman</td>
<td></td>
</tr>
<tr>
<td>A. F. Buddington</td>
<td></td>
</tr>
<tr>
<td>E. Ingerson</td>
<td></td>
</tr>
<tr>
<td>T. S. Lovering</td>
<td></td>
</tr>
<tr>
<td>G. Tunell</td>
<td></td>
</tr>
<tr>
<td>H. Strunz</td>
<td></td>
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<thead>
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<th>Program Committee</th>
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<tbody>
<tr>
<td>B. Mason</td>
<td></td>
</tr>
<tr>
<td>H. Winchell</td>
<td></td>
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<table>
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<tr>
<th>Nomenclature Committee</th>
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<tr>
<td>M. Fleischer, Chairman 1958–60</td>
<td></td>
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<tr>
<td>C. S. Hurlbut 1958–60</td>
<td></td>
</tr>
<tr>
<td>J. V. Smith 1959–61</td>
<td></td>
</tr>
<tr>
<td>G. Tunnell 1959–61</td>
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</tr>
<tr>
<td>A. Pabst 1960–62</td>
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<tr>
<td>G. Faust 1960–62</td>
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<th>MSA Award Committee</th>
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<tbody>
<tr>
<td>H. Winchell, Chairman 1959–61</td>
<td></td>
</tr>
<tr>
<td>H. F. W. Taylor</td>
<td></td>
</tr>
<tr>
<td>J. Verhoogen</td>
<td></td>
</tr>
<tr>
<td>W. D. Keller</td>
<td></td>
</tr>
<tr>
<td>E. W. Roedder 1959–61</td>
<td></td>
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<tr>
<td>J. B. Thompson</td>
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<tr>
<td>E. P. Henderson, Chairman 1959–61</td>
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<tr>
<td>S. Goldich 1959–60</td>
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<td>A. Montgomery 1960–63</td>
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<td>G. Kullerud, Chairman</td>
<td></td>
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<tr>
<td>A. Van Valkenburg</td>
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<tr>
<td>M. L. Lindberg</td>
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<th>Board of Associate Editors</th>
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<td>D. J. Fisher 1958–60</td>
<td></td>
</tr>
<tr>
<td>G. T. Faust 1958–60</td>
<td></td>
</tr>
<tr>
<td>G. W. Brindley 1959–61</td>
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<tr>
<td>A. Pabst 1959–61</td>
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<tr>
<td>E. W. Roedder 1960–62</td>
<td></td>
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<tr>
<td>R. H. Jahns 1960–62</td>
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<table>
<thead>
<tr>
<th>Mineralogical Abstracts</th>
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<tbody>
<tr>
<td>L. B. Berry, Chairman 1958–60</td>
<td></td>
</tr>
<tr>
<td>A. Pabst</td>
<td></td>
</tr>
<tr>
<td>M. E. Mrose</td>
<td></td>
</tr>
<tr>
<td>H. Winchell</td>
<td></td>
</tr>
<tr>
<td>K. M. Servos</td>
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<table>
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<tr>
<th>Advertising</th>
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</thead>
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<tr>
<td>M. L. Ehrmann</td>
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</table>

<table>
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<tr>
<th>Endowment Committee</th>
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</thead>
<tbody>
<tr>
<td>C. B. Slawson</td>
<td></td>
</tr>
<tr>
<td>A. O. Woodford</td>
<td></td>
</tr>
</tbody>
</table>
REPORT OF THE SECRETARY

To the Council of the Mineralogical Society of America

Election of Officers and Fellows

Eight hundred and forty-four ballots were cast in the election of officers, 188 by Fellows and 656 by Members. The officers elected to serve in 1960 are:

President: Joseph Murdoch, University of California at Los Angeles, California.


Horace Winchell, Yale University, New Haven, Connecticut

According to the provisions of the Constitution, the following have been elected to fellowship:

Robert Marshall Douglass, Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

Gerald Manfred Friedman, Pan American Petroleum Company, Tulsa, Oklahoma.

Erwin Emil Hellner, University of Chicago, Chicago, Illinois.

Vernon James Hurst, Department of Mines, Atlanta, Georgia.

Edward Charles Jonas, The University of Texas, Austin, Texas.

Solomon Kaiman, Mines Branch, Ottawa, Canada.

Donald Richard Lewis, Shell Development Company, Houston, Texas.

Katharine Selden Kniskern Mather, U. S. Army Engineer Waterways Experiment Station, Jackson, Mississippi.
MEMBERSHIP STATISTICS

November 1, 1959

<table>
<thead>
<tr>
<th></th>
<th>1958</th>
<th>1959</th>
<th>Gain</th>
<th>Loss</th>
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<tr>
<td>Correspondents</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Honorary Fellows</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Fellows</td>
<td>360</td>
<td>376</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Members</td>
<td>1,185</td>
<td>1,501</td>
<td>416</td>
<td>100</td>
</tr>
<tr>
<td>Subscribers</td>
<td>1,195</td>
<td>1,339</td>
<td>227</td>
<td>83</td>
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</table>

The above figures show a net gain of 16 fellows, 316 members and 144 subscribers. Considering the four groups together, there is a gain of 476 giving a total of 3219.

The accompanying Membership Chart shows graphically the growth of the Society. With the exception of the war years 1940-'42 each year has seen an increase over the preceding year in members, fellows and subscribers to the American Mineralogist with 1959 showing the greatest increase in a single year.


Respectfully submitted,
C. S. Hurlbut, Jr., Secretary

REPORT OF THE TREASURER FOR 1959

To the Council of the Mineralogical Society of America:
Your treasurer submits herewith her report for the fiscal year beginning August 1, 1958, and ending July 31, 1959.

SUMMARY STATEMENT

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Cash on hand, August 1, 1958</td>
<td>$ 1,599.14</td>
</tr>
<tr>
<td>Total receipts</td>
<td>$ 40,855.23</td>
</tr>
<tr>
<td>Total disbursements</td>
<td>$ 35,450.46</td>
</tr>
<tr>
<td>Net income (Receipts less disbursements)</td>
<td>$ 5,404.77</td>
</tr>
<tr>
<td>Total income</td>
<td>$ 7,003.91</td>
</tr>
</tbody>
</table>
MEMBERSHIP CHART
MINERALOGICAL SOCIETY
OF
AMERICA

TOTAL: MEMBERS, FELLOWS, SUBSCRIBERS

MEMBERS
SUBSCRIBERS
FELLOWS

1920 '22 '24 '26 '28 '30 '32 '34 '36 '38 '40 '42 '44 '46 '48 '50 '52 '54 '56 '58 '60
Cash on hand, July 31, 1959

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Riggs National Bank</td>
<td>$1,502.67</td>
</tr>
<tr>
<td>Merrill Lynch, Pierce, Fenner and Smith</td>
<td>$428.48 $1,931.15</td>
</tr>
</tbody>
</table>

Transfer to capital: $5,072.76

Total: $7,003.91

Assets, July 31, 1959

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$1,931.15</td>
</tr>
<tr>
<td>Capital (Endowment Fund securities and cash)</td>
<td>148,902.50</td>
</tr>
</tbody>
</table>

Total: $150,833.65

Financially, the society has completed a year marked by progress in several respects. The figures on income, expenditures, and balances are shown in the tables. The explanatory comments that follow are to provide background information and point out some percentage relationships and trends.

**Income and Expense**

The effective income of the society this year can be grouped in three categories and was obtained from these sources directly or from activity concerned with them.

- Dues: 18.2%
- Publication program: 56.2%
- Endowment fund: 25.6%

Dues furnished 18.2 per cent of income, and while no comparison can be made with previous years when income from dues and subscriptions was not reported separately, it is considerably more than that calculated on the basis of membership figures. The receipt of $1100 more than a normally expectable $6300 is the direct result of a net gain of 275 members between January and July 1959. Income from various sources in connection with publications amounts to 56.2 per cent. The lower income from sale of reprints, compared to the previous year, is due to the difference in time of invoicing and receipt of payments in relation to fiscal year closing. The income from the sale of indexes is more than twice that received last year. Income recorded under the endowment fund made up the remaining 25.6 per cent and will be discussed separately.

Expenditures can be grouped as follows:

- Officers' honoraria and office expense: 12.1%
- Publication program: 85.3%
- Support of other organizations and miscellaneous: 2.6%

The largest portion of the publication expense is naturally that of printing and distributing the *American Mineralogist*, amounting this year to $23,341.19 or about 77 per cent. As a result of the increased cost of our journal, the grant of $8000 from the Geological Society of America toward its publication now defrays one-third rather than one-half of the cost. The expenditure for postage shows a large increase over last year (44 per cent), resulting from the increases in postal rates, sales of indexes, and membership.

**Endowment Fund**

Colonel Roebling’s original gift of $45,000 in 1926 formed the nucleus of the endowment fund which has since grown by continual investment of money from the society’s operating fund. In November 1958 the Fifty-Plus Committee was initiated privately for the explicit
purpose of increasing the endowment fund by asking a minimum pledge of $50.00 from individual members, to be contributed over a five-year period. At the close of the fiscal year, $11,600 had been pledged and $3719 of this had been received. Voluntary contributions during the same period supplied an additional $240.50.

The total book value of all securities in the fund at the end of the fiscal year was $118,956.68. Of this amount, 12.9 per cent was in bonds, 28.7 per cent in preferred stocks, and 58.4 per cent in common stocks. The approximate market value, computed on July 1, 1959, was $147,944.00. The higher figure of the market value is accounted for entirely by the common stocks, and the good position of the society in this respect can be attributed to the recommendations of the Finance Committee in this direction and the policy of the preceding treasurer to increase the holdings in common stocks. Dividends and interest accruing from the investments amounted to $6518.42 and accounted for 16 per cent of total income. The yield for the year at book value was 5.48 per cent; at market value, 4.41 per cent. From securities now held an income of $6850 is estimated for 1959–1960.

To simplify the details of managing the portfolio which now numbers thirty-two securities, a custodian account was opened with Merrill Lynch, Pierce, Fenner, and Smith, Inc. of September 5, 1958.

Mineralogical Abstracts

Beginning with the issue of volume 14, number 1, March 1959, our society assumed joint responsibility with the Mineralogical Society of Great Britain and Ireland for the publication of Mineralogical Abstracts separately from the Mineralogical Magazine. As shown in the statement, the society has made an advance of funds toward initial publication expense. It remains to be seen whether the support of Mineralogical Abstracts will be a recurrent annual expense or whether the venture will become self-supporting in the near future. During the year, the treasurer also acted as agent for the collection and transfer of subscription payments from our members.

I am most fortunate in having the complete cooperation of our Finance Committee and Merrill Lynch, custodian of our securities, and it is a pleasure for me to record here my thanks to Edward P. Henderson, Samuel S. Goldich, and Arthur Montgomery of the committee, and to Stanly Carr of Merrill Lynch, for their competent advice and assistance at all times.

Receipts

Dues

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<tr>
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<tr>
<td>Fellows</td>
<td>$1,485.40</td>
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<td>Members</td>
<td>5,929.91 $ 7,415.31</td>
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Publications

<table>
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<th>Category</th>
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<tr>
<td>Geological Society of America grant</td>
<td>8,000.00</td>
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<tr>
<td>Subscriptions to American Mineralogist</td>
<td>7,609.29</td>
</tr>
<tr>
<td>Sale of reprints</td>
<td>2,698.97</td>
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<tr>
<td>Sale of back numbers</td>
<td>2,776.21</td>
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<tr>
<td>Sale of Index, vols. 31-40</td>
<td>707.40</td>
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<tr>
<td>vols. 21–30</td>
<td>261.00</td>
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<tr>
<td>vols. 1–20</td>
<td>138.60</td>
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<td>Advertising</td>
<td>746.06</td>
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<tr>
<td>Miscellaneous</td>
<td>20.02 22,957.55</td>
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</table>
Endowment Fund

Dividends and interest .................................................. 6,518.42
Fifty-Plus Committee .................................................. 3,719.00
Contributions .......................................................... 240.50  10,477.92
Exchange credits and collections ...................................... 4.45  4.45

Total receipts .......................................................... $40,855.23

**Disbursements**

**Honoraria**

Secretary (August 1, 1957–July 31, 1958) ................................ $ 250.00
Treasurer (August 1, 1957–November 15, 1958) ...................... 322.91
Editor (July 1, 1958–March 31, 1959) .................................. 562.50  1,135.41

**Office Expense**

Clerical assistance (April 1958–July 1959) ......................... 1,434.20
Printing and stationery ................................................. 979.80
Supplies ............................................................................ 70.99
Certificates of Incorporation (3) ....................................... 10.50
Officers' travel .................................................................. 198.26
Committee expense ........................................................ 7.91
Telephone and telegrams .................................................. 5.05
Postage .............................................................................. 438.64  3,146.25

**Publications**

American Mineralogist (July 1958–June 1959) ....................... 23,341.19
Reprints ............................................................................. 3,358.38
Program and abstracts ...................................................... 400.00
Microtext of out-of-print issues ........................................ 590.86
Purchase of out-of-print issues .......................................... 88.00
Postage and express ......................................................... 358.67
National Science Foundation refund on index sales (May 1958–April 1959) .................................................. 693.90
Mineralogical Abstracts (publication advance) ...................... 1,405.38  30,236.38

**International Mineralogical Association** ......................... 120.00
**American Geological Institute** ....................................... 594.00  714.00
**Roebling Medal** .......................................................... 150.63
**MSA Award certificate** ................................................. 7.50  158.13
**Refunds** ...................................................................... 42.29
**Checks returned** .......................................................... 18.00  60.29

Total disbursements ....................................................... $35,450.46

**Endowment Fund**

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<tr>
<th>Amount</th>
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<th>Income3</th>
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<td>6M</td>
<td>Atlantic Coast Line, 4½</td>
<td>$ 5,257.50</td>
<td>$ 6,000</td>
<td>$ 270.00</td>
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<td>5M</td>
<td>New York Central, 5</td>
<td>4,300.00</td>
<td>3,600</td>
<td>250.00</td>
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<td>5M</td>
<td>Southern Railway, 5</td>
<td>5,743.75</td>
<td>4,800</td>
<td>250.00</td>
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| Total | $15,301.25 | $14,400 | $770.00 |
### Preferred stocks

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<th>Shares</th>
<th>Purchase</th>
<th>Market</th>
<th>Dividend</th>
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<td>Union Pacific, 4</td>
<td>500</td>
<td>4,570.25</td>
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<td>Southern California Edison, 4.88</td>
<td>200</td>
<td>5,250.00</td>
<td>5,000</td>
<td>244.00</td>
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<td>Fairbanks Whitney</td>
<td>150</td>
<td>4,487.50</td>
<td>3,450</td>
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<td>Jones and Laughlin, A5</td>
<td>100</td>
<td>4,987.50</td>
<td>5,940</td>
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### Common stocks

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**Total** | **$ 69,471.48** | **$100,179** | **$4,114.32**

**Cash balance, Endowment Fund account, Riggs National Bank** | **$118,956.68** | **$147,944** | **$6,518.42**

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1. Approximate market value, July 1, 1959.
2. Fiscal year ending July 31, 1959, except where noted.
5. Income for one quarter only. Purchased in March 1959.

Respectfully submitted,

**Marjorie Hooker, Treasurer**
REPORT OF THE AUDITING COMMITTEE

To the President of the Mineralogical Society of America:

The Auditing Committee has examined and verified the accounts of the Treasurer of the Mineralogical Society of America for the fiscal year beginning August 1, 1958, and ending July 31, 1959. The securities listed in the Treasurer's report, with all future coupons on the coupon bonds attached, are in the safety deposit box at the 17th and G Street Branch of the Riggs National Bank in Washington, D. C.

Respectfully submitted,

G. Kullerud
E. W. Roedder
M. E. Morse, Chairman

REPORT OF THE EDITOR FOR 1959

The 1959 volume of The American Mineralogist contained 1344 + vii pages. As shown in the summary, 1237 of these were devoted to articles. This figure represents an increase of nearly 200 pages over Volume 43. There were 75 major and 67 shorter articles, giving a total of 142. The authors represented 26 U. S. educational institutions, 10 government laboratories, 11 industrial laboratories, 15 foreign educational institutions and 8 foreign laboratories, giving a total of 70 institutions. This compares with 37 in 1957 and 54 in 1958. It is evident that we have an international journal.

Seven new minerals were described in detail for the first time in Volume 44. There were 7 book reviews. The very important section on New Mineral Names, so ably conducted by Dr. M. Fleischer, contained 70 entries. The value of these abstracts is greatly enhanced by his critical comments.

As in former years, the Geological Society of America has continued its liberal financial support toward the cost of printing the journal, and we are grateful for this assistance.

With approximately 200 more pages devoted to articles in Volume 44, the backlog of manuscripts has been somewhat reduced. At present, most of the shorter articles appearing under Notes are printed within four months of receipt. The waiting period for major articles has varied from seven to ten months, with the majority appearing within eight months. We hope to be able to get this period down to six months.

The associate editors have been called upon to read many manuscripts, and to make recommendations to the editor and to the authors. Our thanks are extended to these individuals, Robert Garrels, Joseph Murdoch, D. Jerome Fisher, George T. Faust, George W. Brindley and Adolf Pabst. The editor has also called on others to help in evaluating manuscripts, including C. L. Christ, R. M. Denning, H. T. Evans, E. Ingerson, P. F. Kerr, B. Mason, R. S. Mitchell, J. V. Smith, O. F. Tuttle and H. Winchell.

The editor likewise wishes to express his appreciation for the splendid cooperation he receives from the publisher, The George Banta Company, Inc., and for the excellent appearance of the journal.

A summary of the contents of Vol. 44 is given in the following table.
<table>
<thead>
<tr>
<th>Subjects</th>
<th>Number</th>
<th>Pages</th>
<th>% of Total</th>
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Respectfully submitted,
LEWIS S. RAMSDELL, Editor
LIST OF FORMER OFFICERS AND MEETING PLACES

By recommendation of the Council, a complete list of past officers is printed in the proceedings of the annual meeting of the Society:

HONORARY PRESIDENTS

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

PRESIDENTS

1920 Edward H. Kraus
1921 Charles Palache
1922 Thomas L. Walker
1923 Edgar T. Wherry
1924 Henry S. Washington
1925 Arthur S. Eakle
1926 Waldemar T. Schaller
1927 Austin F. Rogers
1928 Esper S. Larsen
1929 Arthur L. Parsons
1930 Herbert E. Merwin
1931 Alexander H. Phillips
1932 Alexander N. Winchell
1933 Herbert P. Whitlock
1934 John W. Wolff
1935 Clarence S. Ross
1936 William S. Bayley
1937 Norman L. Bowen
1938 Ellis Thomson
1939 Max N. Short
1940 William F. Foshag
1941 Frederick E. Wright
1942 Arthur F. Buddington
1943 John F. Schairer
1944 R. C. Emmons
1945 Kenneth K. Landes
1946 Paul F. Kerr
1947 M. J. Buerger
1948 M. A. Peacock
1949 John W. Gruner
1950 George Tunell
1951 A. Pabst
1952 Michael Fleischer
1953 J. D. H. Donnay
1954 Sterling B. Hendricks
1955 Harry H. Hess
1956 Clifford Frondel
1957 D. Jerome Fisher
1958 George E. Goodspeed
1959 Ralph E. Grim

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1920 Thomas L. Walker
1921 Waldemar T. Schaller
1922 Frederick A. Canfield
1923 George F. Kunz
1924 Washington A. Roebling
1925 Herbert P. Whitlock
1926 George Vaux, Jr.
1927 George L. English
1928 Lazard Cahn
1929 Edward Wigglesworth
1930 John E. Wolff
1931 William F. Foshag
1932 Joseph L. Gillson
1933 Frank B. Guild
1934 William A. Tarr
1935 Ellis Thomson
1936 Harold L. Alling
1937 H. V. Ellsworth
1938 Kenneth K. Landes
1939 Burnham S. Colburn
1940 Ian Campbell
1941 William J. McCaughey
1942 Martin J. Buerger
1943 John W. Gruner
1944 Harry Berman
1945 George Tunell
1946 S. B. Hendricks
1947 Carl Tolman
1948 Adolf Pabst
1949 J. D. H. Donnay
1950 Ralph E. Grim
1951 Michael Fleischer
1952 J. D. H. Donnay
1953 Sterling B. Hendricks
1954 Harry H. Hess
1955 Clifford Frondel
1956 D. Jerome Fisher
1957 George E. Goodspeed
1958 Ralph E. Grim
1959 Joseph Murdoch
SECRETARIES
1920-1922 Herbert P. Whitlock
1923-1933 Frank R. Van Horn
1933-1944 Albert P. Peck
1934-1939 C. S. Hurlbut, Jr.
1939- George Switzer

TREASURERS
1920-1923 Albert B. Peck
1924-1929 Alexander H. Phillips
1929-1930 Albert B. Peck
1930-1940 Waldemar T. Schaller
1941-1958 Earl Ingerson
1958- Marjorie Hooker

EDITORS
1920-1921 Edgar T. Wherry
1922-1956 Walter F. Hunt
1957—Lewis S. Ramsdell

COUNCILORS
1921 Frank R. Van Horn, Fred E. Wright, Alexander H. Phillips, Austin F. Rogers.
1922 Fred 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.
   C. Milton.

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, N. Y.
1929 Washington, D. C.
1930 Toronto, Canada
1931 Tulsa, Oklahoma
1932 Cambridge, Massachusetts
1933 Chicago, Illinois
1934 Rochester, New York
1935 New York, N. Y.
1936 Cincinnati, Ohio
1937 Washington, D. C.
1938 New York, N. Y.
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, N. Y.
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

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 Fred 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 Machatschki

Recipients 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
The meetings of the following societies were held on November 2-4, 1959:

- The Geological Society of America—72nd
- The Paleontological Society—51st
- The Mineralogical Society of America—40th
- Society of Economic Geologists—40th
- The Geochemical Society—4th

The complete program listed titles and abstracts of 323 papers. Of these 145 seemed to be of special interest to members of The Mineralogical Society of America. Authors and titles of these papers are listed below. Since by Council action the abstracts will not be reprinted in The American Mineralogist, references are given to the Bulletin of the Geological Society of America, Vol. 70, Number 12, Part 2, December 1959, pp. 1559–1706, where the abstracts of all the papers of the various societies are reprinted, arranged alphabetically by authors.

**PAPERS OF SPECIAL MINERALOGICAL INTEREST**

- Shigeo Aramaki and Rustum Roy: *Detailed x-ray data on mullites and two new anhydrous alumino-silicates AS(H)-II and high-temperature sillimanite*. Page 1562.
- Roy A. Bailey: *Contact fusion of argillaceous and arkosic sediments by an andesite intrusion, Valles Mountains, New Mexico*. Page 1565.
- Paul B. Barton, Jr., and Priestley Toulmin, III: *Electrum-tarnish method for determining the chemical potential of sulfur in laboratory sulfide systems*. Page 1567.
- Philip M. Bethke and Paul B. Barton, Jr.: *Trace-element distribution as an indicator of pressure and temperature of ore deposition*. Page 1569.
- R. S. Cannon, Jr., A. P. Pierce, and J. C. Antweiler: *Significance of lead isotopes to problems of ore genesis*. Page 1578.
- J. T. Cumberledge and V. A. Saull: *Some experiments on surface and strain energy in minerals*. Page 1584.
FRANK DACHILLE, SEYMOUR MERRIN, AND RUSTUM ROY: Successful application of shear in synthesizing high-pressure forms of several phases. Page 1584.

CHARLES LAURENCE DAHL AND MATTHEW P. NACKOWSKI: Trace ferrides in iron ores from the Iron Springs district, Utah. Page 1585.


GEORGE DE VORE: Implications of the compositional adjustments required at crystal surfaces. Page 1588.


F. D. ECKELMANN AND J. L. KULP: Lead isotopes and ore deposition in the southeast Mironvari lead district. Page 1595.


EINAR C. ERICKSON: Geochemistry and linearament tectonics. Page 1597.


HENRY PAUL AND HERMAN THOMAS: Argon ages of the great ash bed from the Ordovician of Alabama and of the bentonite marker in the Chattanooga shale from Tennessee. Page 1600.


SUBRATA GHOSE: Crystal structure of cummingtonite and Mg-Fe ordering in ferromagnesian amphiboles. Page 1608.


PROCEEDINGS OF 40TH ANNUAL MEETING

Julian R. Goldsmith and Donald L. Graf: Subsolidus relations in the system CaCO₃-MnCO₃. Page 1610.


E. Wm. Heinrich: Lithium-tantalum pegmatites of the São João do Rei district, Minas Gerais, Brasil. Page 1617.


Harold L. James: General features of stable-isotope research, as applied to problems of ore deposits: Introduction. Page 1623.

Sturat E. Janness: Regional metamorphism, feldsparization, and granitization in eastern Newfoundland. Page 1623.


C. L. Jones: Potash deposits in the Carlsbad district, southeastern New Mexico. Page 1625.

C. L. Jones and B. M. Madsen: Observations on igneous intrusions in Late Permian evaporites, southeastern New Mexico. Page 1625.

J. Kallikoski: Sphalerite temperatures from the Brunswick and Nigadoo deposits, New Brunswick, Canada. Page 1626.


Frank L. Koucky, Jr.: Stannite series. Page 1632.


Henry Lepp and Samuel S. Goldich: Chemistry and origin of iron formations. Page 1637.


A. C. Lilly and D. A. Lowitz: Dielectric characteristics of selected layer silicates. Page 1639.


Leon E. Long: Isotopic ages in the area of the City of New York. Page 1640.


J. MacChesney and Arnul Muan: Phase equilibria in the system iron oxide-titanium oxide at low-oxygen pressures. Page 1641.
Charles Milton, Mary E. Mrose, Edward C. T. Chao, and Joseph J. Fahey: Norseth-ite, BaMg(CO₃)₂, a new mineral from the Green River formation, Wyoming. Page 1646.
Martin W. Molloy and Paul F. Kerr: X-ray spectrochemical analysis: an application to certain light elements in clay minerals and volcanic glass. Page 1646.
George W. Moore: Alteration of gypsum to form the Capitan limestone of New Mexico and Texas. Page 1647.
V. Rama Murthy: Lead isotopic study of ore and igneous minerals at Butte, Montana. Page 1649.
Edwin Roedder: Fluid inclusions as samples of the ore-forming fluids. Page 1663.
Arthur W. Rose: Trace elements in sulfide minerals from the Central district, New Mexico, and the Bingham district, Utah. Page 1664.
P. E. Rosenberg: Subsolidus relations on the join CaMg(CO₃)₂-CaFe(CO₃)₂ of the system CaCO₃-MgCO₃-FeCO₃. Page 1664.


Ralph E. Segnit, Ursula M. Oxburgh, and Heinrich D. Holland: Solubility of calcite in water between 100° C. and 200° C. Page 1673.


Richard P. Sheldon: Geochemistry of uranium in phosphorites and black shales of the Phosphoria formation (Permian). Page 1675.


Thomas E. Sternberg, Alfred G. Fischer, and Heinrich D. Holland: Strontium content of calcites from the Steinplatte reef complex, Austria. Page 1681.


E. O. Strahl: Relationships between selected minerals, trace elements, and organic constituents of several black shales. Page 1682.


Priesley Toulmin, III: Composition of feldspars and crystallization history of the granitesyenite complex near Salem, Essex County, Massachusetts. Page 1689.

Alfred H. Truesdell and Alice D. Weeks: Relation of the Todillo limestone uranium deposits to Colorado Plateau uranium deposits in sandstone. Page 1689.


Alice D. Weeks and D. Hoye Eargle: Deposition of uranium at Palangana salt dome, Dauval County, Texas. Page 1695.

Donald E. White and Harmon Craig: Isotope geology of the Steamboat Springs area, Nevada. Page 1696.


