

PROCEEDINGS  
OF THE  
MINERALOGICAL SOCIETY  
(1962)

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EXCERPT MINUTES OF COUNCIL MEETING

*Held in the Apartments of the Geological Society, Burlington House  
London W., 25 January 1962, at 3 p.m.*

Prof. L. R. WAGER, President, in the Chair

The following were provisionally elected Ordinary Members of the Society: James Andrew Bain, Gwyneth Alva Challis, John Leonard Daniels, Lucien Cedric Fordon-Bellgrove, Mario Fornaseri, Clarence Marvin Jenni, Dietrich Dankwart Klemm, William Francis Moll, Brian Albert Sturt, John William Tlapek, William Uytenbogaardt, Robert Eugene Winchell, Alan Robert Woolley. Further, Prof. Tei-ichi Ito, Prof. Felix Karl Ludwig Machatschki, and Prof. Paul Ramdohr were provisionally elected Honorary Members.

The death of Dr. Harold Eugene Buckley was reported.

The resignations of Mr. C. M. Gregory, Mr. R. A. A. Johnston, Mr. P. H. Ribbe, and Dame Kathleen Lonsdale were accepted. Dr. Claringbull's offer to inquire whether Dame Kathleen Lonsdale might withdraw her resignation was approved.

The receipt of a remittance from Prof. J. L. Kulp in excess of the arrears for which he was removed in March 1961 was reported. His renewal of membership, if he so desired, was authorized.

Reports were received from the Treasurer, the Editors, and the Clay Minerals Group: Offers to co-operate in abstracting from Prof. E. Sanero (Italy), and Frau Dr. Isa Kubach (Germany) had been received; and the appointment of Mearns Publicity, Aberdeen, as agents for advertising in the *Clay Minerals Bulletin* was noted.

The appointments to represent the Society, and to Commissions at the Third General Meeting of the International Mineralogical Association in

Washington were confirmed, as follows: Dr. J. R. Butler (Delegate), Dr. R. A. Howie (Abstracts), Mr. E. A. Jobbins (Mineral Data), Dr. M. H. Hey (New Minerals), Mr. P. G. Embrey (Museums), and Dr. C. H. Emeleus (Teaching). It was noted that the President had applied to the Royal Society for a grant towards the cost to members of attending this meeting.

The dates 27–28 September 1962 were confirmed for the Meeting of the Society to be held in Edinburgh; papers would be read on Thursday; and excursions, possibly to Arthur's Seat, the Royal Scottish Museum, and localities in the East Lothians, would be on Friday, and perhaps Saturday.

The Secretary's further representation to the Ministry of Housing and Local Government for exemption from the Radioactive Substances Act, 1960, was reported.

Mr. A. W. G. Kingsbury was appointed to succeed Dr. W. Campbell Smith as the Society's representative to the Geological Conservancy Council.

Mr. H. P. Rooksby and Mr. P. G. Embrey were appointed auditors of the Society's accounts for the year ending 31 December 1961.

The appointment of Mrs. M. E. Robinson as Publications Assistant was noted.

It was agreed that notice of the International Geological Congress, to be held in India in December 1964, should be included in a future Notice of the Society.

## GENERAL MEETING

*Held in the Apartments of the Geological Society, Burlington House  
London W., 25 January 1962, at 5 p.m.*

Prof. L. R. WAGER, President, in the Chair

Forty-three Members and nine Visitors were present.

The elections of thirteen Ordinary Members and three Honorary Members of the Society provisionally made by the Council were confirmed.

The following exhibits were shown:

1. Variscite from High Down Quarry, Filleigh, near South Molton, and from Pitts Cleave Quarry, Tavistock (both in Devon).

2. Strengite from Wheal Phoenix, Linkinhorne, Cornwall, and from Burdell Gill, Caldbeck, Cumberland: by Mr. Arthur Kingsbury.

The following papers were read and discussed:

1. Chinese mineralogical and petrological terminology. Part 1. Mineralogy: by Mr. A. C. Barnes, Dr. J. E. S. Bradley, and Dr. Olive Bradley.
2. Optical determination of aegirine-augite with the universal stage: by Prof. B. C. King (vol. 33, p. 132).
3. Metamorphic pyroxenes from the Broken Hill district, N.S.W., Australia: by Mr. R. A. Binns (vol. 33, p. 320).
4. Goyazite and florencite from two African carbonatites: by Dr. Duncan McKie (vol. 33, p. 281).

The following papers were taken as read:

1. Powellite from Traprain Law, Haddingtonshire, Scotland: by Dr. M. H. Battey and Dr. A. A. Moss (vol. 33, p. 158).
2. The crystal chemistry of ettringite: by Dr. Duncan McConnell and Dr. Joseph Murdoch (vol. 33, p. 59).
3. Extinction Curves and 2V: a stereographic solution: by Dr. F. E. Tocher (vol. 33, p. 52).

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#### EXCERPT MINUTES OF COUNCIL MEETING

*Held in the Apartments of the Geological Society, Burlington House  
London W., 22 March 1962, at 3 p.m.*

Prof. L. R. WAGER, President, in the Chair

The following were provisionally elected Ordinary Members of the Society: David Atkin, Richard Lee Berger, Graham Alan Chinner, William Elrick Fraser, Moyle E. Harward, Alfred Abraham Levinson, Dorian Glen Whitney Smith, Marc Bernard Vuagnat, and Peter Charles Wright.

It was reported that Prof. J. L. Kulp had written regretting his inability to continue as a member and requesting that his excess payment be considered a donation to the Society.

Reports were received from the Treasurer, the Editors, the Clay Minerals Group, and the Publications Committee. The Treasurer presented the audited accounts for 1961, which were approved (vol. 33, pp. liv-lix).

Prof. J. H. Taylor suggested that those subscribers to the *Magazine* who did not also subscribe to the *Abstracts* be induced to do so.

It was reported that Dr. J. McAndrew had written proposing measures to improve the existing arrangements for abstracting in Australia.

The Council expressed its regret on Dr. Campbell Smith's resignation as a Managing Trustee, and thanked him for the many years he had served the Society in this capacity. Prof. J. H. Taylor was appointed to succeed Dr. Campbell Smith as a Managing Trustee.

It was agreed that the Bye-Laws be changed to include the Publications Manager as an Officer of the Society.

The Council considered two detailed alternative proposals by Dr. A. F. Seager for the future of the joint publication, *Mineralogical Abstracts*; and agreed that these be submitted to the Mineralogical Society of America for their consideration.

It was suggested that the question of advertising in the *Mineralogical Abstracts* be raised at the forthcoming joint meeting of the British and American Societies in Washington.

The question of increased subscription by the British Society was referred to the June meeting of the Council.

The President reported that the Royal Society had made a contribution of £300 towards the costs of members attending the I.M.A. meeting in Washington, the allocation of which had been made.

Dr. M. H. Hey was authorized to publish the findings of the Nomenclature Commission of the I.M.A. in a Short Communication in the *Mineralogical Magazine*.

## GENERAL MEETING

*Held in the Apartments of the Geological Society, Burlington House  
London W., 22 March 1962, at 5 p.m.*

Prof. L. R. WAGER, President, in the Chair

Thirty-seven Members and ten Visitors were present.

The elections of nine Ordinary Members of the Society provisionally made by the Council were confirmed.

The following papers were read and discussed:

1. Garnonite, a new zeolite, from Ireland and Iceland: by Dr. G. P. L. Walker, with analyses by Mr. I. S. E. Carmichael (vol. 33, p. 173).
2. Crystallographic study of chrysotile dehydration in air and under hydrothermal conditions: by Mr. M. C. Ball and Dr. H. F. W. Taylor (vol. 33, p. 467).
3. Strontium in plagioclase feldspars from four layered basic masses in Somalia: by Dr. J. R. Butler and Dr. W. Skiba (vol. 33, p. 213).

## 4. The dehydration of bultfonteinite: by Dr. E. C. McIver.

The pseudo-monoclinic mineral bultfonteinite,  $\text{Ca}_4\text{Si}_2\text{O}_{10}\text{F}_2\text{H}_6$ , undergoes a phase change at  $390^\circ\text{C}$  to a monoclinic form in which some of the hydrogen ions are disordered. The monoclinic form is unstable and slowly dehydrates to an oriented crystal of cuspidine. A mechanism is suggested that requires that all the anions have an equal chance of being removed as water and not necessarily those that have been identified as water molecules in the structure. The cations are considerably rearranged, but the main features of the anion framework are preserved.

5. Some petrological aspects of order-disorder in feldspars: by Dr. A. S. Marfunin (vol. 33, p. 298).

The following papers were taken as read:

1. The production of wooden replicas of natural crystals: by Mr. G. G. Brebner and Dr. F. E. Tocher (vol. 33, p. 162).

2. Owyheeite from Rivertree, New South Wales: by Dr. L. J. Lawrence (vol. 33, p. 315).

3. The ageing of sesquioxide gels. II. Alumina gels: by Dr. R. C. Mackenzie, Dr. R. Meldau, and Dr. J. A. Gard (vol. 33, p. 145).

4. Location of argon and water in cordierite: by Dr. J. V. Smith and Mr. W. Schreyer (vol. 33, p. 226).

5. Observations on the rhombic section of a zoned plagioclase crystal: by Dr. Joseph A. Vance (vol. 33, p. 125).

6. Low-potash gismondine from Ireland and Iceland: by Dr. G. P. L. Walker, with analysis by Mr. I. S. E. Carmichael (vol. 33, p. 187).

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#### EXCERPT MINUTES OF COUNCIL MEETING

*Held in the Apartments of the Geological Society, Burlington House  
London W., 7 June 1962, at 3 p.m.*

Prof. L. R. WAGER, President, in the Chair

The following were provisionally elected Ordinary Members of the Society: Arthur Oren Beall, Ronald Berlin, Keith Chaperlin, William Frederick Cole, Ian MacFarlane Gray, Lewis James Monkman, Duane Milton Moore, John James Ravenscroft Patrick, George Robert Rapp, and John Starkey.

The names of Mr. T. E. Brown, Mr. D. J. Shearman, Mr. R. D. Stevens, Mr. M. S. Venkatram, and Dr. R. Walls were removed from the list of members for non-payment of subscriptions.

Reports were received from the Treasurer, the Editors, and the Clay Minerals Group. It was agreed that the Central Press Ltd., Aberdeen,

should be given the contract for printing the Electron Optical Monograph. In view of questions of staff and space at the London office of the Society, Dr. Perrin was authorized to explore the possibility of a subscription agency undertaking the work of sales of back numbers of the *Bulletin*.

It was reported that subsequent to representations to the Ministry of Housing and Local Government regarding the implementation of the Radioactive Substances Act, 1960, information had been received that the Museum Exemption Order and the Thorium and Uranium Compounds Exemption Order were under preparation. The terms of these orders would not become effective in less than one year.

The Secretary reported on the attendance of the delegates and members at the I.M.A. meeting in Washington on 17–20 April 1962. Two field trips were taken: symposia had been on layered intrusions and on the mineralogy of sulphides; and two new commissions on Ore Microscopy and on Cosmic Mineralogy were formed.

The Secretary reported that the overall feeling of the Commission on Abstracts, Washington, was to maintain the *status quo*, with the Anglo-American organization expanding coverage country by country. The Council agreed that the names of the national mineralogical societies co-operating in abstracting be printed in the inside cover and opening page of *Mineralogical Abstracts*, commencing vol. 16, March 1963.

The Editor reported on the decisions of the I.M.A. Commission on New Minerals and Mineral Names. In the selection of the use of alternative names the Council favoured 'sphalerite' and 'siderite'.

The Council requested that the Secretary continue to act as the Society's Representative on the I.M.A., unless he finds he cannot continue to do so.

The Secretary was directed to convey to the Royal Society the Council's appreciation for their grant of £300 towards the cost of members attending the I.M.A. meeting in Washington.

It was reported that the Council of the Mineralogical Society of America had agreed to a slight modification of one of the proposals submitted by the Treasurer for the future running of the *Mineralogical Abstracts*: an increase of 10s. in the British Society's membership subscription would be added to the existing allocation to *Mineralogical Abstracts*; the subscription of M.S.A. members (non-members of the British Society) would be raised to \$4.50, this price also applying to all members of co-operating societies; the annual subscription to all subscribers (non-members) would be raised to £4. 4s.

The Council authorized the number of *Mineralogical Magazines* printed to be increased from 1800 to 2000 per issue, commencing with June 1962 number.

The Council agreed that membership subscription should be increased to £3. 10s. per annum to commence 1 January 1963.

The following dates for meetings in 1963 were agreed subject to the apartments of the Geological Society being available: 24 January, 28 March, 6 June, 7 November.

The Council agreed that a committee be set up to examine the development of new fields of interest to the Society, with especial reference to reflected light mineralogy, and the possibility of forming a group in this field. The following were elected to this committee: Prof. W. A. Deer, Prof. K. C. Dunham, Dr. A. F. Hallimond, and Dr. A. P. Millman, with Mr. S. H. U. Bowie (Secretary). It was proposed that a notice of this committee be inserted in the following Meeting Notice. It was decided to increase the size of the existing *Mineralogical Magazine* to cover these new fields of interest.

## GENERAL MEETING

*Held in the Apartments of the Geological Society, Burlington House  
London, W., 7 June 1962 at 5 p.m.*

Prof. L. R. WAGER, President, in the Chair

Thirty-four Members and five Visitors were present.

The elections of ten Ordinary Members of the Society provisionally made by the Council were confirmed.

The following exhibits were shown:

1. Nordstrandite,  $\text{Al}(\text{OH})_3$ , with goethite, quartz, and minor diaspore, stibiconite, cinnabar, and gold in soil from West Sarawak: by Mr. T. Deans.

2. A simple polishing machine: by Dr. A. F. Hallimond.

The following papers were read and discussed:

1. Amphiboles from the Younger Granites of Nigeria. Pt. 1. Chemical classification: by Mrs. Gloria Borley (vol. 33, p. 358).

2. The chemistry and mineralogy of the olivine nodules of Calton Hill, Derbyshire: by Mr. S. el D. Hamad (vol. 33, p. 483).

3. Cobaltic hydroxide in nature: by Dr. M. H. Hey (vol. 33, p. 253).

4. Metamorphosed amygdales from 'S Airde Beinn, Mull: Pt. 1. Amygdales originally containing calcite: by Mr. J. R. Cann.

Amygdales in basalts metamorphosed by the plug of 'S Airde Beinn, in northern Mull, show high temperature mineral assemblages. The amygdales originally contained calcite, which is now represented by anhydrous calcium silicates: larnite, rankinite, and wollastonite. Silica required for the formation of these minerals has been introduced from the surrounding basalt, giving rise to concentric mono-mineralic zones decreasing in silica content towards the centre. At a later stage movement of Mg and Al occurred into the amygdales, and of Ca outwards, with the formation of melilite replacing both the calcium silicates and the basalt. Aegirine-augite crystallizes rimming the amygdales.

The following papers were taken as read:

1. The Wairarapa Valley, New Zealand, chondrite: by Dr. M. H. Battey (vol. 33, p. 73).

2. Framework structures formed from parallel four- and eight-membered rings: by Dr. J. V. Smith and Dr. F. Rinaldi (vol. 33, p. 202).

3. Low-temperature thermal effects in natural volcanic glasses due to strain: by Dr. A. Ewart and Dr. M. Fieldes (vol. 33, p. 237).

4. An improved technique for producing thin rock-sections: by Dr. A. C. Bishop (vol. 33, p. 247).

5. The origin of stannite by replacement of cassiterite in the Turkaňk zone of the Kutná Hora ore district: by Dr. F. Novák, Dr. A. Blüml, and Dr. A. Tacl (vol. 33, p. 339).

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### GENERAL MEETING

*Held in the Apartments of the Grant Institute of Geology, King's Buildings, West Mains Road, Edinburgh 9, 27 September 1962 at 3 p.m.*

Prof. L. R. WAGER, President, in the Chair

Forty-three Members and five Visitors were present.

The following papers were read and discussed:

1. An electron diffraction study of the zeolite mordenite: by Dr. J. A. Gard.

Mordenite from Jordan Valley, Oregon, has been examined with single crystal electron diffraction. In general the orthorhombic unit cell proposed by Waymouth, with  $a$  18.25  $b$  20.35  $c$  7.50 Å, was confirmed, but there is evidence that this may be only a pseudo-cell, and that  $a$  and  $b$  should both be doubled in the true cell. In addition, diffraction patterns from crystals lying with (100) and (010) normal or nearly normal to the electron beam show that  $h0l$  reflections with  $l$  odd are present as continuous streaks parallel to  $a^*$ . This throws some doubt on the (100) glide plane found by Waymouth *et al.*, and reveals considerable disorder.



2. Monochromator or Graded Spectrum Filter?: by Dr. N. Holgate (vol. 33, p. 512).

3. A differential thermal study of the chlorites: by Dr. Wm Revell Phillips (vol. 33, p. 404).

4. The occurrence of magnesian pyroxenes and magnetite in porphyritic acid glasses: by Dr. I. S. E. Carmichael (vol. 33, p. 394).

5. Rosasite, aurichalcite, and associated minerals from Heights of Abraham, Matlock Bath, Derbyshire, with a note on infra-red spectra: by Dr. R. S. W. Braithwaite and Mr. George Ryback (vol. 33, p. 441).

6. Lamprophyre dykes from Argyll: by Dr. M. J. Gallagher (vol. 33, p. 415).

7. Some observations on igneous ferrohastingsites: by Mrs. Gloria Borley and Mr. M. T. Frost.

8. Some orthopyroxenes from Scottish metamorphic rocks: by Dr. R. A. Howie.

A field excursion was arranged on 28 September 1962 and led by Prof. F. H. Stewart: the items included: Kidlaw quarry, Traprain Law, Garleton Hills, and North Berwick shore.

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#### EXCERPT MINUTES OF COUNCIL MEETING

*Held in the Apartments of the Geological Society, Burlington House  
London W., 8 November 1962, at 3 p.m.*

Prof. L. R. WAGER, President, in the Chair

The following were provisionally elected Ordinary Members of the Society: Norman Simpson Angus, George William Bailey, Reginald Edward Keith Benjamin, Anthony Eric Beswick, Edward Brennan, Allan Fielding Burns, Charles William Claxton, Peter McLaren Donald Duff, Anthony Meredith Evans, M. Charles Gilbert, Timothy Bance Greenland, Peter Ralph Hooper, Marion Lercy Jackson, Edward Leon Philip Mercy, Sergio Morgante, Martin Munroe, Peter O'Neill, Charles Bertram Sclar, Karl-Heinz Ludwig Sehlke, Diana Stephanie Sutherland, Alec Francis Trendall, Brian Geoffrey Johnson Upton, Ronald Holden Vernon, and Geoffrey Walton.

The death of Prof. Khabib M. Abdullaev was reported.

Reports were received from the Treasurer, the Editors, the Clay Minerals Group, the Publications Committee, and the Sub-Committee on New Fields of Interest to the Society. A standing Sub-Committee

(to be reviewed annually) to promote the interests of ore mineralogy was appointed as follows: Mr. S. H. U. Bowie, Prof. W. A. Deer, Mr. C. F. Griffiths, Dr. A. F. Hallimond, Dr. N. F. M. Henry, Dr. A. P. Millman, Mr. R. Phillips, and Dr. E. Stumpfl. A further standing Sub-Committee to consider aspects of Isotope Geochemistry was appointed as follows: Mr. S. H. U. Bowie, Dr. J. R. Butler, Prof. C. Davidson, Mr. J. Miller, Dr. S. Moorbath, Dr. A. Smales, Prof. E. A. Vincent, and Prof. L. R. Wager.

Arising out of the Publications Committee's report the Council agreed that: 50 reprints should be issued to authors free of charge, and, if too expensive, their covers dispensed with; part-time clerical assistance be secured for the *Abstracts*; the question of printing a second edition of the Differential Thermal Analysis monograph be referred to the editor, Dr. R. C. Mackenzie; and the printers of the X-ray monograph to print 1000 copies of the monograph before destroying the type set. The Council noted that Mrs. E. Smith had been appointed as clerk to the Publications Department. The Secretary was authorized to go further into the matter of the offer by Messrs. Dawson & Sons to publish and distribute specified back numbers of the *Mineralogical Magazine*. Possible increased printing charges from the printers of the *Abstracts* were intimated.

Dr. Hey expressed his wish to stand down from the I.M.A. Mineral Data Commission.

The Council expressed its appreciation to Prof. F. H. Stewart and Dr. J. Wadsworth for organizing the meeting of the Society in Edinburgh on 27–28 September 1962.

It was decided to hold a meeting in Manchester during the coming summer, possibly in September 1963.

Dr. Perrin reported on the clerical assistance he had secured to deal with the sales work of the *Bulletin*.

The Secretary read the draft of the Annual Report of the Council for the past year, and this was approved for presentation to the Society at the ensuing Anniversary Meeting.

It was agreed that Oxford University Press be asked to continue to store the blocks relating to back numbers of the *Mineralogical Magazine*.

The Secretary reported that the Royal Entomological Society of London, the landlords of the Society's offices at 41 Queen's Gate, London S.W. 7, had offered a new lease, on terms which differed in various respects from the previous lease. The Council authorized the lease to be signed by the Managing Trustees.

## GENERAL (ANNIVERSARY) MEETING

*Held in the Apartments of the Geological Society, Burlington House  
London W., 8 November 1962, at 3 p.m.*

Prof. L. R. WAGER, President, in the Chair

Seventy-seven Members and seven Visitors were present.

To make provision for the proposed increase of membership subscription, and for the inclusion of the Publications Manager as an Officer of the Society, the following amendments were put to the Meeting:

*Bye-law 5:* Ordinary Members shall pay an entrance fee of £1 and annual subscription of £3. 10s. They shall be entitled to compound for the annual subscription by a single payment of £60, but Members who have paid their annual subscriptions for fifteen years shall be entitled to compound for £50, and those who have paid such subscriptions for twenty-five years shall be entitled to compound for £40, provided always that no Member shall be entitled to compound who is in arrear with his annual subscription for the preceding calendar year.

*Bye-law 11:* The Society shall be governed by a Council consisting of a President, two Vice-Presidents, a General Secretary, a Foreign Secretary, a Treasurer, the Editors of the *Journal* and *Abstracts*, the Publications Manager, and twelve Ordinary Members, who shall be elected annually, together with the preceding President,<sup>1</sup> who shall be entitled to remain on the Council for three years from the date of his retirement from the Chair, and, *ex officio*, the Managing Trustees of the Society.

*Bye-law 12:* The President, General Secretary, Treasurer, Editors of the *Journal* and *Abstracts*, and the Publications Manager shall be deemed the Officers of the Society.

The elections of twenty-four Members of the Society provisionally made by the Council were confirmed.

The General Secretary read the following:

## ANNUAL REPORT OF THE COUNCIL FOR 1961-62

*Membership.* The total membership on 31 October 1962 was 772 against 730 on 31 October 1961. Fifty-five new members have been elected during the year, six members have resigned, and the names of five members have been removed on account of arrears of subscription. The Society has lost by death two Ordinary Members. On 31 October 1962 the membership consisted of 9 Honorary Members and 763 Ordinary Members, of whom 71 are Life Members. 367 members are also members of the Clay Minerals Group.

<sup>1</sup> Presidents who were elected previous to the date (1948) of the passing of this Bye-law may remain Life Members of the Council as provided in the original Bye-laws revised in 1931 and 1940.

*Meetings.* The total attendance at the five general meetings held during the session 1961-62 was 236 members and 34 guests, giving an average of 54 per meeting. At these meetings 24 papers were read, 18 papers were taken as read, and 5 exhibits shown.

At two meetings of the Clay Minerals Group, held in London and Leeds, respectively, twenty papers were read: the average attendance was 38.

*Publications.* Three numbers of the *Mineralogical Magazine* have been issued during 1962, and the fourth (December 1962) is expected shortly. The four numbers (256-259) will contain Bye-laws and List of Members in 44 pages, Proceedings for 1961 (17 pages), 34 papers, 8 short communications, and 11 book reviews in 352 pages with 3 plates and 111 text figures. Four numbers, including the December 1961 number, of *Mineralogical Abstracts* have been issued during 1962 and contain 2782 items in 324 pages. The December 1962 number will be the Index to volume 15.

Two numbers (26 and 27) of the *Clay Minerals Bulletin* have been issued during the year. The X-ray monograph was published in December 1961.

*Financial.* The accounts for the calendar year 1961 are published in *Mineralogical Magazine* no. 257 (June). During the year income from the General Fund exceeded expenditure by £607. 7s. 10d. The excess of assets (exclusive of the Society's library and stock of publications) over liabilities at 31 December 1961 was £6509. 18s. 8d. against £6800. 13s. 10d. at the close of 1960.

Three numbers of the *Mineralogical Magazine* for 1962 have appeared, the first two of which cost £1316. 12s. 7d. (including Bye-laws and Lists of Members); and three numbers of *Mineralogical Abstracts*, the first two of which cost £1535. 11s. 7d. The printing of the second edition of the monograph 'X-ray identification and crystal structures of clay minerals' cost £2856. 2s. 6d.

Sales of publications so far during 1962 are as follows: *Mineralogical Magazine* £2008. 14s. 8d., *Mineralogical Abstracts* £1592. 8s. 8d., X-ray monograph £3538. 14s. 4d., D.T.A. monograph £269. 6s. 1d.

*Ashcroft Bequest.* The late Mr. F. N. Ashcroft left a sum of £100 to Dr. W. Campbell Smith for the purpose of completing the cataloguing of the Ashcroft Collection in the British Museum (Natural History), the residue from which was to be given to the Mineralogical Society. The income of the fund has been used to pay for work on the collections. The capital has been invested in £100 Esso Petroleum Co. 5½% Debenture shares. These have now been transferred to the Society by Dr. W. Campbell Smith. The Council decided to add these shares to the Miers-Spencer Memorial Fund.

The balances at the Society's Bankers and in the Post Office Savings Bank on 31 October 1962 were: General Fund £2802. 12s. 2d., Miers-Spencer Memorial Fund £234. 12s. 9d.

*General.* (i) *Managing Trustee.* Dr. Campbell Smith has resigned as a Managing Trustee to the Society and has been succeeded by Prof. J. H. Taylor.

(ii) *International Mineralogical Association.* The Third General Meeting and Congress of the International Mineralogical Association was held in Washington, D.C., from 11 April to 1 May 1962. The Secretary was the Society's voting delegate. A generous grant from the National Science Foundation enabled participants from Europe to travel to Washington at a return fare of under £55. Several of our members took advantage of a further offer of \$100.00 by the N.S.F. The Royal Society gave financial support to a delegation of 7 members of the Society and the Society was thereby enabled to be represented on all the Commissions of the I.M.A.

(iii) *Meeting outside London.* In response to various requests over the years the Society agreed to hold a meeting outside London; Edinburgh was the chosen venue. One afternoon and evening was devoted to the reading of papers with discussion.

On the following day a field excursion led by Prof. F. H. Stewart was arranged. The Council are in favour of holding other occasional meetings outside London from time to time.

On the proposal of Dr. P. A. Sabine, seconded by Dr. E. H. C. Rutland, the adoption of the Annual Report was carried unanimously.

A vote of thanks to the Geological Society for the use of the apartments during the past session was proposed by Mr. T. Deans, seconded by Dr. C. H. Emeleus, and carried with acclamation.

The President read the list of the Officers, Vice-Presidents, Foreign Secretary, and Ordinary Members of the Council elected for the session 1962-3 in accordance with bye-law 20:

*President.* Prof. L. R. Wager, M.A., Sc.D., B.Sc., F.R.S.

*Vice-Presidents.* Dr. G. F. Claringbull, B.Sc., Ph.D., A.Inst.P., F.G.S.; Prof. K. C. Dunham, D.Sc., Ph.D., S.D., M.I.M.M., F.R.S., F.G.S.

*Treasurer.* Dr. A. F. Seager, B.Sc., Ph.D., A.K.C., F.G.S.

*General Secretary.* Dr. J. R. Butler, M.A., Ph.D.

*Foreign Secretary.* Dr. W. Campbell Smith, C.B.E., M.C., T.D., M.A., Sc.D., F.G.S.

*Editor of the Mineralogical Magazine.* Dr. M. H. Hey, M.A., D.Sc.

*Editor of Mineralogical Abstracts.* Dr. J. Phemister, M.A., D.Sc., F.R.S.E., F.G.S.

*Ordinary Members of Council*

Dr. T. W. Bloxam, B.Sc., Ph.D., F.G.S.

Mr. S. H. U. Bowie, B.Sc.

Prof. W. A. Deer, M.Sc., Ph.D., F.R.S., F.G.S.

Mr. A. W. G. Kingsbury, F.G.S.

Dr. A. P. Millman, B.Sc., D.I.C., A.R.S.M., Ph.D., F.G.S.

Mr. R. Phillips, B.Sc.

Mr. H. P. Rooksby, B.Sc., F.Inst.P.

Dr. E. Stumpff, Dr. rer. nat.

Prof. J. H. Taylor, M.A., B.Sc., Ph.D., F.R.S., F.G.S.

Dr. W. J. Wadsworth, M.A., D.Phil., F.G.S.

Prof. F. Walker, M.A., Ph.D., D.Sc., F.R.S.E., F.G.S.

Dr. J. Zussman, M.A., Ph.D.

A vote of thanks to the retiring Vice-President (Dr. A. F. Halli-  
mond) and Members of Council was proposed by Dr. R. A. Howie  
and seconded by Dr. A. A. Moss.

The following papers were read:

1. The spectrochemical determination of feldspars within the fields  
microcline-albite and albite-labradorite: by Dr. W. E. Fraser and Mr.  
G. Downie.

A comprehensive investigation of the spectral lines of constituents of feldspars has shown the possibility of rapid feldspar determination, accurate to within 3 % Or, Ab, or An in the fields microcline-albite and albite-labradorite. Samples are burned in a d.c. arc using cathode excitation and the intensities of four Na, five Ca, and three K lines are estimated visually on the recorded spectrogram. The

*[continued on p. lxxvii]*

# MINERALOGICAL INCOME AND EXPENDITURE ACCOUNT

## A. GENERAL

| 1961<br>£ | INCOME  | £ s. d.   | £ s. d.       |
|-----------|---|-----------|---------------|
|           | Members' subscriptions—   |           |               |
|           | Annual subscriptions . . . . .  | 1102 5 9  |               |
|           | Entrance fees . . . . .   | 50 0 0    |               |
| 1044      | <i>Mineralogical Magazine</i> —   |           | 1152 5 9      |
|           | Advertisement Fees . . . . .  | 58 9 1    |               |
|           | Sales . . . . .   | 2722 17 6 |               |
| 3408      | Investment revenue—   |           | 2781 6 7      |
|           | Interest on investments . . . . .   | 240 19 4  |               |
|           | Post Office Savings Bank interest . . . . .   | 20 17 6   |               |
| 264       | Sundry income . . . . .   |           | 261 16 10     |
|           | Clay Minerals Group—  |           | 11 6          |
|           | <i>Clay Minerals Bulletin</i> .—  |           |               |
|           | Subscriptions . . . . .   | 283 3 9   |               |
|           | Sales, including authors' reprints . . . . .  | 25 8 8    |               |
| 486       | Clay Minerals Monographs:   |           | 308 12 5      |
|           | Sales—2nd ed. <i>X-ray Identification and Crystal Structures of Clay Minerals</i> . . . . . | 4178 7 4  |               |
|           | <i>The Differential Thermal Investigation of Clays</i> . . . . .                            | 371 18 1  |               |
| 673       | <i>Glossary of Clay Trade Names</i> , sales . . . . .                                       |           | 4550 5 5      |
| 13        | Interest on Bank Accounts (Harpden and Cambridge) . . . . .                                 |           | 8 4<br>4 19 1 |

£5888

£9060 5 11

## B. MIERS-SPENCER

| £          |   | £ s. d.          |
|------------|---|------------------|
| 21         | Investment revenue . . . . .              | 25 1 11          |
|            | Bequest from Mr. F. N. Ashcroft . . . . . | 100 0 0          |
| <u>£21</u> |   | <u>£125 1 11</u> |

## C. CLAY MINERALS GROUP

|  |  | £ s. d.         |
|--|--|-----------------|
| Donations . . . . .                      |  | 61 7 11         |
| From the Mineralogical Society . . . . . |  | 50 0 0          |
| Interest on Bank Account . . . . .       |  | 1 17 3          |
|  |  | <u>£113 5 2</u> |

# SOCIETY

FOR THE YEAR ENDED 31 DECEMBER 1962

## FUND

| 1961<br>£ | EXPENDITURE   | £ s. d.  | £ s. d.    |
|-----------|---|----------|------------|
|           | <i>Mineralogical Magazine—</i>  |          |            |
|           | Nos. 256-259:   |          |            |
|           | Printing . . . . .  | 1850 4 7 |            |
|           | Illustrations . . . . .   | 166 2 4  |            |
|           | Authors' reprints . . . . .   | 239 11 0 |            |
|           | Distribution to members . . . . .   | 113 15 7 |            |
|           | Distribution to subscribers . . . . .   | 115 17 8 |            |
| 2352      |   |          | 2485 11 2  |
| 65        | Editorial Expenses  |          | 55 0 0     |
| 77        | Contribution to <i>Mineralogical Abstracts</i> for Life and Honorary Members  |          | 82 0 0     |
| 32        | Subscriptions to International Mineralogical Association 1962                 |          | 0 0 0      |
|           | Meeting expenses—   |          |            |
|           | Notices of Meetings . . . . .   | 161 18 6 |            |
|           | General expenses in connection with meetings . . . . .                        | 34 14 6  |            |
| 146       |   |          | 196 13 0   |
|           | General expenses—   |          |            |
|           | Office rental and house expenses (including decorations) . . . . .            | 454 7 9  |            |
|           | Clerical assistance . . . . .   | 1306 8 1 |            |
|           | Printing and stationery . . . . .   | 36 4 4   |            |
|           | Postage and telephone . . . . .   | 229 16 5 |            |
|           | Sundry office expenses . . . . .  | 108 2 7  |            |
|           | Contribution to Clay Minerals Group Foreign Delegates Expenses Fund . . . . . | 50 0 0   |            |
| 1990      |   |          | 2184 19 2  |
|           | Clay Minerals Group—  |          |            |
|           | <i>Clay Minerals Bulletin:</i>  |          |            |
|           | Printing Bulletins Nos. 26 and 27 and authors' reprints . . . . .             | 438 6 6  |            |
|           | Reprinting Bulletin No. 11 . . . . .  | 43 19 7  |            |
|           | Editorial expenses . . . . .  | 0 0 0    |            |
| 301       |   |          | 482 6 1    |
| 66        | Monograph expenses . . . . .  |          | 2874 10 0  |
|           | General expenses:   |          |            |
|           | Notices of meetings . . . . .   | 46 19 6  |            |
|           | Expenses in connection with meetings . . . . .                                | 19 4 0   |            |
|           | Office and clerical expenses . . . . .  | 222 3 8  |            |
|           | Secretary's expenses . . . . .  | 10 18 0  |            |
| 252       |   |          | 299 5 2    |
| 607       | Balance, being excess of income over expenditure for the year . . . . .       |          | 400 1 4    |
| £5888     |   |          | £9060 5 11 |

## MEMORIAL FUND

| £   |   | £ s. d.   |
|-----|---|-----------|
|     | Bank charges . . . . .  | 1 8       |
| 21  | Balance, being excess of income over expenditure for the year . . . . . | 125 0 3   |
| £21 |   | £125 1 11 |

## FOREIGN DELEGATES EXPENSES FUND

|   | £ s. d.  |
|---|----------|
| Balance, being excess of income over expenditure for the year . . . . . | £113 5 2 |

We are of the opinion that the growing costs of the *Clay Minerals Bulletin* require examination.  
 25 March 1963 H. P. ROOKSBY } Auditors  
 P. G. EMBREY }  
 A. F. SEAGER, Hon. Treasurer

# MINERALOGICAL BALANCE SHEET AS AT

## A. GENERAL

| 1961<br>£ | LIABILITIES  | £ s. d.   | £ s. d.    | £ s. d. |
|-----------|--|-----------|------------|---------|
|           | Fund Account—  |           |            |         |
|           | Balance per Balance Sheet at 31 December 1961 . . . . .                                      | 5650 8 10 |            |         |
|           | Add Excess of income over expenditure for year<br>ended 31 December 1962 . . . . .           | 400 1 4   |            |         |
|           | Composition fee received . . . . .   | 60 0 0    |            |         |
|           |  | 6110 10 2 |            |         |
|           | Less Depreciation on office furniture and equip-<br>ment . . . . .                           | 103 10 6  |            |         |
|           | Transfer to <i>Mineralogical Abstracts</i> Fund . . . . .                                    | 199 11 5  |            |         |
|           |  | 303 1 11  |            |         |
| 5650      |  |           | 5807 8 3   |         |
| 1178      | Publications Fund . . . . .  |           | 1177 13 9  |         |
|           | Subscriptions, &c., received in advance—   |           |            |         |
| 123       | Members' subscriptions and entrance fees . . . . .   |           | 171 5 2    |         |
|           | Sundry creditors—  |           |            |         |
|           | Oxford University Press for Magazine No. 258 . . . . .                                       | 563 9 8   |            |         |
|           | Oxford University Press for Magazine No. 259 (estimated) . . . . .                           | 533 0 0   |            |         |
|           | Royal Entomological Society for house expenses . . . . .                                     | 28 19 0   |            |         |
|           | Sundry editorial expenses . . . . .  | 55 0 0    |            |         |
|           | Royal Society for loan (Parliamentary Grant-in-aid for<br>scientific publications) . . . . . | 750 0 0   |            |         |
| 1423      | Miscellaneous creditors . . . . .  | 129 14 11 |            |         |
|           |  |           | 2060 3 7   |         |
|           |  |           | £9216 10 9 |         |
|           |  |           | £8374      |         |

## B. MIERS-SPENCER

| £   | Fund Account—  | £ s. d.  | £ s. d.   |
|-----|--|----------|-----------|
|     | Balance per Balance Sheet at 31 December 1961 . . . . .                                | 859 9 10 |           |
|     | Add Excess of income over expenditure for the year ended<br>31 December 1962 . . . . . | 125 0 3  |           |
| 859 |  | 984 10 1 |           |
|     |  |          | £984 10 1 |
|     |  |          | £859      |





**MINERALOGICAL SOCIETIES OF  
MINERALOGICAL  
INCOME AND EXPENDITURE ACCOUNT**

|              | INCOME   | £ s. d.   | £ s. d.            |
|--------------|--|-----------|--------------------|
| 1961<br>£    | Subscriptions—   |           |                    |
|              | Mineralogical Society of America . . . . .                 | 539 5 11  |                    |
|              | Mineralogical Society of Great Britain . . . . .           | 648 0 0   |                    |
| 1301<br>1905 | Sales . . . . .  | 1187 5 11 | 1982 11 9          |
| 317          | Balance, being excess of expenditure over income . . . . . |           | 963 2 3            |
| <u>£3523</u> |  |           | <u>£4132 19 11</u> |

**BALANCE SHEET AS AT**

|              | LIABILITIES   | £ s. d.  | £ s. d.   | £ s. d.          |
|--------------|---|----------|-----------|------------------|
| £            | Fund Account—   |          |           |                  |
|              | Balance per Balance Sheet at 31 December 1961 . . . . .                     | 125 16 4 |           |                  |
|              | Add Capital contribution from Mineralogical Society of America . . . . .    | 199 11 5 |           |                  |
|              | Capital contribution from Mineralogical Society of Great Britain . . . . .  | 199 11 5 |           |                  |
|              | Loan from Mineralogical Society of Great Britain . . . . .                  | 500 0 0  | 1024 19 2 |                  |
|              | Less Depreciation on office furniture and equipment . . . . .               | 14 2 2   |           |                  |
|              | Excess of expenditure over income for year ended 31 December 1962 . . . . . | 963 2 3  | 977 4 5   |                  |
| 126          |   |          |           | 47 14 9          |
| 69           | Subscriptions received in advance . . . . .                                 |          |           | 80 0 0           |
|              | Sundry creditors—   |          |           |                  |
|              | Royal Entomological Society for house expenses . . . . .                    | 14 9 7   |           |                  |
|              | Editorial expenses . . . . .  | 1 7 8    |           |                  |
|              | Overdraft on bank account at Coutts & Co., London . . . . .                 | 56 4 5   |           |                  |
| 905          |   |          |           | 72 1 8           |
| <u>£1100</u> |   |          |           | <u>£199 16 5</u> |

# AMERICA AND GREAT BRITAIN

## ABSTRACTS

FOR THE YEAR ENDED 31 DECEMBER 1962

| 1961<br>£ | EXPENDITURE                                | £ s. d.   | £ s. d.     |
|-----------|--|-----------|-------------|
|           | <i>Mineralogical Abstracts—</i>            |           |             |
|           | Vol. 15, Nos. 3 to 6 inclusive:            |           |             |
|           | Printing . . . . .                         | 2669 15 3 |             |
|           | Distribution . . . . .                     | 335 3 1   |             |
| 2286      |  | 3004 18 4 |             |
|           | Editorial expenses—                        |           |             |
|           | Editor's honorarium . . . . .              | 400 0 0   |             |
|           | Assistant Editor's stipend . . . . .       | 520 13 8  |             |
|           | General editorial expenses . . . . .       | 28 15 10  |             |
| 987       |  | 949 9 6   |             |
|           | Office expenses—                           |           |             |
|           | Office rental and house expenses . . . . . | 149 15 4  |             |
|           | Printing and stationery . . . . .          | 10 14 11  |             |
|           | Postage . . . . .                          | 18 1 10   |             |
| 250       |  | 178 12 1  |             |
| £3523     |  |           | £4132 19 11 |

31 DECEMBER 1962

| £   | ASSETS                              | £ s. d. | £ s. d. |
|-----|-------------------------------------|---------|---------|
|     | Office furniture and equipment—     |         |         |
|     | Original cost . . . . .             | 141 1 4 |         |
|     | Less depreciation . . . . .         | 49 4 11 |         |
| 82  |                                     | 91 16 5 |         |
| 107 | Subscriptions in arrears . . . . .  |         | 108 0 0 |
| 911 | Cash—Coutts & Co., London . . . . . |         | 0 0 0   |

£1100

£199 16 5

25 March 1963

H. P. ROOKSBY }  
P. G. EMBREY } Auditors

A. F. SEAGER, Hon. Treasurer

estimated intensities are substituted in two empirical functions that are sensitive to compositional variations.

2. Phosphate minerals in a calculus from the reticulo-rumen of the sheep: by Mr. S. E. Ellis with X-ray determination by Dr. R. J. Davis and chemical analyses by Mr. D. I. Bothwell (vol. 33, p. 600).

3. Melting relations of Tertiary granitic rocks in Skye and Rhum: by Dr. G. M. Brown (vol. 33, p. 533).

4. An occurrence of nephrite jade in West Pakistan: by Dr. B. C. M. Butler (vol. 33, p. 385).

5. The determination of the calcite: aragonite ratio in mollusc shells by X-ray diffraction: by Mr. T. T. Davies and Dr. P. R. Hooper (vol. 33, p. 608).

The following papers were taken as read:

1. The hōgbomite polytypes: by Dr. Duncan McKie (vol. 33, p. 563).

2.  $\beta$ -Ferric oxyhydroxide-akaganéite: by Dr. A. L. Mackay (vol. 33, p. 270).

3. Meteorite lists and catalogues, 1949-62: compiled by Dr. Brian Mason (vol. 33, p. 265).

4. X-ray, optical, and morphological observations on hodgkinsonite from Franklin Furnace: by Mr. W. M. B. Roberts and Mr. F. M. Quodling (vol. 33, p. 343).

5. Some natural analcime solid solutions: by Dr. J. F. G. Wilkinson (vol. 33, p. 498).