PROCEEDINGS OF THE MINERALOGICAL SOCIETY (1963–64)

EXCERPT MINUTES OF COUNCIL MEETING

Held in the Apartments of the Geological Society, Burlington House, London, W., 24 January 1963, at 3 p.m.

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

The following were provisionally elected Ordinary Members of the Society: Peter Bayliss, Charles Kent Brooks, Neville Rowland Hill, Richard William Lounsbury, Guerry Hamnick McClellan, Maynard Slaughter, Julie Chi-sun Yang.

The resignations of Mrs. E. R. S. Candlin and Messrs. W. Anderson, J. F. T. Blott, C. L. Christ, J. J. de Lange, G. K. Jones, R. L. Gordon, and R. Rice were accepted.

The deaths of H. S. L. Jackson and A. Muir were reported.

Reports were received from the Treasurer, the Editors, the Clay Minerals Group, and the Subcommittee on new interests to the Society.

Dr. J. Zussman, Dr. A. E. Ringwood, and Mr. R. Phillips were proposed as the Society's representatives on the Mineral Data, Cosmic Mineralogy, and Ore Microscopy Commissions respectively of the International Mineralogical Association.

GENERAL MEETING

Held in the Apartments of the Geological Society, Burlington House, London W., 24 January 1963, at 5 p.m.

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

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

The following papers were read and discussed:

1. Reyerite: By Dr. R. A. Chalmers, Dr. V. C. Farmer, Mr. R. I. Harker, Dr. S. Kelly, and Dr. H. F. W. Taylor (vol. 33, p. 821).

2. An X-ray investigation of synthetic pyroxenes in the system acmite diopside–water at 1000 kg/cm^2 water-vapour pressure: by Dr. J. Nolan and Dr. A. D. Edgar (vol. 33, p. 625).

3. Epididymite and milarite—alteration products of beryl from Vezná, Czechoslovakia: by Dr. P. Černý (vol. 33, p. 450).

4. The occurrence of eclogite on the Lyell Highway, Tasmania: by Dr. Alan Spry (vol. 33, p. 589).

The following papers were taken as read:

1. The identity of almeriite with natroalunite: by Dr. A. Hoyos de Castro and Dr. L. J. Alias (vol. 33, p. 353).

2. Amphiboles from the Younger Granites of Nigeria. Part II. X-ray data: by Dr. M. T. Frost (vol. 33, p. 377).

3. A continuous monochromatic interference filter: by Mr. R. K. Harrison and Dr. G. Day (vol. 33, p. 517).

EXCERPT MINUTES OF COUNCIL MEETING

Held in the Apartments of the Geological Society, Burlington House, London W., 28 March 1963, at 3 p.m.

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

The following were provisionally elected Ordinary Members of the Society: David Coates Almond, James William Cole, David Shelley, David Henry Blake, Dkrubaranjan Dasgupta, Virendra Kumar Nayak, Ernest William Renton Stollery, David John Salt, John Malcolm Virgoe.

Reports were received from the Treasurer, the Editors, and the Publications Committee. The Treasurer presented the audited accounts for 1962, which were approved (vol. 33, pp. lxxvi–lxxxi).

It was agreed to send a note of congratulations to Prof. R. L. Parker on his seventieth birthday.

A subcommittee was appointed to report on staff salaries.

GENERAL MEETING

Held in the Apartments of the Geological Society, Burlington House, London W., 28 March 1963, at 5 p.m.

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

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

The following exhibits were shown:

1. Manganotantalite from Morrua, Mozambique: by Mr. R. K. Harrison, Mr. J. E. T. Horne, and Mr. D. Atkin.

2. A new polarizing microscope equipped for measurements in reflected and in transmitted light: by Dr. A. F. Hallimond and Mr. B. O. Payne.

The following papers were read and discussed:

1. A stereographic construction for determining the optic axes of a biaxial crystal from a few extinction measurements: by Prof. N. Joel (vol. 33, p. 769).

2. The oriented transformation of aragonite to calcite: by Dr. D. R. Dasgupta (vol. 33, p. 924).

3. The lattice parameters of high-temperature triclinic sodic feldspars: by Dr. I. S. E. Carmichael and Dr. W. S. MacKenzie (vol. 33, p. 949).

4. Kyanite produced in a granitic aureole: by Dr. W. M. Lobjoit (vol. 33, p. 804).

The following papers were taken as read:

1. Determination of 2V from one extinction curve and its related n_0 curve: by Prof. N. Joel (vol. 33, p. 679).

2. X-ray study of woodruffite from Sandur ore deposits, Mysore State, India: by Dr. C. Naganna and Dr. Vl. Bouška (vol. 33, p. 506).

3. Simpsonite and stibiotantalite from Benson pegmatite mine, Mtoko, Southern Rhodesia: by Dr. O. von Knorring and Dr. G. Hornung (vol. 33, p. 458).

4. Note on a chrome and two manganese garnets from India: by Dr. G. G. K. Sastri (vol. 33, p. 508).

5. Order–disorder in sapphirine: by Dr. D. McKie (vol. 33, p. 635).

6. A new incident illuminator for reflected light: by Mr. Francis Smith (vol. 33, p. 725).

EXCERPT MINUTES OF COUNCIL MEETING

Held in the Apartments of the Geological Society, Burlington House, London W., 6 June 1963, at 3 p.m.

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

The following were provisionally elected Ordinary Members of the Society: Michael William Poulter, Jose Nicolas Sierra, William Roger Smith, Priestley Toulmin 3rd.

The death of Dr. F. L. Stillwell was reported.

Reports were received from the Treasurer, the Editors, the Publications Committee, the Clay Minerals Group, the Committee on Ore Mineralogy, and the Subcommittee on Staff Salaries.

GENERAL MEETING

Held in the Apartments of the Geological Society, Burlington House, London W., 6 June 1963, at 5 p.m.

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

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

The following exhibits were shown:

1. Cinnabar from Rutland Cavern, Matlock Bath, Derbyshire: by Dr. R. S. W. Braithwaite, Mr. T. B. Greenland, and Mr. G. Ryback.
2. Celestine and aurichalcite from Clayton adit, Ecton Hill, Wetton, Staffordshire: by Dr. R. S. W. Braithwaite and Mr. T. B. Greenland.
3. Pegmatite minerals from Southern Rhodesia and S.W. Uganda: by Mr. M. J. Gallagher.

The following papers were read and discussed:

1. An occurrence of morenosite in Ireland: by Mr. R. J. King and Mr. A. M. Evans.
2. Xanthiosite and aerugite: by Dr. R. J. Davis and Dr. M. H. Hey.
3. An unusual distribution of precipitates in a diamond: by Dr. C. J. Shah and Dr. A. R. Lang (vol. 33, p. 594).
4. The recalculation of amphibole analyses: by Mr. R. Phillips (vol. 33, p. 701).

GENERAL MEETING

Held in the Geology Department of Manchester University, 25 September 1963, at 2.30 p.m.

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

The following exhibits were shown:

1. Stalactitic hydrozincite from Ecton mines, Wetton, Staffordshire: by Dr. R. S. W. Braithwaite, Mr. G. Ryback, and Mr. T. B. Greenland.
2. Azurite from Sykes, Bowland Forest High, Yorkshire: by Dr. R. S. W. Braithwaite and Mr. T. B. Greenland.

The following papers were read and discussed:

1. Rhythmic amphibole overgrowths in appinites associated with explosion-breccias in Argyll: by Dr. D. R. Bowes, Dr. E. D. Kinloch, and Dr. A. E. Wright (vol. 33, p. 963).

2. The composition of arsenopyrite in the Ylöjärvi copper deposit, S.W. Finland: by Mr. A. H. Clark.

X-ray powder diffraction and fluorescence methods have been used to determine the compositional variations (As/S ratios, Co, Ni, and Sb) shown by arsenopyrite in the Ylöjärvi deposit, in order to evaluate the application of this mineral as a geobarometer/geothermometer; the temperatures of deposition were estimated independently by analysis of blende and hexagonal pyrrhotine.

3. A petrographic and geochemical study of back-veining and hybridization at a gabbro–felsite contact in Coire Dubh, Rhum, Inverness-shire: by Dr. A. C. Dunham (vol. 33, p. 887).

4. Occurrence of danalite and genthelvite in Nigeria: by Mr. J. Taylor and Mr. G. Jefford (with an appendix on X-ray diffraction data by Mr. J. E. T. Horne and Mr. B. Atkin).

Danalite and genthelvite occur in veins and adjacent greisens in the Younger Granite ring complexes. Three new analyses of genthelvite and four of danalite are presented, the compositions ranging from $He_7Da_5Ge_{88}$ to $He_6Da_{53}Ge_{41}$, in which the symbols represent the end members helvine, danalite, and genthelvite respectively. The physical properties are consistent with previous accounts. The lattice parameter (in Å) is given by the equation $a = 8{\cdot}113_8 + (1{\cdot}86_6\mathrm{He} + 0{\cdot}82_7\mathrm{Da})10^{-3}$, where He and Da are molecular proportions expressed as percentages. Indexed powder data are listed. The paragenesis is discussed and an antipathetic relationship noted between genthelvite and danalite on the one hand and fluorite and topaz on the other.

5. Aspects of the geochemistry of arsenic and antimony, exemplified by the Skaergaard intrusion: by Dr. J. Esson, Dr. R. H. Stevens, and Dr. E. A. Vincent.

EXCERPT MINUTES OF COUNCIL MEETING

Held in the Apartments of the Geological Society, Burlington House, London W., 7 November 1963, at 3 p.m.

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

The following were provisionally elected Ordinary Members of the Society: John David Bell, Stephen George Fleet, Andrew William Flegmann, Edward Alexander Cameron Follett, Eric Frank Lawton, Victor Raymond McGregor, Michael Nicolaou, Tjerk Peters, Anthony George Plant, John Preston, Alfred Edward Ringwood, Andrew Theodore Vladimir Rothstein, Melvin C. Stinson, Maurice Stone, Robert Neville Thompson.

The death of Prof. Manuel Munoz Taboadela was reported.

The reappointment of Prof. C. E. Tilley as a Managing Trustee for a further period of five years was confirmed.

Prof. L. R. Wager was nominated to succeed Prof. C. E. Tilley as the Society's representative on the British National Committee for Geology.

Reports were received from the Treasurer, the Editors, the Committees on Ore Mineralogy and on Geochemistry, and the Clay Minerals Group. The Clay Minerals Group recommended that Messrs. Blackwell's Scientific Publications Ltd. be appointed to handle publication of the Clay Minerals Bulletin from 1 January 1964, that the annual subscription rate covering the Bulletin and Circular be raised to 40*s*., and that members of the Mineralogical Society who have notified their wish to be members of the Clay Minerals Group receive the Bulletin and Circular for 20*s*. per annum. These recommendations were approved.

It was agreed to change the termination of the Society's financial year to a more convenient date.

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

ANNIVERSARY MEETING

Held in the Apartments of the Geological Society, Burlington House, London W., 7 November 1963, at 5 p.m.

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

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

The General Secretary read the following:

ANNUAL REPORT OF THE COUNCIL FOR 1962–63

Membership. The total membership on 31 October 1963 was 816 against 772 on 31 October 1962. Forty-four new members have been elected during this year, eight members have resigned and the Society has lost by death four Ordinary Members. On 31 October 1963 the membership consisted of 9 Honorary Members and 807 Ordinary Members, of whom 71 are Life Members; 377 members are also members of the Clay Minerals Group.

Meetings. The total attendance at the five general meetings held during the session 1962–63 was 227 members and 39 guests, giving an average of 53 per meeting. At these meetings 23 papers were read, 14 papers were taken as read, and 8 exhibits shown.

At two meetings of the Clay Minerals Group, held in London and Plymouth, respectively, fifteen papers were read: the average attendance was 35.

Publications. Three numbers of the Mineralogical Magazine have been issued during 1963, and the fourth (December 1963) is expected during November 1963. The four numbers (260–263) will contain Proceedings for 1962 (20 pages), 33 papers, 16 short communications, 18 book reviews in 392 pages, with 1 plate and 88 text figures. Three numbers, including the December 1962 number (vol. 15, no. 8), of the Mineralogical Abstracts have been issued during 1963, and the fourth is in the course of printing. The December 1962 number (the index to volume 15) contained the Author's Index (with 7,400 items in 47 pages) and the Subject Index (with 14,000 paged references and 1,600 unpaged cross references in 53 pages); this number of 23,000 items in all is contained in 110 pages. The March, June, and September 1963 numbers contain 2779 abstracts and 50 book notices in 322 pages.

Two numbers (28 and 29) of the Clay Minerals Bulletin have been issued during the year.

Financial. The accounts for the calendar year 1962 are published in *Mineralogical Magazine* no. 262 (September). During the year income from the General Fund exceeded expenditure by £400. 1*s*. 4*d*. The excess of assets (exclusive of the Society's library and stock of publications) over liabilities at 31 December 1962 was £6791. 18*s*. 4*d*. compared with £6509. 18*s*. 8*d*. at the close of 1961.

The cost of the first two numbers of the *Mineralogical Magazine* published in 1963 was £1126. 15*s*. 2*d*; and the first number of *Mineralogical Abstracts* was £967. 17*s*. 8*d*.

Sales of publications so far during 1963 are as follows: *Mineralogical Magazine* £3782. 2*s*. 3*d*.; *Mineralogical Abstracts* £2451. 0*s*. 10*d*; X-ray monograph £1566. 18*s*. 9*d*.; D.T.A. monograph £191. 0*s*. 3*d*.

Grant from the Nuffield Foundation. The sum of £147. 16*s*. 2*d*. was received from the Nuffield Foundation for the cost of advertising *Mineralogical Magazine* and *Mineralogical Abstracts*.

The balances at the Society's Bankers and in the Post Office Savings Bank on 31 October 1963 were: General Fund £7430. 15*s*. 7*d*., Miers Memorial Fund £262. 17*s*. 3*d*.

General. (i) As a result of the examination of the development of new fields of interest to the Society (June 1962) two committees have been set up. They are the Committee on Ore Mineralogy (Chairman, Prof. W. A. Deer), and the Committee on Geochemistry (Chairman, Prof. L. R. Wager). The respective aims of the committees are to further the study of opaque and semi-opaque minerals, including coals, and to advance the knowledge of geochemistry, particularly in relation to mineralogy, crystallography, petrology, and the study of meteorites.

(ii) It was decided to dedicate a volume of the Magazine to Prof. C. E. Tilley, having regard to his contributions and influence in the fields of mineralogy, crystallography, and petrology. Over fifty co-workers and former students have accepted invitations to contribute to the volume. The editors, Prof. W. A. Deer and Dr. S. R. Nockolds, expect this commemorative volume to run to over 300 pages.

(iii) Prof. S. Tomkeieff's visit to Russia to meet scientists and abstractors was supported by the Council to the tune of the Moscow-held royalties arising from the Russian translation of the Society's monograph on X-ray identification of clay minerals.

(iv) The sale and reprinting of back numbers, Nos. 1–87, of the Magazine has been placed in the hands of Messrs. William Dawsons. (These are the volumes issued prior to the initiation of the *Abstracts* in 1921.)

After the adoption of the Annual Report, a vote of thanks to the Geological Society for the use of their rooms was carried with acclamation.

The Scrutineers reported the result of the ballot, and the President read the list of Officers and Council elected for the session 1963–64:

President: Prof. J. H. Taylor, M.A., B.Sc., Ph.D., F.G.S., F.R.S.
Vice-Presidents: K. C. Dunham, D.Sc., Ph.D., S.D., M.I.M.M., F.G.S., F.R.S.; M. H. Hey, M.A., D.Sc.
Treasurer: A. F. Seager, B.Sc., Ph.D., A.K.C., F.G.S.
General Secretary: J. R. Butler, M.A., Ph.D., F.G.S.
Foreign Secretary: W. Campbell Smith, C.B.E., M.C., T.D., M.A., Sc.D., F.G.S.
Editor of the Mineralogical Magazine: M. H. Hey, M.A., D.Sc.
Editor of Mineralogical Abstracts: J. Phemister, M.A., D.Sc., F.R.S.E., F.G.S.

Ordinary Members of Council

T. W. Bloxam, B.Sc., Ph.D., F.G.S.
T. Deans, M.A.
R. A. Howie, M.A., Ph.D.
D. G. Murchison, B.Sc., Ph.D.
R. Phillips, B.Sc.
W. J. Wadsworth, M.A., D.Phil., F.G.S.
S. H. U. Bowie, B.Sc.
W. A. Deer, M.Sc., Ph.D., F.R.S., F.G.S.
A. P. Millman, Ph.D., D.I.C., A.R.S.M., B.Sc., F.G.S.
R. W. B. Nurse, D.Sc., F.Inst.P.
E. Stumpfl, Dr. rer.nat.
J. Zussman, M.A., Ph.D.

The retiring President, Prof. L. R. Wager, in welcoming Prof. J. H. Taylor to the Chair, thanked the Officers of the Society for their help during his period of office, and expressed the hope that Prof. Taylor's Presidency would be a happy one.

Prof. Taylor, in reply, thanked the Society for his election, and proposed a vote of thanks to the retiring President and Ordinary Members of Council, which was carried with acclamation.

The following exhibits were shown:

1. Cinnabar from Masson Hill, Matlock, Derbyshire: by Mr. A. W. G. Kingsbury.

2. Bismutoferrite from South Terras mine, St. Stephen-in-Brannel, Cornwall: by Mr. A. W. G. Kingsbury.

3. The quartz wedge and sensitive-tint plate and colour blindness: by Dr. F. E. Tocher.

The following papers were read and discussed:

1. Four new uranium-lead ages from Cornwall: by Mr. R. P. C. Pockley.

2. Additional uranium-lead ages from South-West England: by Mr. A. G. Darnley, Dr. T. H. English, Mrs. O. Sprake, and Dr. E. R. Preece.

Five new analyses by the complete lead method have been obtained on concentrates prepared from uraniferous vein material occurring in south-west England. The following results have been calculated from the 206/238 ratio:

Uraninite	South Crofty, Cornwall	277 ± 11 My.
Uraninite	Geevor, Cornwall	223 ± 5 My.
Pitchblende-coffinite	King's Wood, Devon	209 ± 5 My.
Pitchblende	Wheal Bray, Cornwall	166 ± 8 My.
Pitchblende-coffinite	South Terras, Cornwall	47 ± 2 My.

In addition two chemical analyses of pitchblende-coffinite concentrates from Geevor have provided ages of 40 and 45 My. respectively. The significance of the results was discussed.

3. The distinction of mullite and sillimanite by electron diffraction technique: by Dr. D. G. W. Smith and Dr. J. D. C. McConnell.

Electron diffraction photographs of a number of natural and *synthetic mullites* and a standard sillimanite have been obtained, and interpreted using diffraction data due to Agrell and Smith. Intimate association of sillimanite and mullite occurs in the breakdown of muscovite in a thermal metamorphic aureole (Sithean Sluaigh, Strachur, Argyllshire). The position and diffuseness of mullite reflections ($h0l$) with $l = \frac{1}{2}$ have been studied. These maxima are symmetrically disposed in pairs about the positions of sillimanite maxima with l odd. They lie on a^* rows and show variable separation in different specimens studied. These diffraction conditions are closely analogous with those observed in the intermediate plagioclases (paired 'e' maxima) and in nepheline, and a similar explanation is envisaged in terms of anti-phase domain structure.

4. The mineralogy and chemistry of the nickel carbonates: by Dr. Thelma Isaacs (vol. 333, p. 663).

The following papers were taken as read:

1. The stereographic projection: a procedural revision in crystallography: by Dr. M. J. Oppenheim (vol. 33, p. 697).

2. A simple single-axis rotation apparatus: by Dr. N. H. Hartshorne (vol. 33, p. 693).

3. The unit-cell of aenigmatite: by Dr. C. H. Kelsey and Dr. D. McKie (vol. 33, p. 986).

4. Notes on a new occurrence of stilpnomelane from North Wales: by Dr. D. W. Matthews and Dr. J. H. Scoon (vol. 33, p. 1032).

5. The nomenclature of the natural alloys of osmium and iridium: by Dr. M. H. Hey (vol. 33, p. 712).