PROCEEDINGS

OF THE

MINERALOGICAL SOCIETY

(1947)

EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., January 23, 1947, at 3.15 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

THE following were provisionally elected Ordinary Members of the Society: Hans Carl Eisenreich Clausen, Ernest Gordon Cox, Reginald John Davies, Nordau Roslyn Goodman, Armand Hacquaert, David Bruce Honeyborne, Robert Cameron Mackenzie, Mrs. Morna Mathias, Miss Helen Dick Megaw, Charles William Pegg, and George Forbes Walker.

The resignation of John Alfred Newton Friend was accepted.

The committee appointed to consider publication costs made the following recommendations, which were adopted:

- (1) That the price of all stocks of the *Mineralogical Magazine* from the commencement of vol. 19 should be doubled from June 1, 1947 (single numbers 12s. each, four consecutive numbers 40s.). That single numbers of vols. 1–18 should be 5s. each net, with discount of 20 % to members. That indexes (vols. 1–10 and 11–20) should be 5s. each net.
- (2) That no change should be made in membership subscription until all other measures to remedy the financial position had been shown to be ineffective.
- (3) That the Treasurer make application to the Royal Society for a grant of £300 from the Parliamentary Grant-in-aid for Scientific Publications, to cover deficits for the years 1946 and 1947.
- (4) That no wrappers be used for reprints of papers of 4 pages or less. The exchange list for the *Mineralogical Magazine* was revised in detail.

Reports were received from the Treasurer and the Editor. The Treasurer presented the audited accounts for 1946, which were approved.

The Secretary and Dr. K. C. Dunham reported that provisional arrangements had been made for a field meeting based on Penrith on April 14–18, with visits to a west Cumberland haematite mine, Carrock Fell wolfram mine, a baryte mine on the Pennine escarpment, and a gypsum mine in the Vale of Eden.

The Secretary reported that several requests had been received from institutions wishing to join the Clay Minerals Group. Since the Society had no institutional membership it was agreed that information concerning the Group be made available to institutions and firms at an annual charge of 7s. 6d.

The Secretary suggested that the sequence of special meetings held in the early summer during the past few years should be continued, and it was agreed to ask Professor S. Tolansky to lecture on 'The topography of crystal faces'.

GENERAL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., January 23, 1947, at 5 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

Forty-six Members and seventeen Visitors were present.

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

The following exhibits were shown:

- 1. Goethite, forming casts of large quartz crystals in siliceous matrix; and bundle of rutile needles projecting from the prism face of a quartz crystal; from the collection of Brazilian quartz crystals presented to the Department of Mineralogy, British Museum (Natural History): by Mr. E. E. S. Brown.
 - 2. Cuspidine from Skye: by Prof. C. E. Tilley (vol. 28, p. 90).
- 3. Brasilianite, the new phosphate gem mineral described in 1945, from near Arrasuahy, Minas Geraes, Brazil: by the Department of Mineralogy, British Museum (Natural History).
 - 4. Galena in pectolite from High Force, Teesdale: by Mr. R. C. Walsh. The following papers were read and discussed:
- 1. The occurrence of nigerite, a new tin mineral in quartz-sillimanite-rocks from Nigeria: by Mr. R. Jacobson and Mr. J. S. Webb (vol. 28, p. 118).
- 2. Nigerite, a new tin mineral: by Dr. F. A. Bannister, Dr. M. H. Hey, and Mr. H. P. Stadler (vol. 28, p. 129).
 - 3. The occurrence of artificial kalsilite and allied potassium aluminium

silicates in blast-furnace linings: by Dr. G. R. Rigby and Mr. H. M. Richardson (vol. 28, p. 75).

- 4. Ankerites and chalybites from the northern Pennine orefield and the north-east coalfield: by Dr. J. A. Smythe and Dr. K. C. Dunham (vol. 28, p. 53).
 - 5. Crystals of artificial cassiterite: by Dr. J. J. Frankel (vol. 28, p. 111).
 - 6. X-ray studies of silica minerals: by Dr. J. Novák.

CLAY MINERALS GROUP.

Held in the Apartments of the Geological Society, Burlington House, London, W., January 24, 1947, 10 a.m. and 2.30 p.m.

Dr. W. CAMPBELL SMITH and afterwards Dr. G. W. BRINDLEY, in the Chair.

This inaugural meeting, attended by about one hundred Members and Visitors, was opened with an address from Prof. J. D. Bernal. Dr. G. W. Brindley was elected Chairman, Dr. D. M. C. MacEwan, Honorary Secretary.

The following papers were read and discussed (Clay Minerals Bulletin, no. 1, October 1947):

- 1. The mineralogy of some Aberdeenshire soil clays; by Mr. G. F. Walker.
- Investigations on clays at the Macaulay Institute for Soil Research, Aberdeen by Dr. R. C. Mackenzie.
- 3. Research on foundry bonding materials: by Dr. J. White.
- Recent work on clays and clay minerals of the Wagingen group: by Prof. C. H. Edelman,
- 5. Electron micrographs of various montmorillonites: by Dr. Barbara S. Emödi.
- A review of clay mineral research in the University of Leeds: by Prof. A. L. Roberts and Dr. G. W. Brindley.
- Some problems connected with the retention of ions by clay constituents: by Dr. R. K. Schofield.
- 8. Studies on nickel hydroxide: by Mlle Jacqueline Longuet.
- Work carried out at the Laboratoire Central des Services Chimiques: by Mons. J. Méring.
- 10. Observations on the formation and evolution of clays: by Mons. S. Hénin.
- Application of differential thermal analysis to the study of clay soils: by Mlle S. Caillère.
- 12. Current research work on the clay n inerals at the University of Granada, Spain (presented by Sr. A. Hoyos de Castro):
- (a) Physico-chemical properties of a bentonite from Spanish Morocco: by Sr. A. Hoyos de Castro and Sr. M. Pascual.
- (b) Identification of clay minerals by colour reactions: by Sr. A. Hoyos de Castro and Sr. J. Acosta.
- (c) Colloid-chemical identification of clay minerals; Sr. A. Hoyos de Castro and Sr. M. Pascual.

- (d) Study of 'adsorbed water' in clay minerals: by Sr. E. Gutierrez Ríos and Sr. J. L. Martin Vivaldi.
- (e) Study of the physico-chemical properties of clay minerals in non-aqueous media: by Sr. E. Gutierrez Ríos and Sr. F. Gonzales Garita.
- (f) Study of bentonites from Spanish Morocco: by Sr. E. Gutierrez Ríos and Sr. L. Hernando.
- 13. The influence of the clay fraction on the engineering properties of soil, with some suggestions for future research: by Mr. H. E. Clare.
- 14. Note on work in progress at the Swedish Cement and Concrete Research Institute: by Herr E. Forslind.
- 15. Electron microscopy: by Prof. Nils Hast.

EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., March 27, 1947, at 3.15 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

The following were provisionally elected Ordinary Members of the Society: George Edward Bessey, Thomas Herbert Henry Victor Bevis-Smith, William Frank Bradley, Basil Butterworth, Stephen Edward Coomber, William Davies, Miss Barbara Susan Emödi, Robert Bury Ferguson, Sydney A. Forman, Enrique Gutierrez Ríos, Nils Bernhard Hast, Angel Hoyos de Castro, B. Varadaraja Iyengar, Sosale Venkatanarasimha Parthasarating Iyengar, James William Jeffery, Aksel Tovborg Jensen, Thomas Norman Jewitt, Jacob Johan de Lange, Alexander Muir, Jrarendra Nath Mukherjee, Thomas Webster Parker, Robert Martin Raikes, George Thomas Raine, George Reginald Rigby, Mysore Subbanna Sadashivaiah, Anders Lennart Silfverberg, Augusta Marie Unmack, Gilbert Harry Whiting.

The following deaths were reported: Prof. G. Aminoff, Ordinary Member; Sir John S. Flett, past-President; and Prof. V. M. Goldschmidt, Honorary Member.

The resignation of Dr. C. M. Cook was accepted.

Reports were received from the Treasurer and the Editor. The question of increasing the number of copies of the *Mineralogical Magazine* to be printed was discussed, and if it could be arranged it was agreed that the number should be 1000, commencing with the new volume 28 in March 1947. It was also agreed to obtain estimates for reprinting no. 192 (March 1946) which is now out of print.

The Society was invited to nominate delegates to the XVIIIth International Geological Congress (1948), and the Editor and the General Secretary were appointed.

GENERAL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., March 27, 1947, at 5 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

Thirty-four Members and four Visitors were present.

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

The following exhibit was shown:

Erythrite from Rotherhope Fell mine, Cumberland: by Mr. D. G. A. Whitten.

The following papers were read and discussed:

- 1. Subcalcic ferroaugite from Mount Arthur, East Griqualand: by Dr. A. Poldervaart (read by Prof. F. Walker) (vol. 28, p. 159).
- 2. The relationship of orthopyroxene to pigeonite: by Dr. A. Poldervaart (read by Prof. F. Walker) (vol. 28, p. 164).
- 3. Pyroxenes, amphibole, and mica from the Tiree marble: by Dr. A. F. Hallimond (vol. 28, p. 230).
- 4. On tilleyite and its associated minerals from Carlingford, Ireland: by Dr. S. R. Nockolds, with chemical analyses by H. C. G. Vincent (vol. 28, p. 151).

SPECIAL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., May 22, 1947, at 5 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

Twenty-four Members and nineteen Visitors were present.

Prof. S. Tolansky delivered a lecture: An interferometric survey of the micas (vol. 28, pp. 137, 146).

EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., June 26, 1947, at 3.15 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

The following were provisionally elected Ordinary Members of the Society: William Francis Davidson, Ralph Early Grim, Henrich Neumann, Miss Cecilia Mary Pelmear, Arie Poldervaart, Isaac Stephen, Sir James Walton.

The death of Sir Thomas H. Holland, Foreign Secretary and a past-President, was announced.

Reports were received from the Treasurer and the Editor; the latter stated that 1000 copies of no. 196 (March 1947) of the *Mineralogical Magazine* had been printed.

The list of Officers and Council for 1947–48 was considered. The following were due to retire: Vice-President, Prof. W. R. Jones; Ordinary Members of Council: Mr. A. B. Broughton-Edge, Dr. K. C. Dunham, Prof. W. T. Gordon, and Dr. D. Williams. The following were nominated for election at the Anniversary Meeting on November 6, 1947: Vice-President: Mr. B. W. Anderson; Ordinary Members of Council: Dr. G. W. Brindley, Dr. F. Dixey, Dr. L. Hawkes, and Prof. W. Q. Kennedy.

The following dates for ordinary meetings in 1948 were approved, subject to confirmation by the Geological Society: Thursdays, January 22, April 1, June 24, and November 4. It was also agreed that an extra meeting should be convened if possible at the time of the XVIIIth International Geological Congress.

It was agreed that the Mineralogical Society should present a formal written address at the Centenary of the Chemical Society in July.

GENERAL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., June 26, 1947, at 5 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

Twenty-nine Members were present.

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

The following exhibit was shown:

An apparatus for traversing thin sections of rocks for X-ray diffraction studies: by Dr. A. E. J. Vickers and Mr. R. H. Ronnebeck.

The following papers were read and discussed:

- 1. The geochemistry of radiogenic strontium: by Dr. L. H. Ahrens (read by Dr. S. R. Nockolds) (vol. 28, p. 277).
- 2. Ganophyllite and other rare minerals from Benallt mine, Rhiw, Carnarvonshire: by Dr. W. Campbell Smith.
- 3. Chemical analysis of ullmannite from New Brancepeth, Co. Durham: by Dr. J. A. Smythe (vol. 28, p. 173).

EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., November 6, 1947, at 3.15 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

The following were provisionally elected Ordinary Members of the Society: José Maria Albareda Herrera, Eric Charles Allen, Arthur Baker, Thomas Fulcher Bates, Rev. Stanley Graham Brade-Birks, George Brown, John Russell Butler, Paul Marie Jean Canal, William Marshall Collier, Arthur John Gaskin, Miss Jewell Jeannette Glass, John Norman Haresnape, Earl Ingerson, Jan Kutina, Mrs. Marie Louise Lindberg, Anthony Philip Millman, Arthur Loten Roberts, Robert Hugh Stannus Robertson, Clarence Samuel Ross, Richards Atwell Rowland, Rollin Elbert Stevens, David Scott Watt, James White, Tom Alec Whitehouse, Frans Erik Wickman.

The deaths of Prof. W. W. Watts, past-President, and Dr. A. K. Coomaraswamy, Life Member, were reported.

Reports were received from the Treasurer and the Editor. The draft of the Annual Report of Council for 1946–47 was read by the Secretary and was approved.

Dr. K. C. Dunham and Dr. L. Hawkes were appointed auditors for 1948.

The Secretary was instructed to call a Special General Meeting of the Society preceding the Ordinary General Meeting on January 22, 1948, to consider the alteration of Bye-law 5.

Dr. N. F. M. Henry, Dr. M. H. Hey, and Prof. F. C. Phillips were nominated to serve on the British Nomenclature Sub-committee of the International Union of Crystallography.

GENERAL (ANNIVERSARY) MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., November 6, 1947, at 5 p.m.

Dr. W. CAMPBELL SMITH, President, in the Chair.

Forty-nine Members and thirteen Visitors were present.

Dr. D. M. C. MacEwan and Dr. R. W. Pocock were appointed as scrutineers of the voting papers for the election of Officers and Council.

The elections of 25 Ordinary Members of the Society provisionally made by the Council were confirmed.

The General Secretary read the following:

ANNUAL REPORT OF THE COUNCIL FOR 1946-47.

Membership.—The total membership on October 31, 1947, was 351 against 303 on October 31, 1946. Sixty-five new members have been elected during the year. The Society has lost by death one Honorary Member, three past-Presidents, one other Life Member, and one Annual Subscriber. Two members have resigned. Nine members resident in former enemy or enemy-occupied countries have been removed from the List of Members. Of these contact has been made with four and they have been offered reinstatement without re-election when they are in a position to pay subscriptions. On October 31 the membership consisted of 7 Honorary Members, 344 Ordinary Members of whom 55 are Life Members.

Meetings.—The total attendance at the five meetings held during the session 1946/47 was 180 members and 47 guests, giving an average of 45 per meeting. At four of these meetings 15 papers have been read, 3 taken as read, and 11 exhibits shown. At the fifth meeting Professor S. Tolansky gave a lecture entitled: 'An interferometric survey of the micas' the contents of which have been published in the form of two papers in the Mineralogical Magazine.

The Field Meeting based on Penrith and including visits to six underground properties was attended by 21 members and one visitor from overseas.

Clay Minerals Group.—A successful inaugural meeting of the newly formed Clay Minerals Group was held in January, 1947, and was attended by about 100 members and visitors, and representatives were present from 7 countries. Membership of the Group now stands at 75 and 14 non-member subscribers.

The Group has decided to issue at irregular intervals a Clay Minerals Bulletin. The first number issued in October contains summaries of the papers read at the January meeting. The Group has also formed a sub-committee to collate data on clay minerals and to consider the formation of a collection of standard clay minerals.

Publications.—Four numbers (195–198) of the Mineralogical Magazine have been issued during the year. Of these three have contained the Proceedings in 13 pages, 22 papers in 174 pages with 13 plates and 37 text-figures, and 503 abstracts in 144 the pages. The remaining number contained the Index to volume 27 in 94 pages.

With the commencement of volume 28 the Magazine returned to its pre-war style. Financial.—The accounts for the calendar year 1946, published in the March number of the Magazine, showed an excess of assets (exclusive of the stock of the Magazine and the Society's other effects) over liabilities of £3417. 2s. 6d. against £3363. 1s. 0d. at the close of 1945. The value of the securities standing in the name of the Custodian Trustee was on December 31, 1946: General Reserve £2772. 0s. 0d., Miers Memorial Fund £435. 0s. 0d.

The balances standing to the credit of the General Purposes Account at the close of 1946 amounted to £494. 18s. 2d. against £647. 16s. 0d. at the close of 1945, and that standing to the credit of the Miers Memorial Fund £15. 4s. 2d. against £17. 16s. 7d. There were no outstanding liabilities at the close of 1946 against liabilities amounting to £10. 4s. 0d. at the close of 1945.

The receipts have been satisfactory. For the period January 1 to October 31 the Entrance Fees and Annual Subscriptions received show a marked increase over those for the corresponding period in 1946, due to the exceptionally large increase in new members. The receipts from the Society's publisher for sales of the *Mineralogical Magazine* during the year April 1, 1946, to March 31, 1947, also show a

substantial increase, being £361. 5s. 10d. against £224. 18s. 11d. in 1946. The net receipts from sales by the Custodian of the Stock of the Magazine in 1946 totalled £39. 10s. 0d. against £125. 11s. 2d. in 1945, when these receipts were abnormally high. The gross receipts from this source from January 1 to October 31, 1947, totalled £78. 6s. 9d.

Nevertheless, the financial position of the Society is causing the Council grave concern. The charges for printing and illustrations have been steadily rising, and the increase in the cost of production of the Magazine more than offsets the increase in receipts referred to above. In 1946 the outgoings on the Magazine totalled £699. 18s. 1d. against £446. 0s. 9d. in 1945. The expenditure on the four numbers (nos. 192–195) due for issue in 1946 was £695. 18s. 1d. against £388. 14s. 0d. in respect of the previous four numbers. Three numbers have been issued since the beginning of the current year, which have cost £692. 15s. 9d. exclusive of the cost of authors' separate copies from the June and September numbers, and it is estimated that the figure for the four numbers issued and to be issued in 1947 will be in the neighbourhood of £1000.

In an attempt to meet this increased expenditure the Council in January last decided to raise substantially the charges for the Magazine, both the subscription rate and the sale price of individual copies of current and back numbers. These increases came into force on June 1, 1947, too late to affect this year's receipts from the Society's publisher, and have not as yet produced any marked effect on the receipts from sales by the Custodian of Stock of the Magazine. The full effect of these changes cannot at present be estimated, but it seems clear that the Council of the Society must seek and consider other means of increasing the Society's income.

The Society has received through the Royal Society a grant of £100 from the Government Grant-in-aid for Scientific Publications.

Composition Fees totalling £42 were received during 1946. Since January 1 further Composition Fees totalling £126 have been received. All have been invested.

The balances at Bankers, in the Post Office Savings Bank, and in hand on October 31 were: General Purposes Account £660. 15s. 7d., Miers Memorial Fund £29. 6s. 2d. The bills for the March, June, and September numbers of the Magazine have been paid, and also that for authors' separate copies from the March number. The outgoings for the remainder of the year are estimated at approximately £347 and the receipts at approximately £102. 10s. 0d. On this basis the cash available for future use (exclusive of that standing to the credit of the Miers Memorial Fund) at the close of the year should be about £416 against £494. 18s. 2d. brought in from 1946.

On the proposal of Mr. E. H. Beard, seconded by Mr. H. P. Rooksby, the adoption of the Annual Report was carried unanimously.

A vote of thanks to the Geological Society for the use of its apartments was proposed by Mr. P. A. Sabine and seconded by Sir James Walton, and carried with acclamation.

A vote of thanks to the retiring Vice-President and Ordinary Members of Council was proposed by Mr. G. E. Howling and seconded by Mr. G. S. Gowing, and carried unanimously.

The scrutineers reported that 39 ballot papers had been returned and

[continued on p. lxiv

MINERALOGICA.

ABSTRACT OF RECEIPTS AND PAYMENT

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SOCIETY

FOR THE YEAR ENDING DECEMBER 31, 1947

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K. C. Dunham A. J. Bull, Hon. Treasurer. L. Hawkes January 19, 1948.

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Excess of Assets over Liabilities					3896	6
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ENDING DECEMBER 31,	1947											
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Cash at Bankers		•	•		•	•	•		٠_	10	14	_0
									_	£231	0	0
Examined and compared with Ve	nuchers a	nd fou	nd cor	rect					-		_	
-							_					
January 19, 1948.	C. Dunh L. Hawk	ES A	uditors	١.	4	A. J.	. Bui	L, J	lon	. Tres	ısur	er.
SHEET												
:1, 1947												
	A	SSETS					£	8.	d.	£	8.	d.
3y General Funds:— Investments at Broker's Valua 1. £1685 3½% War Loan, 19 2. £105 4% Consolidated Lo 3. £100 4% Funding Loan, 4. £146. 10s. 0d. 3% War Le 5. £255 3% Defence Bonds; 6. £250 3% Savings Bonds, 7. £275 2½% Consolidated S	52 and a ban, 1957, 1960–90, ban, 1955 at par 1960–70,	at 108 at 112 -59, at at 101	3% % 102%	· · · · · · · · · · · · · · · · · · ·			1735 108 112 149 255 253 225	$\begin{array}{c} 8 \\ 0 \\ 15 \end{array}$	0 0 0 6 0 0			
Sundry Debtors—							-		_	2839	1	6
Oxford University Press (Pu (a) For sales of publicatio (b) For Advertisement Fe	ns, Apriĺ					•	563 6	11 10	3 7	570	1	10
Entrance Fees in Arrear .			_		_					11	11	0
Annual Subscriptions in Arrea	r, estimat	ed to	realize							10	_	Ŏ
Balances— 1. At Bankers on Current A 2. In Post Office Savings Ba 3. In Office		:	:	:	:	:	263 482 1		10		•	•
Special Funds:— Miers Memorial Fund— Investments £435 3% Defence Bond	s at par						435	0	0	748	3	0
Balance— At Bankers on Current Ac				•			3 0	15	2			
* Including £10 14s. 0d. bein he credit of the Composition Fe					nding	to				465 £4645	15 2	6
NT / (D) 1 (/1 '	1. 1		C .				, 1 T					41.

Note:—The value of the periodicals retained after the disposal of the Library, that of the insold stock of Publications, and that of the Society's other effects are not included in the bove Assets.

rebruary 27, 1948.

examined and that the following list as nominated by the Council had been approved and were accordingly duly elected for 1947-48.

President. Lt.-Col. W. Campbell Smith, M.C., T.D., M.A., Sc.D., F.G.S.
Vice-Presidents. C. E. N. Bromehead, B.A., F.G.S.; Mr. B. W. Anderson, B.Sc., F.C.S.

Treasurer. Dr. A. J. Bull, M.Sc., Ph.D., F.G.S.

General Secretary. Dr. G. F. Claringbull, B.Sc., Ph.D., F.G.S.

Foreign Secretary. Mr. F. N. Ashcroft, M.A., F.G.S., F.C.S.

Editor of the Journal. Dr. L. J. Spencer, C.B.E., M.A., Sc.D., F.R.S.

Ordinary Members of Council.

Dr. M. H. Hey, M.A., D.Sc.,
Dr. J. H. Taylor, B.Sc., Ph.D., F.G.S.
Dr. A. E. J. Vickers, M.Sc., Ph.D.,
F.R.I.C., F.G.S.
Prof. L. R. Wager, M.A., Sc.D., F.R.S.
Mr. T. Deans, M.A., F.G.S.
Dr. W. A. Deer, M.Sc., Ph.D., F.G.S.
Mrs. Kathleen Lonsdale, D.Sc., F.R.S.

Mr. R. C. Spiller, M.A.
Dr. G. W. Brindley, M.Sc., Ph.D.,
F.Inst.P.
Dr. F. Dixey, O.B.E., D.Sc., F.G.S.
Prof. W. Q. Kennedy, D.Sc., Ph.D.,
F.G.S.

The following exhibits were shown:

- 1. A new two-circle optical goniometer: by Mr. E. S. Marsh on behalf of Unicam Instruments, Ltd., Cambridge.
- 2. The Berman torsion microbalance for the determination of specific gravity of minute specimens: by Mr. E. H. Beard.
- 3. Photographs taken on the Penrith excursion: by Dr. O. Adamson, Dr. G. F. Claringbull, and Mr. T. Deans.

The following papers were read and discussed:

- 1. The occurrence of an orthorhombic, high-temperature form of Ca₂SiO₄ in the Scawt Hill contact zone, and as a constituent of slags: by Prof. C. E. Tilley and Mr. H. C. G. Vincent (vol. 28, p. 255).
- 2. Earlier stages in the metamorphism of siliceous dolomites: by Prof. C. E. Tilley (vol. 28, p. 272).
- 3. Note on the occurrence of anatase in some fireclay deposits: by Dr. G. W. Brindley and Dr. K. Robinson (vol. 28, p. 244).
- 4. An improved polarizing microscope, III. The slotted ocular and the slotted objective: by Dr. A. F. Hallimond and Mr. E. W. Taylor (vol. 28, p. 296).
- 5. Biographical notices of mineralogists recently deceased: by L. J. Spencer (vol. 28, p. 175).