### PROCEEDINGS

#### OF THE

### MINERALOGICAL SOCIETY

### EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., January 19, 1926, at 4 p.m.

Prof. W. W. WATTS, F.R.S., President, in the Chair.

The deaths of Mr. R. H. Solly and Mr. J. P. Wintringham were announced.

Mr. George MacDonald Davies and Mr. Hugh Alexander Ford were provisionally elected Ordinary Members of the Society.

The audited accounts and balance-sheet for the year ending December 31, 1925, submitted by the Treasurer, were approved.

In accordance with bye-law 7 it was decided to remove from the list of members the names of three members who had been reported to the Council at the January meeting last year.

A letter from Messrs. Simpkin, Marshall, Hamilton, Kent & Co. was read, in which they announced their decision to discontinue the periodical branch of their business and that in consequence they could no longer act as publishers to the Society. The Editor was directed to write accepting their resignation and thanking them for their past services to the Society. It was decided to accept the terms offered by Mr. Humphrey Milford, Oxford University Press, for publishing the Journal.

The Committee appointed to consider the celebration of the Jubilee of the Society submitted a provisional programme. This was approved, and it was decided further that there should be an informal dinner on February 2, at which members would have the opportunity of discussing the arrangements for the formal celebration in September. Messrs. A. Brammall and A. Russell were appointed as additional members on the Jubilee Committee. The Secretary was instructed to send, on February 3, letters of congratulation to Messrs. B. Kitto, A. Liversidge, and J. L. Wills, who had been members of the Society since 1876.

#### GENERAL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., January 19, 1926, at 5.30 p.m.

Prof. W. W. WATTS, F.R.S., President, in the Chair.

Twenty-three Members and five Visitors were present.

The elections of Messrs. G. M. Davies and H. A. Ford were confirmed.

The President announced the provisional programme which had been approved for the celebration of the Jubilee of the Society.

The following papers were then read:-

- Some mineralogical transformations in crystalline schists: by Dr.
   E. Tilley (p. 34).
- 2. Gold and silver in the Dartmoor granite: by Dr. A. Brammall (p. 14).
- 3. On the chemical classification of the mica group. II. The basic micas: by Mr. A. F. Hallimond (p. 25).
- 4. The construction and use of an X-ray goniometer: by Mr. G. Greenwood (p. 1).

#### EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., March 16, 1926, at 4 p.m.

Prof. W. W. WATTS, F.R.S., President, in the Chair.

The death of Dr. F. Krantz, a former member of the Society, was announced.

Prof. William George Fearnsides and Mr. Thomas Crawford Phemister were provisionally elected Ordinary Members of the Society.

Arrangements made for the Jubilee Celebration in September were reported.

#### GENERAL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., March 16, 1926, at 5.30 p.m.

Prof. W. W. WATTS, F.R.S., President, in the Chair.

Fifteen Members were present.

The elections of Prof. W. G. Fearnsides and Mr. T. C. Phemister were confirmed.

The following papers were read:-

- 1. Molecular volume relations in the mica group: by Mr. A. F. Hallimond (p. 195).
- 2. Smithsonite from the Rhodesia Broken Hill mines: by Mr. E. D. Mountain (p. 51).
- 3. The identity of the Cobija and Lampa meteoric stones: by Mr. E. D. Mountain (p. 87).
- 4. On garnet in pelitic contact-zones: by Dr. C. E. Tilley (p. 47).

  Mr. Mountain exhibited a specimen and microscope slides in illustration of his paper on meteorites.

#### EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., June 15, 1926, at 4 p.m.

Sir Thomas Holland, F.R.S., Vice-President, in the Chair.

The deaths of Prof. W. J. Lewis, Past-President and for many years Librarian of the Society, Mr. W. B. Giles, Mr. H. B. Guppy (a former member), and Mrs. F. Henson (a former member) were announced.

Mr. Gerald Andrew, Mr. Alan Stuart, and Mr. Frank Coles Phillips were provisionally elected Ordinary Members of the Society.

The Treasurer reported that he had represented the Society at the meeting convened by the British Association and the Society of Antiquaries on the question of the exemption of Scientific Societies from the payment of Income Tax.

A new scheme and scale of charges for sets of the Journal, vols. I-X and XI-XX, proposed by the Treasurer, were approved. It was also decided that copies of numbers of which the stock was reduced to 30 or less be reserved for sets and that individual copies of such numbers should not be sold except by special permission of the Council.

The following changes in the list of Officers and Council were approved for recommendation to the Members of the Society: Ordinary Members of Council—Prof. H. L. Bowman, Prof. W. T. Gordon, Dr. H. F. Harwood, and Dr. G. F. Herbert Smith, in place of the four retiring Members of Council, Sir William Bragg, Mr. Barker, Mr. Russell, and Mr. H. G. Smith.

It was decided to hold four meetings next year on the following dates: Tuesdays, January 18, March 15, June 14, and November 1, 1927.

The Editor reported that a prospectus of the 'Mineralogical Magazine' had been prepared and issued by the new Publisher.

It was agreed that the General Index to vols. XI-XX should be issued as a special part without number.

It was decided that 'Tschermaks Mineralogische und Petrographische Mitteilungen' be replaced on the list of exchanges of publications; and that the sale price of the two parts of the 'Proceedings of the Crystallological Society' should be 4s. each.

A letter was read from Sir John Flett, who had represented the Society at the International Geological Congress at Madrid, stating that in future the Congress would devote a special section to Mineralogy and Petrology.

### GENERAL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., June 15, 1926, at 5.30 p.m.

Prof. HAROLD HILTON, Vice-President, in the Chair.

Thirteen Members and one Visitor were present.

The elections of Messrs. G. Andrew, A. Stuart, and F. C. Phillips as Ordinary Members of the Society were confirmed.

The following papers were read :--

- 1. On the nature of berthierite: by Dr. F. L. Stillwell (p. 83).
- 2. On some chloritic minerals associated with the basaltic Carboniferous rocks of Derbyshire: by Mr. S. I. Tomkeieff (p. 73).
- 3. The anomalous optical properties of some new series of isomorphous double tartrates: by Mr. H. E. Buckley (p. 55).
- 4. Sperrylite crystals from the Transvaal: by Dr. L. J. Spencer (p. 94).
- 5. Three South African meteorites: Vaalbult, Witklip, and Queens Mercy: by Dr. G. T. Prior (p. 188).

### EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., November 2, 1926, at 4 p.m.

Prof. W. W. WATTS, F.R.S., President, in the Chair.

The deaths of two Honorary Members, Prof. H. Baumbauer and Prof. C. M. Viola, were announced.

Dr. Conrad Robert Burri, Dr. Harry von Eckermann, Prof. Stefan Kreutz, Dr. Maharajapuram Sitaram Krishnan, and Prof. Charles Palache were provisionally elected Ordinary Members of the Society.

A letter from the Royal Society was read announcing the grant of £100 from the Government Publication Fund in aid of the publication of 'Mineralogical Abstracts'.

The accounts of the Jubilee Entertainment Fund were presented by the Treasurer, and on the motion of Prof. Hutchinson it was decided that the final balance should be applied to printing the account of the Jubilee Celebrations in the Magazine.

A motion by Dr. Prior that the names of certain of the foreign delegates and guests present at the Jubilee Celebrations be brought before the General Meeting for election as Honorary Members was carried.

Mr. A. F. Hallimond and Dr. W. F. P. McLintock were appointed auditors of the accounts for the year ending December 31, 1926.

The draft Annual Report of Council submitted by the Secretary was read and approved.

The Librarian presented a detailed report on the recent overhauling of the Library of the Society.

It was decided that the Royal Society of New South Wales be replaced on the list of exchanges of publications.

# GENERAL (ANNIVERSARY) MEETING.

Held in the Apartments of the Geological Society, Burlington House, London, W., November 2, 1926, at 5.30 p.m.

Prof. W. W. WATTS, F.R.S., President, in the Chair.

Twenty-one Members and four Visitors were present.

The President nominated Messrs. F. H. Butler and E. D. Mountain to act as scrutineers of the voting-papers for the election of Officers and Council. The scrutineers reported that thirty-two voting-papers had been returned to the Secretary, and that the list as nominated by the Council was approved, namely:—

President. Prof. W. W. Watts, Sc.D., LL.D., F.R.S.

Vice-Presidents. Prof. Harold Hilton, M.A., D.Sc.

Sir Thomas H. Holland, K.C.S.I., K.C.I.E., D.Sc., F.R.S.

Treasurer. F. N. Ashcroft, M.A., F.G.S., F.C.S.

General Secretary. G. T. Prior, M.A., D.Sc., F.R.S.

Foreign Secretary. J. W. Evans, C.B.E., D.Sc., LL.B., F.R.S.

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

### Ordinary Members of Council.

H. H. Thomas, M.A., Sc.D., F.G.S. A. F. Hallimond, M.A., F.G.S. Prof. H. L. Bowman, M.A., D.Sc., J. A. Howe, O.B.E., B.Sc., F.G.S. W. Campbell Smith, M.C., M.A., F.G.S. F.G.S. Prof. W. T. Gordon, M.A., D.Sc., C. E. Tilley, Ph.D., B.Sc., F.G.S. F.R.S.E. H. F. Harwood, M.Sc., Ph.D., Prof. P. G. H. Boswell, O.B.E., D.Sc., F.G.S. A.I.C. T. Crook, A.R.C.Sc.I., F.G.S. G. F. Herbert Smith, M.A., D.Sc., F.G.S. L. Hawkes, D.Sc., F.G.S.

The elections of Dr. C. R. Burri, Dr. Harry von Eckermann, Prof. Stefan Kreutz, Dr. M. S. Krishnan, and Prof. Charles Palache as Ordinary Members of the Society were confirmed.

Prof. Reinhard Brauns, Prof. Louis Duparc, and Prof. Friedrich Rinne were, by ballot, elected Honorary Members of the Society.

A vote of thanks to the Geological Society for the use of their rooms, proposed by Mr. Mountain and seconded by Colonel Belaiew, was carried.

The General Secretary then read the following Annual Report of Council:—

During the Session 1925-6 four ordinary meetings have been held (by kind permission) in the apartments of the Geological Society, Burlington House, London, W., at which sixteen papers were read.

Four numbers of the Journal (nos. 111-114), containing thirteen papers and 427 abstracts, have been issued quarterly. No. 111 contains no papers but is made up of indexes to vol. 20 of the Magazine and vol. 2 of the Abstracts, together with a topographical index. The Society is greatly indebted to the Editor for the preparation of these indexes, for which as many as 15,000 slips were required. In no. 112, commencing vol. 21, are included, for the first time in the Magazine, a few advertisements. During the Session, Messrs. Simpkin, Marshall, Hamilton. Kent & Co. having expressed their wish to discontinue the publication of the Magazine, Mr. Humphrey Milford of the Oxford University Press was appointed as the new publisher.

The balance-sheet for the year ending December 31, 1925, showed that the financial position of the Society was sound. The assets (exclusive of the Library and stock of the publications) amounted to £1,541 19s. 8d., with no liabilities. The value of the stock invested in the names of the Trustees of the Society was on that date £1,162 11s. 3d., corresponding to £24 10s.  $8\frac{1}{2}d$ . for each Life-Member. A sum of £100 was granted by the Royal Society from the Government Publication Fund in aid of the publication of 'Mineralogical Abstracts'.

During the Session the Society has lost by removal for non-payment of subscriptions four Ordinary Members; and by death two Honorary Members, namely Prof. H. Baumhauer and Prof. C. M. Viola, and four Ordinary Members, namely Prof. W. J. Lewis, one of the members of the Crystallological Society and a Past-President and Librarian, Mr. R. H. Solly, also one of the members of the Crystallological Society, Mr. J. P. Wintringham, and Mr. W. B. Giles. Twelve Ordinary Members have been elected. The total number of members on November 1, 1926, was 190, of whom ten are Honorary Members. Of the Ordinary Members 47 are Life-Members.

The outstanding event of the Session has been the Celebration of the Jubilee of the Society, a full account of which will appear in the December number of the Magazine. The Celebration, which was attended by ten Delegates appointed by various Mineralogical and Geological Societies and by seven invited foreign guests, was generally agreed to have been an unqualified success. For this success the thanks of the Society are due to all those who contributed so generously to the entertainment fund, and more particularly to Mr. Ashcroft, who undertook the arrangements for the official dinner and the accommodation of the guests; to Mr. Campbell Smith, to whom was entrusted the organization of the conversazione; and to the directors of the two excursions, Prof. Hutchinson and Mr. Arthur Russell.

The Council has to congratulate the Society on its continued scientific activity and prosperity.

On the motion of Dr. Herbert Smith, seconded by Dr. Harwood, the Report was adopted.

The following papers were then read :--

- 1. Schultenite, a new mineral, from South-West Africa: by Dr. L. J. Spencer, with a chemical analysis by Mr. E. D. Mountain (p. 149).
- 2. Aramayoite, a new mineral, from Bolivia: by Dr. L. J. Spencer, with a chemical analysis by Mr. E. D. Mountain (p. 156).
- 3. X-ray examination of aramayoite: by Miss Kathleen Yardley (p. 163).
- 4. The structure of baddeleyite and of prepared zirconia: by Miss Kathleen Yardley (p. 169).
  - 5. The crystalline structure of zircon: by Mr. W. Binks (p. 176).

Specimens and models were exhibited by the authors of the papers, and corroded crystals of quartz from Switzerland by Mr. F. N. Ashcroft.

# MINERALOGICAL

# ABSTRACT OF RECEIPTS AND PAYMENTS

GENERAL PUR-

£754 5 5

	Rec	EIPTS.					£	s.	d.	£	s.	d.
By Balance brought forward from 1925— 1. At Bankers:												
(a) Curren		int.					42	7	4			
(b) Deposi							115		õ			
2. In Office							1	1	4			
										158	8	8
Annual Subscription												
1. Current yea	ır .		•			•	118		0			
2. Arrears		•		•	•	•		6	-			
3. Advance			٠	•	•	•	9	9	0	*0.		^
										134	-	0
Entrance Fees		•	•	•	•	•		•		13	13	0
Composition Fees										31	10	0
Sale of Publication	ıs											
1. During 192												
By Public		£218 9	s. 0d.	, les	s tra	ıde						
	ount £8											
£22	15s. 1d.,	and p	ostag	e £0	0s. 6d	•)	159	5	3			
2. During 192	6 :											
(a) By Pu		(part	vear)	(£10	15s, 6	d.,						
	trade dis											
	ion £1											
£0 0	s. 6d.) .		• ′		· .	•	7	3	2			
(b) By Cu	stodián (	of Stoc	k (£6	0 18s	. 0d. 1	ess						
trad	e discou	ınt £0	6s.	5d., 2	and d	lis-						
trib	ation ch	arges a	£4 19.	s. 8d.	¹) •	•	55	11	11			
										222	0	4
Interest on Invest					- 0							
1. £1,150 5%						:		17	6			
2. £50 5% Nat						ed		10	0			
3. £50 4% Fur	iding Lo	oan in	scribe	a St	ock	•	2	0	0	~-	_	
							_			57	-	6
Deposit Interest		•	•	•	•	•	•	•		10	19	7
Government Grant from Publication Fund administered by the												
Royal Society		•								100	0	0
Transferred from J	ubilee I	Enterta	inme	nt F	und 4	Accou	nt-					
1. For cheque	s used						0	3	4			
2. Contribution	n towar	d cost	of p	ublic	ation	$\mathbf{of}$						
the accou	nt of the	e <b>Ju</b> bil	ee Ce	lebra	tions		25	15	0			
										25	18	4

Includes refund of carriage on set sold in 1925, authorized Nov. I, 1926.
 Includes investments made during the year.

# SOCIETY.

# FOR THE YEAR ENDING DECEMBER 31, 1926.

### POSES ACCOUNT.

PAYMENTS.	£	s.	d.	£	s.	d.
To Printing and distributing the Mineralogical	_	••		-	٠.	
Magazine Nos. 112-115 inclusive and the General Index to Vols. XI-XX (Oxford						
University Press)—	904	10	9			
1. Printing	394 27		3 9			
3. Authors' Copies	22		0			
4. Jubilee Celebration, Reprints		14	6			
5. Printed postal wrappers (renewal of stock) 6. Distribution Charges	1 15	-	0 6			
o. Distribution onargos			_	466	16	0
Miscellaneous Printing (not annual)—		0	e			
<ol> <li>Bye-Laws and List of Members (extra copies)</li> <li>Notice re change of Publishers</li> </ol>	3	2 9	6 6			
3. Notice re General Index to Vols. XI-XX .		13	6			
4. Treasurer's Notices (renewal of stock) .		18	6	_		
Printing and distributing notices of Meetings and				5	4	0
other annual miscellaneous printing		•	٠	14	1	9
Expenses at Meetings, 1926—	1	1	0			
1. Operator of lantern	1	0	ŏ			
				2	1	0
Care of Stock of Publications, 1926 (J. Mugford) .	•		•	1	1	0
Editor's Honorarium, 1926	25	0	0			
Do., Special for Index to Vols. XI-XX	25	0	0	50	0	0
Postage—				•		-
1. Hon. Secretary		17 5	9 6			
2. Editor	4	9	U			
(2000)			_	3	3	3
Bank charges, cheque book, and other small items					10	8
Investments (including composition fees received						
during the year), purchase of £100 5% War Loan Inscribed Stock, commission and stamps				101	6	9
Balance, December 31, 1926—	•	•	•	101	Ŭ	٠
1. At Bankers:	٥	10				
(a) Current account	100	13	3			
2. In Office		7	9			
		•		110	1	0
				£754	5	5
Examined and compared with vouchers and found co	orrect.					
W. F. P. Mo			K )	A 11.4:4	~~~	
A. F. HALI			•	Audit		
January 17, 1927. F. N. ASH	CROF	I, F	ion.	Treasu	ırer	•

							I	IBR	ARY	FU	ND
Rece	IPTS.	•				£	s.	d.	£	s.	d.
By Balance brought forward	fror	n 192	5—								
At Bankers :											
1. Current Account						3	6	6			
2. Deposit Account					•	50	0	0			
									53	-	6
Deposit Interest	•	•	•	•	•	•	•	•		18	3
									£54	4	9

# BALANCE

DECEMBER

LIABILITIES.

£ s. d.

Excess of assets over liabilities . . . . . . 1574 18 9 £1574 18 9

ACCOUNT.	. 1	PAYME	nts.									
											s.	d.
To Binding of Per			•	•	•	•	•	•	•	40	15	9
Balance, December	er 31, 19	926—										
At Bankers										13	9	0
										£54	4	9
Examined and co	mpaređ	with	voucl	hers a	nd fo	und o	correc	et.				
January 17, 192	7.						McLl LLII HCR			Audit Treas		

# SHEET.

31, 1926.

Assets.	£ s.	d.	£	s.	d.
Balances—					
I. General Purposes Account:					
1. At Bankers:					
(a) Current Account	9 13	3			
(b) Deposit Account	100 0	0			
2. In Office	7	9			
		_	110	1	0
II. Library Fund Account:					
At Bankers			13	9	0
Sale of Publications—					
1. By Publishers, April 1 to Dec. 31, 1926					
(estimate)	190 0	0			
2. By Custodian	5	0			
V		_	190	5	0
Investments at Broker's Valuation—					
1. £1,1505% War Loan Inscribed Stock at $100\frac{7}{8}$	1160 1	3			
2. £50 5% National War Bonds 1927 Registered					
at $106\frac{3}{4}$	53 7	6			
3. £50 4% Funding Loan Inscribed Stock at $85\frac{1}{2}$	42 15	0			
		_	1256	3	9
Arrears of Annual Subscriptions, valued at		•	5	0	0
			£1574	18	9

The Stock of Publications and the value of the Library are not included in the above assets.

January 17, 1927.

F. N. ASHCROFT, Hon. Treasurer.

### ABSTRACT STATEMENT OF ACCOUNTS OF THE JUBILEE ENTERTAINMENT (VOLUNTARY) FUND, 1926.

RECEIPTS.	£	s.	d.	Expenditure. £ $s$ . $d$ .
Voluntary contributions Sale of Dinner tickets .		17 10	6	Expenditure to Dec. 31, 1926 149 16 11
Deposit Interest		12	6	Transferred to the General Purposes Account to- wards cost of publication of the account of the
				Jubilee Celebrations . 25 15 0
				Balance 15 8 1
	£191	0	0	£191 0 0
January 17, 1927.				W. F. P. McLINTOCK A. F. HALLIMOND F. N. ASHCROFT, Hon. Treasurer.

Note.—A detailed statement will be issued to the subscribers to the fund when the account is closed. The balance available, after settlement of an estimated liability of £3 and such further expenditure as may properly be charged to the fund, will be transferred to the General Purposes Account as a further contribution towards the cost (about £45) of printing the account of the Jubilee Celebrations.