

INTERNATIONAL
MINERALOGICAL
ASSOCIATION

AN ASSOCIATION OF 22 NATIONAL MINERALOGICAL SOCIETIES

PROGRAM

THIRD GENERAL MEETING

WASHINGTON, D. C.

APRIL 17-20, 1962

SPONSORED BY THE
MINERALOGICAL SOCIETY OF AMERICA

NATURAL HISTORY BUILDING
UNITED STATES NATIONAL MUSEUM
SMITHSONIAN INSTITUTION
CONSTITUTION AVENUE AT 10TH STREET

The financial support of the
NATIONAL SCIENCE FOUNDATION

toward this meeting, thereby promoting international understanding
and cooperation among scientists, is gratefully acknowledged.

INTERNATIONAL MINERALOGICAL ASSOCIATION

<i>President</i>	D. Jerome Fisher	<i>Councilors</i>
<i>First Vice-President</i>	C. E. Tilley	P. R. J. Naidu
<i>Second Vice-President</i>	G. P. Barsanov	Th. G. Sahama
<i>Secretary</i>	J. L. Amorós	H. G. F. Winkler
<i>Treasurer</i>	L. G. Berry	<i>Past President</i>
		R. L. Parker

IMA COMMISSIONS

ABSTRACTS

<i>Chairman</i>	M. Fornaseri
<i>Secretary</i>	R. Van Tassel

MINERAL DATA

<i>Chairman</i>	H. Strunz
<i>Secretary</i>	G. T. Faust

MUSEUMS

<i>Chairman</i>	C. Frondel
<i>Secretary</i>	F. Leutwein

NEW MINERALS AND MINERAL NAMES

<i>Chairman</i>	M. Fleischer
<i>Secretary</i>	C. Guillemin

TEACHING

<i>Chairman</i>	J. Orcel
<i>Secretary</i>	H. J. deWijis

ORE MICROSCOPY

(Pending)

CHAIRMEN OF IMA LIAISON COMMITTEES

COMMISSIONS OF THE INTERNATIONAL UNION OF GEOLOGY

<i>Meteorites</i>	D. P. Grigoriev
<i>Petrographic Nomenclature</i>	C. Burri
<i>GEOCHEMICAL SOCIETY</i>	E. Wm. Heinrich
<i>INTERNATIONAL UNION OF CRYSTALLOGRAPHY</i>	F. Laves

MINERALOGICAL SOCIETY OF AMERICA

<i>President</i>	Ian Campbell	<i>Secretary</i>	George Switzer
<i>Vice-President</i>	C. S. Hurlbut, Jr.	<i>Treasurer</i>	Marjorie Hooker
<i>Past President and Representative to the IMA</i>			E. F. Osborn

LOCAL COMMITTEE

A. Van Valkenburg, <i>Chairman</i>	Marjorie Hooker
George Switzer	Paul Desautels
Dorothy Carroll	Edwin W. Roedder
Roy E. Clarke, Jr.	Kathleen Roedder
M. Fleischer	J. F. Schairer
William E. Benson, <i>Liaison with National Science Foundation</i>	

INTERNATIONAL MINERALOGICAL ASSOCIATION

REPRESENTATIVES OF THE MEMBER NATIONAL MINERALOGICAL SOCIETIES

- Austria:* Dr. Alfred Schiener, Vienna
Belgium: Dr. R. Van Tassel, Brussels
Bulgaria: Prof. Ivan Kostov, Sofia
Canada: Prof. L. G. Berry, Kingston
Czechoslovakia: Prof. J. Sekanina, Brno
Denmark: Dr. Hans Clausen, Copenhagen
Egypt: Dr. E. M. El Shazly, Cairo
Finland: Prof. Th. G. Sahama, Helsinki
France: Dr. C. Guillemin, Paris
Germany: Prof. W. von Engelhardt, Tübingen
India: Mr. K. Rajagopaldaswamy, Bombay
Italy: Prof. M. Fenoglio, Turin
Japan: Prof. N. Katayama, Tokyo
Netherlands: Prof. H. J. deWijs, Delft
New Zealand: Prof. D. S. Coombs, Dunedin
Norway: Dr. Henrich Neumann, Oslo
Spain: Prof. M. Font-Altaba, Barcelona
Sweden: Prof. Frans E. Wickman, Stockholm
Switzerland: Prof. E. Wenk, Basel
United Kingdom: Dr. J. R. Butler, London
U.S.A.: Dr. E. F. Osborn, University Park, Pa.
U.S.S.R.: Dr. G. P. Barsanov, Moscow

SCHEDULE

Tuesday—April 17, 1962

- 9:00 A.M. Meetings¹: Council, Abstracts Commission, Data Commission
10:30 Intermission
11:00 Meetings: New Minerals and Mineral Names Commission, Teaching Commission
12:30 P.M. Luncheon
2:00 Meetings: Museums Commission; Ore Microscopy Group²: Second meeting of other Commissions
3:30 Intermission
4:00 Commission Meetings³ (continuation)
5:00 Welcoming Reception, Marriott Motor Hotel, Twin Bridges

Wednesday—April 18, 1962

- 9:00 A.M. Symposium on Layered Intrusions (Auditorium)
8:00 P.M. First Business Meeting: Reports of Officers, Reports of Committee Chairmen, Changes in the Constitution, New Business (Auditorium)

Thursday—April 19, 1962

- 9:00 A.M. General Session of Non-Symposium Papers (Auditorium)
7:00 P.M. IMA Banquet, Marriott Motor Hotel, Twin Bridges

Friday—April 20, 1962

- 9:00 A.M. Symposium on the Mineralogy of the Sulfides (Auditorium)
4:00 P.M. Second Business Meeting: Reports of Chairmen of Commissions, Voting (Auditorium)
7:30 Start of Southern Field Trip

FIELD TRIPS

Northern Field Trip, New York to Washington (*Leader: Professor Paul F. Kerr*)

April 14. Registration, American Museum of Natural History,

¹ The locations of meeting places for small groups will be posted at the Information Desk.

² Those interested in the possible formation of a Commission dealing with the problems of ore microscopy are invited to attend this meeting. Further information is available from your Representative or from Secretary Amorós.

³ Later meetings of the Commissions may be scheduled by their Chairmen for April 18–20. Since some countries may be represented by but one or two mineralogists, conflicts in meetings of the various Commissions should be avoided.

10:00 A.M. Visit the Columbia University Mineralogy Laboratory; the Lamont Geological Observatory; and the Palisades, New Jersey. Evening program: Mineral Occurrences of New Jersey. Alexander Hamilton Hotel, Paterson, N. J.

April 15. Paterson zeolites; Franklin Furnace-Sterling Hill area, N. J.; serpentinite mineralization near Easton, Pa. Evening program: Mineral Occurrences of Eastern Pennsylvania. Treadway Inn, Lebanon, Pa.

April 16. Cornwall Iron Mine, Pa.: Cedar Hill Quarry, Maryland-Pennsylvania boundary. Trip ends at Washington, D. C.

Southern Field Trip, Virginia (*Leader:* Professor R. V. Dietrich)

April 20. Leave Washington at 7:30 P.M. from in front of the U. S. National Museum. Overnight stop near Richmond, Va.

April 21. Amelia pegmatite; Willis Mountain kyanite deposit; Alta Vista cordierite-rich schist; and a pegmatite in the Moneta-Bells District.

April 22. Roseland rutile deposit; unakite occurrence; Cold Spring clay deposit; Kelly Bank manganese deposit; Lone Jack quarry; and Natural Bridge. Part of the Blue Ridge Parkway will be traversed.

April 23. Spottswood District bauxite deposit; a calcareous tufa deposit; and the Luray Caverns. Return to Washington about 6 P.M.

Note. Participants in each of the above two trips will be supplied with a detailed Guide Book.

Museum Trip, Washington to Cambridge (*Leader:* Professor Clifford Frondel)

April 24–27. Visits to mineralogical museums in Philadelphia, New York City, New Haven, Conn. and Cambridge, Mass. The trip will disband at Cambridge.

VISITS TO WASHINGTON LABORATORIES

During the Washington meetings (April 17–20) there will be opportunities for small groups to visit the Geophysical Laboratory of the Carnegie Institution, the National Bureau of Standards, and the U. S. Geological Survey.

PROGRAM FOR LADIES

Arrangements will be made on an informal basis for trips around Washington to suit the wishes of visiting ladies.

SCHEDULE

WEDNESDAY—APRIL 18, 1962

Symposium on Layered Intrusions

C. E. TILLEY, *Chairman and Editor*

H. H. HESS, *Co-chairman*

(After each paper 5 minutes is allowed for discussion)

- | | |
|--|-------|
| 1. C. E. TILLEY: <i>Introductory remarks</i> | 9:00 |
| 2. E. N. CAMERON: <i>Structure and rock sequences of the critical zone of the eastern Bushveld Complex</i> | 9:05 |
| 3. C. H. SMITH AND E. H. KAPP: <i>The Muskox intrusion, a newly discovered layered intrusion in the Coppermine River area, N. W. Territories, Canada</i> | 9:25 |
| 4. E. D. JACKSON: <i>Stratigraphic and lateral variation of chromite compositions in the Stillwater complex</i> | 9:45 |
| 5. J. FERGUSON AND T. C. R. PULVERTAFT: <i>Contrasted styles of igneous layering in the Gardar province of S. Greenland</i> | 10:05 |
| Intermission | |
| | 10:30 |
| 6. C. H. EMELEUS: <i>Structural and petrographic observations on layered granites from S. W. Greenland</i> | 11:00 |
| 7. T. N. IRVINE: <i>Mineralogy and petrology of the ultramafic complex at Duke Island, S. E. Alaska</i> | 11:20 |
| 8. T. P. THAYER: <i>Flow layering in alpine-type peridotite-gabbro complexes</i> | 11:40 |
| 9. R. H. JAHNS AND O. F. TUTTLE: <i>Layered pegmatite-aplite intrusions</i> | 12:00 |
| Luncheon | |
| | 12:30 |
| 10. L. R. WAGER: <i>The mechanism of deposition and solidification of the Skaergaard layered series, E. Greenland</i> | 2:00 |
| 11. P. R. J. NAIDU: <i>A layered complex in Siltampundi, Madras State, India</i> | 2:30 |
| 12. R. C. SPEED: <i>Layered picrite-anorthositic gabbro sheet, West Humboldt Range, Nevada</i> | 2:50 |
| 13. A. A. LOOMIS: <i>Norite anorthosite bodies in the Sierra Nevada batholith</i> | 3:10 |
| Intermission | |
| | 3:30 |
| 14. H. E. HUNTER: <i>Layered basic intrusive rocks of the Wichita Mountains, S. W. Oklahoma</i> | 4:00 |
| 15. W. J. WADSWORTH: <i>The Kapalagulu layered intrusion of Western Tanganyika</i> | 4:20 |
| 16. B. M. GUNN: <i>Differentiation in Ferrar dolerites, Antarctica</i> | 4:40 |
| 17. H. G. WILSHIRE: <i>Internal structure of a differentiated teschenite intrusion, Prospect Hill, New South Wales</i> | 5:00 |

First business meeting at 8:00

THURSDAY—APRIL 19, 1962

General Session of Non-symposium Papers

C. S. HURLBUT, JR., *Chairman and Editor*

PHILIP H. ABELSON, *Co-chairman*

(Each speaker should leave sufficient time for discussion)

- | | |
|---|------|
| 1. L. S. DENT GLASSER, F. P. GLASSER, AND H. F. W. TAYLOR: <i>The role of oriented transformations in mineralogy.</i> | 9:00 |
|---|------|

2. PETER J. WYLLIE: *Liquidus and solidus paths in multicomponent systems and their effect on mineral zoning.* 9:15
3. R. A. HOWIE: *Cell parameters of orthopyroxenes.* 9:30
4. DAVID R. WONES AND DANIEL E. APPLEMAN: *Iron-feldspar polymorphs in the system K_2O -FeO-Fe₂O₃-SiO₂-H₂O.* 9:45
5. J. L. JAMBOR AND CHARLES H. SMITH: *Accurate determination of olivine composition using standard small diameter x-ray powder camera.* 10:00
6. SIMONNE CAILLÈRE AND FRANÇOIS KRAUT: *Sur les constituants phosphates des minerais de fer oolithiques de France.* 10:15

Intermission 10:30

7. J. RIMSAITE: *Studies of rock-forming micas.* 11:00
8. D. S. COOMBS: *Basalt relationships illustrated by the plagioclase-ferroan diopside-olivine-silica tetrahedron.* 11:20
9. P. R. J. NAIDU: *Crystallization of leucite-nepheline-sanidine in ultrabasic differentes from a peridotite mass in Salem (Madras, India).* 11:35
10. ALLAN F. WILSON: *A new occurrence of sapphirine, and the significance of sapphirine in the granulite terrains of Western Australia.* 11:50
11. ICHIRO SUNAGAWA: *Studies of crystal surfaces.* 12:05

Luncheon 12:30

12. J. R. HODKINSON: *Light extinction and scattering by suspensions of finely-divided minerals.* 2:00
13. HORST PILLER: *Study of translucent tiny grains using the interference microscope.* 2:15
14. HORACE WINCHELL: *Regressions of physical properties on chemical composition of amphiboles.* 2:30
15. KEIICHI OMORI AND PAUL F. KERR: *Infrared study of sulfate minerals.* 2:45
16. EDWIN ROEDDER: *The composition of quartz-forming fluids in nature.* 3:00
17. J. MONTORIOL POUS, A. SAN MIGUEL, AND M. FONT-ALTABA: *Spectrographic study of a Spanish fluorite deposit.* 3:15

Intermission 3:30

18. J. V. SMITH: *Structural classification of zeolites.* 4:00
19. G. GOTTARDI AND W. M. MEIER: *The crystal structure of dachiardite.* 4:15
20. C. T. PREWITT AND M. J. BUEGER: *A comparison of the crystal structures of wollastonite and pectolite.* 4:30
21. N. MORIMOTO, F. MARUMO AND R. SADANAGA: *New interpretation of systematic "extra extinctions."* 4:45
22. MALCOLM ROSS AND HOWARD T. EVANS, JR.: *The crystal structures and crystal chemistry of various members of the metatorbernite group.* 5:10

PAPERS BY TITLE

23. J. A. MANDARINO, S. J. WILLIAMS AND R. S. MITCHELL: *Spiroffite, a new tellurite mineral from Mexico.*
24. SUBRATA GHOSE: *The crystal structure of pseudomalachite.*

FRIDAY—APRIL 20, 1962

Symposium on the Mineralogy of the Sulfides

A. J. FRUEH, *Chairman and Editor*
 PAUL RAMDOHR, *Co-chairman*

1. WAYNE W. SCANLON: (Invited sessional lecture) *The physical properties of semi-conducting sulfides, selenides and tellurides* 9:00

2. MEAD L. JENSEN: <i>Sulfur isotope mineralogy of sulfides</i>	10:00
3. JEAN PROUVOST: <i>Quelques aspects des déplacements atomiques dans les sulfures métalliques</i>	10:25
4. NOBUO MORIMOTO: <i>On the transition of bornite</i>	11:15
5. B. J. WUENSCH AND M. J. BUERGER: <i>The crystal structure of pyrrhotite, Fe₇S₈</i>	11:40
6. PRIESTLEY TOULMIN, 3RD, AND PAUL B. BARTON, JR.: <i>Thermodynamic study of pyrrhotite and pyrite</i>	12:05
Luncheon	
	12:30
7. B. J. WUENSCH AND M. J. BUERGER: <i>The crystal structure of chalcocite, Cu₂S</i>	2:00
8. PAUL B. BARTON, JR., PHILIP M. BETHKE AND PRIESTLEY TOULMIN, 3RD: <i>Equilibrium in sulfide deposits, I—Concepts</i>	2:25
9. PHILIP M. BETHKE, PAUL B. BARTON, JR., AND PRIESTLEY TOULMIN, 3RD: <i>Equilibrium in sulfide deposits, II—Natural assemblages</i>	2:50
10. M. FONT-ALTABA: <i>Study of distorted pyrite crystals from Fuente Valoria (Soria, Spain)</i>	3:15
11. FAROUK EL BAZ AND G. C. AMSTUTZ: <i>A statistical study of bravoite zoning</i>	3:30