

material. On the contrary, analysis IV by E. Bamberger, shows that the amounts of alkalis and chlorine decrease when sodalite weathers while the water content increases.

The following ratio of Cl:Si in the analyses I–III is in good accord with the formula $3\text{NaAlSiO}_4 \cdot \text{NaCl}$:

I	II	III	$3\text{NaAlSiO}_4 \cdot \text{NaCl}$
1:3.00	1:3.00	1:3.00	1:3.00

As many sodalites contain very little or no iron oxide it is probable that the iron oxide found in the pure Bolivian material is due to microscopic impurities, in this case most likely hematite. If we omit the iron oxide and recalculate the analyses we obtain the following compositions which are in very good agreement with the given formula which is also the one accepted by L. Pauling as a result of his *x*-ray investigations.

	I	II	III	$3\text{NaAlSiO}_4 \cdot \text{NaCl}$
Na_2O	25.59	25.59	25.60	25.59
Al_2O_3	31.56	31.56	31.55	31.56
SiO_2	37.19	37.18	37.19	37.18
Cl	7.31	7.32	7.31	7.32
	101.65	101.65	101.65	101.65

PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY

Academy of Natural Sciences of Philadelphia, September 7, 1933.

President Trudell presided at a stated meeting, 45 members and 15 visitors being present. Mr. Clifton Mimms was elected a member, and Messrs. John H. Turri and Henry Moor, junior members.

Nineteen reports were made of summer excursions, with exhibits of specimens: Mr. Yost (Franklin, N. J.); Mr. MacNelly (Texas, Pa.); Mr. Moyd (Bridgeport, Pa.,—clear quartz crystals); Mr. Knabe (Wood's Chrome Mine, Line Pit, and Huntingdon Valley, Pa.); Mr. Dornblum (Wood's Chrome Mine, Pa. and Franklin, N. J.); Mr. Vanartsdalen (Holland, Pa.); Messrs. Arndt and Frankenfield (Scotch Plains, N. J.,—calcite, heulandite, and prehnite); Dr. Gillson (Birmingham, Alabama,—barite and fluorite in limestone; Pensacola, Florida,—ilmenite sands); Dr. Cajori (Devil's Head, Tarryall, and Stone Mountain, Colorado); Mr. Gordon (Vesuvius, Italy); Mr. Toothaker (Moore Station, N. J., and New Galena, Pa.); Mr. Knorr (Bridgeport, Pa.); Mr. Cienkowski (western United States); Mr. Trudell (Mexico City, Vera Cruz and Pueblo). Mr. Toothaker described some mineral exhibits at the Century of Progress in Chicago.

Academy of Natural Sciences of Philadelphia, October 5, 1933

President Trudell presided at a stated meeting, with 47 members and 46 visitors present.

Mr. Toothaker announced a Hobby Show to be conducted by the Philadelphia Commercial Museum during Thanksgiving week, for young people under 18 years of age.

The following officers were elected for the coming year:

President: Dr. Joseph L. Gillson

Vice-president: Mr. Harold Arndt

Secretary: Mr. Wylie Flack

Treasurer: Mr. Morrell G. Biernbaum

Councillor: Mr. Charles R. Toothaker

"Gems from the Mineralogist's Viewpoint" was discussed by Mr. Morrell G. Biernbaum and Mr. Charles R. Toothaker, who showed many lantern slides depicting methods of mining and cutting gems in Africa, India and South America.

Academy of Natural Sciences of Philadelphia, November 2, 1933.

A stated meeting was held on the above date with Dr. Joseph L. Gillson in the chair, and 51 members and 42 visitors present. Upon favorable recommendation of the executive council the following were elected members: Messrs. Ralph Hoffa and Rees H. Beresford.

Mr. James G. Manchester addressed the society on "Some Interesting Minerals" illustrated by means of colored lantern slides of outstanding specimens.

Messrs. Frankenfield and Gordon exhibited a series of minerals including micro-lite, manganotantalite, columbite, beryl, topaz, and amazonstone, secured near Amelia Courthouse, Virginia. Mr. Morgan exhibited apophyllite from Moore Station, and polished natrolite from Perkiomenville. Dr. Gillson described a trip with Mr. Knabe to Brinton's Bridge, finding chondrodite; and another trip with Mr. Frorer to Wood's Chrome mine which yielded zaraitite, brucite, magnesite, chromite, and picrolite. Mr. Biernbaum stated that quartz crystals were plentiful at the Herkimer localities.

W. H. FLACK, *Secretary*

NEWARK MINERALOGICAL SOCIETY

The Newark Mineralogical Society held its 138th regular meeting in the library of the Newark Technical School on Sunday afternoon, October 1, 1933, with the president, Louis Reamer, presiding. There was a good attendance of members and guests.

The program for the afternoon consisted of a symposium on "Summer Collecting." Vice-president, Ernest A. Maynard, spoke at length on the minerals he had collected during the past summer in Nova Scotia. His talk was illustrated with maps, photographs and specimens. Talks were also given by Herbert B. Baldwin; Paul Walther; Leonard A. Morgan; John A. Grenzig; Aubrey J. Slater; President Reamer and other members. Many specimens were on exhibition from Anthony's Nose; Sayreville, South River, Bedford, North Carolina, and Herkimer County, New York.

The 139th regular monthly meeting of the society was held on November 5th in the Newark Technical School.

The President, Louis Reamer, presided. At the close of the business session of the 139th meeting, the 18th annual meeting was started with the reading of the annual reports of the Secretary, Herbert L. Thowless, and of the Treasurer, Herman M. Lehman.

The following officers were unanimously re-elected to serve until the November meeting 1934:

President: Louis Reamer, Orange, N. J.

Vice-President: Ernest A. Maynard, Jamaica, Long Island.

Secretary: Herbert L. Thowless, Newark, N. J.

Treasurer: Herman M. Lehman, New Haven, Conn.

The program for the meeting consisted of a "Symposium on Metals." The speakers included William H. Broadwell; John A. Grenzig; Paul Walther; Ernest A. Maynard; John Reiner and the President.

The 140th meeting was held on December 3, 1933. The program consisted of a discussion on the "Preparation and Examination of Microscopic Mounts."

HERBERT L. THOWLESS, *Secretary*

BOOK REVIEWS

ELEMENTS OF OPTICAL MINERALOGY, AN INTRODUCTION TO MICROSCOPIC PETROGRAPHY, Part II. DESCRIPTION OF MINERALS WITH SPECIAL REFERENCE TO THEIR OPTIC AND MICROSCOPIC CHARACTERS. Third Edition. ALEXANDER N. WINCHELL. Pp. XVIII, 459, fig. 362. John Wiley & Sons, Inc., New York, 1933. Price \$6.00 net.

This third edition of Winchell's well-known book has been extensively revised. The frequent new editions are necessary as the science of optical mineralogy is progressing rapidly. The new edition has much new data, and a laudable attempt has been made throughout to enable the user to determine as far as possible the exact chemical composition of a mineral from its optical properties. The descriptions and the graphs for the amphibole, chlorite, tourmaline, scapolite, and zeolite groups have been materially revised.

The most important contribution of the book is the new classification of the silicates into seven groups based on their atomic structure as determined by *x*-ray studies. It is an important forward step and should show more clearly than any previous classification the fundamental relationships of minerals and mineral groups. This new point of view should lead to many advances in the science of mineral genesis and in other directions. A large number of minerals are grouped as silicates not yet classified by *x*-ray studies. A part of these might have been placed with reasonable assurance in their proper group from our present knowledge of the mineral.

Every working petrographer and mineralogist should have a copy of this standard book on optical mineralogy on his work desk.

ESPER S. LARSEN