Exception may be taken to one statement made by the author. On page thirty-two he says "at the present time in consideration of the fact that the symmetry class in the great majority of cases is not known, it seems better not to press the symmetry criterion too far." In a recent statistical study of the 7,224 crystalline compounds described in Groth's *Chemische Krystallographie*, the reviewer found that 5,588, or about 77 per cent, have been assigned to a particular symmetry class.

The three appendices are (1) Table of Natural Cotangents and Tangents, (2) Useful Trigonometrical Formulae, and (3) Table of Multiple Tangents. These useful appendices are identical with those found in the companion volume.

This book will prove particularly useful to crystallographers who are interested in crystals produced in the laboratory as distinguished from crystals found as minerals.

A. F. ROGERS

CRYSTALLOGRAPHY, MINERALOGY AND CRYSTAL STRUCTURE BY X-RAY METHODS: (Numerical Data.) L. J. SPENCER AND M. MATHIEU. Section from VOLUME VII OF ANNUAL TABLES OF CONSTANTS AND NUMERICAL DATA (YEARS 1925–1926). Price, paper cover, 60 Frs.; cloth bound, 70.

Publishers, Gauthier-Villars and Cie, 55 quai des Grands Augustins, Paris.

The importance of these complete tables to the investigator is fully appreciated when his attention is called to the fact that their preparation requires the careful examination and systematic classification of data collected from more than 550 scientific journals. The section of special interest to mineralogists comprises sixty-eight pages and is devoted to crystallography, mineralogy and crystal structure as revealed by *X*-ray investigations. For the years 1925–1926 new crystallographic data (compiled by L. J. Spencer) was found for 206 minerals, including new forms on fifty-eight minerals. Considerable space is also devoted to the crystallography of both inorganic and organic substances. Original references are given in all cases as footnotes.

The portion devoted to crystal structure (compiled by M. Mathieu) lists for each substance: the crystal system and Bravais lattice; the length of the cell edges; the angles between cell edges; density (calculated and experimental); number of molecules in unit cell; and the space group according to Schoenflies and Astbury.

W. F. H.

PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY

Academy of Natural Sciences of Philadelphia, January 8, 1931

A stated meeting of the Philadelphia Mineralogical Society was held on the above date with the President, Mr. Toothaker, in chair. The death of Dr. Henry Leffmann, (1847–1930) an honorary member, was announced and a tribute to his memory was read by the secretary. Dr. Leffmann served as president of the society for two years, 1917–1919.

Mr. Wm. L. Fisher told of a visit to the "Sulfur Mines of Sicily." He vividly described the primitive mining methods employed at Catania and Girgenti. The ore from the lower levels of the hot and stuffy mines is broken by hand picks and carried through dark passages by naked boys to the upper levels where it is put in cars and drawn by man-power to the surface. The sulfur is either extracted by means of live steam, or melted by the heat produced in the burning of some of the ore. In either case the melted sulfur is drawn off and allowed to harden in moulds. Mr. Fisher exhibited several fine groups of sulfur crystals and assured his audience that good specimens are still to be had at this famous old locality.

Dr. Fred M. Oldach related the manner in which Canadian copper prospects, occurring along the Ground Hog river in northern Ontario, were developed. Attention was called to the sulfide association of pyrite, chalcopyrite, and pyrrhotite, as being highly important in developing a prospect, not only for copper but also for gold.

Mr. Toothaker made an earnest plea for collectors to place on their labels the date on which a specimen was removed from a mine or quarry. This information is important to future workers who may study the specimen.

Mr. Petersen exhibited garnet from Avondale. Mr. Vanartsdalen reported the recent finding of small zircons along Walsh road near Willow Grove.

LESTER W. STROCK, *Secretary*

NEW YORK MINERALOGICAL CLUB

Minutes of the January Meeting

A regular meeting of the New York Mineralogical Club, with thirty members present, was held at the American Museum of Natural History on the evening of January 21, 1931, with first vice-president, George Ashby, in the chair.

Mrs. Richard Durkee of New York City was elected to membership. It was announced that the important work of James G. Manchester, published as a bulletin of the Club, would be ready at the time of the next meeting. The price was fixed at $2.00 to members, and $2.50 to the public. The title of the book is *The Minerals of New York City and Its Environs*. It was voted to authorize the president of the Club to arrange a joint meeting with the New York Mineralogical Society, in acceptance of an invitation extended by that body.

The speaker of the evening was Herbert P. Whitlock, who dwelt on the development of crystallography as a science, outlining the progress of investigation, experiment and theory, from the announcement of the law of symmetry by Haüy in 1815 to the physical determination of crystal structure by von Laue, and the subsequent advanced experiments and discoveries by Sir William Bragg and his son. The contributions to the progress of the science by the successive labors of the brilliant minds engaged in this field were explained and a fitting tribute paid to each of the major workers. The meeting extended a hearty vote of thanks to the speaker. By way of illustration, after the address, the speaker exhibited interesting crystals from the collection of the American Museum of Natural History, which were the actual specimens used by some of the leading investigators, and which bore labels in their own writing.

JAMES F. MORTON, *Secretary*

MINERALOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

MINERALOGICAL SOCIETY, January 13, SIR JOHN S. FLETT, President, in the chair.

DR. F. COLES PHILLIPS: *On a soda-margarite from the Postmasburg district, South Africa.* A fuller description is given of material first described by Dr. A. L. Hall. The mineral occurs in mica-like crystals associated with the Postmasburg manganese ores. The physical properties described resemble in general those of a mica, but analyses show 50 per cent of alumina and 10 per cent of alkalies, with little lime. It is best described as soda-margarite; in composition it resembles the "ephesite" of J. Lawrence Smith.

MR. F. A. BANNISTER: *On the distinction of analcime from leucite in rocks by X-ray methods.* Powder-photographs of phenocrysts in blairmorite from the Lupata Gorge, Zambezi River, Portuguese East Africa, are shown to be identical with those for analcime and not for leucite. The icositetrahedral outlines of the analcime phenocrysts found in the rock strongly suggest their primary origin. The *X*-ray photographs indicate that the phenocrysts are not single crystals but consist of aggregates of particles in sub-parallel position.

MR. F. A. BANNISTER: *On a chemical, optical, and X-ray study of nepheline and kaliophilite (with chemical analyses by Mr. M. H. Hey).* Correlated data have enabled the author to prove the approximate constancy of the number of oxygen atoms in the unit cells of several nepheline and elæolite specimens. Thence the numbers of atoms of each kind per unit cell have been counted. The cell volumes and optical properties have also been related to the chemical composition. An approximate structure is suggested which together with the chemical work explains the variable composition of nepheline. Kaliophilite is shown to possess a much larger cell than that of nepheline and its Lauegram exhibits higher symmetry. "Pseudonepheline" (rich in potassium) has a slightly greater cell volume than normal nepheline, but its Lauegram is almost identical and its axial ratio the same.

DR. H. V. WARREN: *On an occurrence of Grünerite at Pierrefitte, Hautes-Pyrénées, France.* A grünerite-schist, consisting almost entirely of fibrous grünerite, occurs at the Pierrefitte mine, where needles of the same mineral also occur in the galena and blende of the ore-bodies. The grünerite is associated with a carbonaceous schist and with magnetite, and encloses specks of carbon. Analyses of grünerite by E. G. Radley, (I from schist, II from ore):

SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	H_2O	C	
46.42	0.15	0.25	0.09	42.60	2.23	3.12	1.51	0.70	0.43	2'92	0.6	=100.07
49.11	0.12	1.81	2.03	38.98	0.79	2.97	0.75	0.94	0.64	1.49	0.31	=99.94

Cleavage perfect $\{110\}$; $(110):(1\bar{1}0) = 53°55'$ to $54°55'$. Plane of optic axes (010); $2V = 84°15'$. Refractive indices: $\alpha = 1.676$, $\beta = 1.693$, $\gamma = 1.707$ (Na). Birefringence —; extinction on $(010) = 13°22' = c' : \gamma$.

CORRECTION

On page 67 of the February issue of the American Mineralogist figure 12 should be turned counter-clockwise ninety degrees to agree in orientation with figures 13 and 14.