As stated above, the stones were subsequently examined in lots, by means of appropriate optical equipment. Only those diamonds which were nearly free from strain or showed no evidence of this condition were chosen. Industrial diamonds, which were flawed or which contained inclusions of any kind which were so oriented in the stones as to cause possible failure on use, were eliminated from consideration. And lastly, any stone not properly cut was likewise unacceptable.

Where a large number of stones are used, the employment of an inspection system, along the lines suggested above, and performed preferably by an individual possessing some knowledge of the mineralogy and crystallography of the diamond, will do much to reduce replacement costs and unsatisfactory performance.

PROCEEDINGS OF SOCIETIES

THE PHILADELPHIA MINERALOGICAL SOCIETY

Academy of Natural Sciences of Philadelphia, December 5, 1940

Dr. Thomas presided, with 52 members and visitors present. Dr. Daniel L. O'Connell of the College of the City of New York addressed the Society on "The Saurel Symbols for the 32 Crystal Classes." By the use of only a center of symmetry, axes of symmetry, and inversion axes (planes of symmetry were ignored) a thoroughly consistent and logical scheme for deriving and designating the 32 crystal classes was developed by the late P. Saurel, Professor of mathematics in the College of the City of New York. The exposition of the system by Dr. O'Connell was discussed by Drs. Wherry and Patterson.

January 2, 1941

Dr. Thomas presided with 47 members and visitors present. Dr. George T. Faust of the U. S. Department of Agriculture spoke on "Economic Petrography," emphasizing the importance of petrographic analysis in planning methods for beneficiation of ores. Mr. Louis Moyd related some experiences on his mineralogical expedition into Ontario in November.

February 6, 1941

Dr. Thomas presided, with an attendance of 71 members and visitors. Dr. William Parrish of State College addressed the society on "Isomorphism and solid solution," in which data on atomic and ionic radii and their relation to coördination numbers were reviewed. Interstitial and substitutional solid solutions and the formation of stable compounds were discussed from the viewpoint of crystal chemistry and structure. They can be differentiated by specific gravity methods and *x*-ray studies. Factors influencing the formation of solid solutions such as the 15% rule (limit of tolerance of radii of replaceable atoms), close similarity in crystal structures, etc., were discussed. Ordered, disordered structures and superstructures were described. Some of the principles developed were illustrated in deriving chemical formulae from chemical analyses of sphalerites and spinel. The speaker stressed the importance of the study of compositional variation in mineralogy.

Mr. Louis Moyd exhibited peristerite and ellsworthite from Hybla, Ontario; cyrtolite, cancrinite, sodalite, biotite, hackmanite and nepheline from Bancroft; cyrtolite and tremolite from Otter Lake; calcite, fluorite, diopside, molybdenite, and fluorite from Wilberforce; and wernerite from Calumet, Ontario.

FORREST L. LENKER, *Secretary*