It is not surprising therefore that such a national fraternity has been established for mathematicians. This fraternity had its birth at Syracuse University. The Mathematical Club of Syracuse University was organized in 1903. After it had had ten years of successful existence, it was entirely reorganized and became the first chapter of the Pi Mu Epsilon Mathematical Fraternity, which was founded at Syracuse University and incorporated on the twenty-fifth of May, 1914, at Albany, under the laws of the state of New York. "Pi Mu Epsilon is an academic fraternity in institutions of university grade," says the constitution. Its primary aim is the advancement of mathematics and scholarship. While its members are elected entirely on the basis of scholarship in mathematics and other subjects, it is not merely an honorary fraternity in that election to membership is all there is to it. It is a living, active, working fraternity of scholars, in which the members are actively engaged in study and research in the preparation of papers in the field of mathematical science to be presented at its regular meetings.

The following classes are eligible to membership in Pi Mu Epsilon: Any one whose work in the mathematical sciences is distinguished; members of the mathematical faculty; major and minor graduate students of mathematics; any former graduate whose work in mathematics was or is distinguished; major and minor undergraduate students of mathematics who attain the standard of scholarship set by the fraternity for eligibility to membership of such undergraduates.

One of the features of the fraternity's activity is the preparation on the part of each chapter of a circular letter to be sent to all the chapters at least once a year, and containing items of interest concerning its work and programs and list of officers, in order that, according to the constitution, "the chapters may realize the benefits of that fraternal interaction and stimulus, which was one of the reasons for founding the fraternity."

The fraternity now has six chapters, in the order of their installation, at Syracuse University, Ohio State University, University of Pennsylvania, University of Missouri, University of Alabama, Iowa State College of Agriculture and Mechanic Arts.

The national officers of the fraternity are: *Director general,* Professor E. D. Roe, Jr., Syracuse University; *vice-director general,* Mr. William V. Houston, Ohio State University; *secretary general,* Professor Warren G. Bullard, Syracuse University; *treasurer general,* Miss Louisa S. Lotz, University of Pennsylvania; *librarian general,* Miss Mabel G. Kessler, University of Pennsylvania.

E. D. ROE, JR.

THE ARNOLD ARBORETUM OF THE HARVARD UNIVERSITY

THE committee appointed by the Board of Overseers of Harvard College to visit the Arnold Arboretum has issued the following statement:

The arboretum was established fifty years ago as the university's museum to increase the knowledge of trees and shrubs, of which it has now the largest living collection in America, supplemented by a great herbarium and library, and is everywhere recognized as the most important institution of its kind in the world, and also as one of the most beautiful of all public gardens. For forty years it has been the most active and successful of the agencies for the discovery and study of new trees and shrubs; and to-day it is a great national institution of world-wide usefulness and reputation, to whose initiative and example the parks and gardens of America owe much of their beauty.

The arboretum has outgrown its endowment, which produces only $40,000 a year, and to meet the deficits of income the director has been obliged for a long time personally to raise every year from forty to fifty thousand dollars, which have been given usually by not over one hundred and twenty persons chiefly living in Greater Boston. A still larger income will be required if the arboretum is to broaden its influence and maintain its position. Professor Charles S. Sargent has been director of the arboretum for fifty years, and it is time that he should be relieved of this burden of money-raising.

A national institution is entitled to national support. Will you not contribute $10 or such larger sum as you feel able to give for the work of the arboretum? Every contributor will receive in return the arboretum's *Bulletins of Popular Information,* containing information about all new and interesting plants, the illustrated guide to the arboretum, if desired, and any assistance and advice about his own plants that can be furnished by correspondence.

The visiting committee consists of Roger Wolcott, William C. Endicott, Theodore A. Havemeyer, Mrs. L. A. Frothingham, Charles L. Hutchinson, Richard T. Crane, Jr., Henry F. du Pont, Galen L. Stone, Henry S. Hunnewell, Albert C. Burrage, John E. Thayer, Mrs. Harold I. Pratt and Henry H. Richardson.

THE ELECTRON IN CHEMISTRY

SIR JOSEPH THOMSON gave a course of five lectures on "The electron in chemistry" before the Franklin Institute, Philadelphia, during the week of April 9. The topics treated were as follows:

Lecture 1: The atomic theory had little effect on the progress of chemistry as long as nothing was known about the structure of the atom. The discovery of the electron showed that atoms have a structure and gave a clue to its character. The arrangement of the electrons in the atom. Number of electrons in the atom. Electronic isomers. Active nitrogen. Instability of configuration when electrons are too crowded. Eight the maximum number of electrons which can be on the outer layer of an uncharged atom. This result involves a periodicity in the properties of the atoms of the different elements, such as is expressed by Mendeleef. Periodic law. Valency. The size of atoms. Specific inductive capacity. Work required to abstract an electron from an atom. Methods for testing the configuration of electrons in an atom.

Lecture 2: The combination of atoms to form molecules. Physical interpretation of chemical "bonds." Double bonds. Union of two similar atoms to form a molecule. Union of two or more dissimilar atoms. "Positive and negative" valencies. Arrangement of electrons in octets. Comparison with the results of the old valency rules. Stability of systems of octets. Instability chains in octets in general. Stability of CH_2 chains. Polar molecules. Importance of these in chemical reactions. Problem of the water molecule. Arrangement of the electrons in chlorides, chlorates, perchlorates, carbonates, sulphates, sulphites, nitrates, nitrites. Connection between the arrangement of the electrons and the acidic or basic properties of the compound.

Lecture 3: Mechanism of chemical combination. Active molecules. Their occurrence in such reactions as the combination of hydrogen with chlorine or of oxygen with hydrogen. Afford a physical basis for Thiele's theory of partial valencies. "Molecular compounds." "Residual affinity." Double salts. Electron theory gives a physical basis for Werner's coordination theory. Mechanism of electrolytic dissociation. Structure of the ions in liquids. Catalytic action. Variable valency and homologous elements.

Lecture 4: Connection between variable valency and the magnetic properties of the elements. Magnetism of chemical compounds. Magnetism of oxygen. Dia-magnetism affords a method of checking the configuration of the atom and the migration of the electrons in chemical combination. The electron theory of solids. General considerations. Calculation of the energy of a solid.

Lecture 5: The calculation of the electron theory of the compressibility of the elements in a solid state. Critical periods of vibration for solids. Latent heat of evaporation. Compressibility and specific inductive capacity of salts. The structure of metals, salts and insulators. Electrical conductivity of metals.

PRESENTATION OF THE JOHN SCOTT MEDAL AWARDS

THE City of Philadelphia, through its board of directors of city trusts, made the annual presentation of the John Scott Medal Awards at a special meeting of the American Philosophical Society on the evening of April 10. The awards were as follows:

To Sir Joseph Thomson, O.M., F.R.S., master of Trinity College, Cambridge, for his researches on the physics of the electron.

To Francis William Aston, D.Sc., F.R.S., of Trinity College, Cambridge, for his development of the mass-spectrograph and his studies of isotopes; to be received by his Excellency the British Ambassador or his representative, H. C. Chilton.

To C. Eijkman, M.D., of the University of Utrecht, for his researches on dietary diseases; to be received by His Excellency the Minister from the Netherlands.

To Arthur Louis Day, Ph.D., Sc.D., director of the Geophysical Laboratory of the Carnegie Institution of Washington, for his researches on optical glass.