health-giving qualities of the tree, as possibly having suggested to them the name arbor vitae, tree of life. When the speaker had sat down, Dr. Leidy, in his quiet manner, said that such and such a Latin physiology published some time in 1600, refers to a small filament at the base of the brain, which from its tree-like form was called arbor vitae, the tree of life, and that he had always assumed that the great similarity of this filament to the form of the arbor vitae had led to the tree's name. Thus it was that Leidy from his broad and profound knowledge would bring out some such point which the writer of an elaborate paper had overlooked. In this case the writer being *only* a botanist was not aware of the filament at the base of the brain.

R. C. CANBY

A. J. NEWTON

EXHIBITION OF THE ROYAL PHOTO-GRAPHIC SOCIETY

THE Royal Photographic Society of Great Britain are holding their sixty-ninth annual exhibition in September and October of this year. This is the most representative exhibition of photographic work in the world, and the section sent by American scientific men heretofore has sufficiently demonstrated the place held by this country in applied photography. It is very desirable that American scientific photography should be equally well represented in 1924, and, in order to enable this to be done with as little difficulty as possible, I have arranged to collect and forward American work intended for the scientific section.

This work should consist of prints showing the use of photography for scientific purposes and its application to spectroscopy, astronomy, radiography, biology, etc. Photographs should reach me not later than Saturday, June 14. They should be mounted but not framed. There are no fees.

I should be glad if any worker who is able to send photographs will communicate with me as soon as possible so that I may arrange for the receiving and entry of the exhibit.

EASTMAN KODAK COMPANY, Rochester, N. Y.

SCIENTIFIC BOOKS

A Comprehensive Treatise on Inorganic and Theoretical Chemistry. Vol. IV.—Ra and Ac Families, Be, Mg, Zn, Cd, Hg. By J. W. MELLOR. 1074 pages. Longmans, Green and Co., London, 1923. Price, \$20.00.

VOLUME IV of the "Comprehensive Treatise" represents an important addition to the volumes already published. (For review of Vols. I-III, see SCIENCE,

Vol. 58, No. 1500, (1923)). This is particularly true because of the fact that the treatment of the radioactive elements is expanded to include a discussion of the modern theories of atomic structure and valence, which were omitted entirely from the chapters on valence and similar subjects in Vol. I. The first chapter deals with the structure of matter, treated broadly and historically; the second treats the radioactive elements; and the third is entitled "The Architecture of the Atom." A very considerable amount of data is given, and the references are full and apparently up to date. The author makes no attempt to correlate conflicting theories, a task which is, after all, better left to monographs on the subject. The student will find in these chapters much to interest and stimulate him.

The remaining chapters are devoted to an exhaustive study of the elements listed on the title page. Beryllium and magnesium are treated separately; zinc and cadmium together; mercury separately. The method of treatment is similar to that employed in the earlier volumes. Each element is taken from the most remote reference to it in literature, and is brought down to quite recent dates, with abbreviated statements of apparently almost all the work that may have been done, and with very full references. In the opinion of the reviewer the book would have been improved if a somewhat more critical attitude had been taken, more space being given to apparently reliable data, and less to some of the older data. Nevertheless, these abbreviated statements must arouse the interest and curiosity of the student perhaps even because of their failure to give full information, and the frequent absence of logical sequence. Thus, "..., the electric sparking of cadmium under liquid argon produces a voluminous olive-green powder, which . . . is thought to be a nitride. According to O. Sackur, the catalytic activity of the following metals on the combustion of hydrogen decreases in order Ag, Pt, Cu, Pb, Zn, Ni, Sn, Fe, Cr." Altogether, Volume IV maintains very satisfactorily the standard set by the earlier volumes.

UNIVERSITY, VIRGINIA

GRAHAM EDGAR

SPECIAL ARTICLES

A SIMPLE METHOD FOR QUANTITATIVE STUDIES OF IONIZATION PHENOMENA IN GASES

DIRECT measurements of the free paths of electrons in gases and a great deal of other quantitative information regarding the mechanism of ionization may be obtained from a simple type of tube which contains no grid. A straight tungsten *filament*, *f*, is mounted