

## NOTES AND NEWS

### BIOGRAPHICAL NOTICE OF W. S. ANDREWS, A PIONEER IN THE STUDY OF THE LUMINESCENCE OF MINERALS

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W. S. Andrews, a life long worker in the field of electric lighting, died in Schenectady, New York, on July 1, 1929, at the age of eighty-two.

Born at Saltford, Somersetshire, England, on September 10, 1847, he came to America in July, 1875, and on December 4, 1879, entered the service of Thomas A. Edison, at Menlo Park, New Jersey.

He was active in the design of parts of the early Edison carbon incandescent lamps, and of machinery for their manufacture, and also of many other components of the Edison system. In various positions of increasing responsibility related to the Edison Electric industries, he moved from place to place until in 1894 he went to Schenectady where he remained active for the remainder of his long life in the employ of the General Electric Company.

From 1897 to 1903 he experimented with  $x$ -ray tubes, obtaining a number of patents for their regulation and, due to the then unknown danger of  $x$ -rays, received severe burns on his left hand and face, from which he suffered thereafter, and they finally affected his hearing and caused him years of excruciating suffering and finally the loss of his eyesight. He may well be said to have died a martyr to the progress of scientific knowledge in this field.

About 1900 he became interested in the subjects of fluorescence and phosphorescence and the general subject of "cold light." His experiments in this field led to many papers dealing with this general subject, one of which, published in this journal,<sup>1</sup> described the preparation of synthetic fluorescent willemite and other luminescent compounds. The writer has previously made reference<sup>2</sup> to the very practical form of iron—spark apparatus which Mr. Andrews designed to make more generally known to the public the remarkable fluorescent properties of many substances both artificial and natural. This instrument is now used effectively in many mineralogical laboratories for mineral determination.

<sup>1</sup> *American Mineralogist*, 7, 19, 1922.

<sup>2</sup> *American Mineralogist*, 13, 1928, 330.

Through Mr. W. L. Lemcke of Franklin, Pa., the writer has learned that Mr. Andrews was one of the engineers who cooperated to effectively use ultraviolet light at the works of the New Jersey Zinc Company at Franklin, N. J., to control the concentration of willemite.

It is employed to examine the wet waste sand or "tailings" from the jigs in which that part of the ore not picked up by magnetic concentration is separated by gravity into its constituents. The tailings, chiefly calcite, may contain more or less of the valuable ore willemite. By holding the iron-arc over a car of tailings the workman can quickly judge by noting the number of points of light (willemite particles) on the surface whether the jigs are correctly adjusted to make the best possible concentration. It is a very rapid and useful check on the process. From this use the iron-arc soon found its way into the office of the chemist at the sampling laboratory and knowledge of the effect of ultraviolet light in producing fluorescence in minerals has now become widespread. Its use for museum display as exhibited in the mineral collections of the British Museum and of the Philadelphia Academy of Science has been described in recent publications.<sup>3</sup>

It is a satisfaction to be able to make known generally the fact that Mr. Andrews was a pioneer in the development to practical form of this beautiful and very useful instrument of science.

### BOOK REVIEWS

LEHRBUCH DER ERZMIKROSKOPIE. HANS SCHNEIDERHÖHN, professor of mineralogy in the University of Freiburg and PAUL RAMDOHR, professor of mineralogy in the Technical High School in Aachen. Gebrüder Borntraeger, Berlin, 1931. Price \$17.50 (bound).

This monumental work on the microscopic study of the ore minerals in vertically reflected light is to comprise two volumes and an appendix consisting of determinative tables for ore minerals. At the present writing only volume II and the appendix have come off the press and this review applies only to the former. It contains 714 pages of text with 7 drawings, 235 photomicrographs in black and white and 4 photomicrographs in colors. The "Lehrbuch" can be considered a second edition of Schneiderhöhn's earlier work "Anleitung zur mikroskopischen Bestimmung und Untersuchung von Erzen und Aufbereitungsprodukten, besonders im auffallenden Licht" which appeared in 1921. Volume I of the "Lehrbuch" will consist of the fundamental scientific principles of reflected light, description of the instruments and the methods of investigation. Volume II is a description of ore minerals and their microscopic properties.

<sup>3</sup> *Am. Mineralogist*, 14, 1929, 33 and 362.