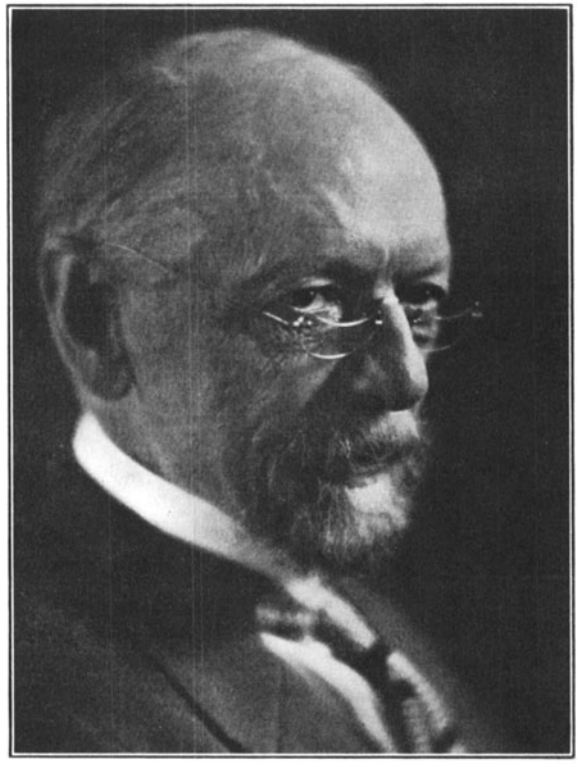
FREDERICK EUGENE IVES

It is with regret that the Society records the death of Frederick E. Ives, Honorary Member of the Society, and well known inventor and research worker in the photographic, optical, and graphic arts fields



FREDERICK EUGENE IVES

for many years. Mr. Ives died at his home in Philadelphia on May 28th. He was 81 years of age. A son, Dr. Herbert E. Ives, of the Bell Telephone Laboratories, survives.

Mr. Ives was born February 17, 1856, in the little village of Litch-

field, Conn. When he was 11 years of age his father died, and he was compelled to leave school and contribute to the support of his mother, two younger brothers, and two sisters. For some time he was engaged as a printer's devil in the office of the Litchfield "Inquirer." Although his early schooling was meager, he soon acquired an interest in optical and photographic subjects and began his long period of invention when still in his teens.

While serving his apprenticeship in the printing office, he turned his attention to photography and in 1875–78 was in charge of the photographic laboratory of Cornell University. During his four years at the institution, he perfected a process of making photoengraved typographic printing plates from pen drawings. He also invented the first halftone process that was developed commercially, making by an ingenious and scientific procedure, plates identical in characteristics to those used today, but stereotype instead of copper or zinc etchings.

In 1879 he became associated with the firm of Crosscup & West, wood engravers of Philadelphia, for whom he set up an establishment for producing photoengravings according to his process. During that time, also, Mr. Ives developed the ether saturator—an intense light-source which was first used in the projection lantern at the Franklin Institute at Philadelphia, and for the invention of which he was granted the medal of the Institute.

His inventions and practical developments in the field of photoengraving probably constitute Ives' greatest claim to fame, since the enormous photoengraving industry of the present day derives directly from his establishment in Philadelphia. His first process (1878) produced the graduation of line and dot through the use of a gelatin relief and an inked stippled surface pressed against it. This process, the first commercially successful halftone, he later (1885) superseded by the optical method, using a cross-line screen, which is now universally employed.

Ives' work in color photography began about 1885, when he first developed a practical method of color sensitizing, using eosine together with chlorophyll, to equalize the color-sensitivity of the plate. Next came the development of trichromatic halftones by the additive process, which resulted in the Ives Kromskop System. Various medals and other honors were awarded to Ives for these inventions. In addition to his work on the photochromoscope system and color print processes, Ives is credited with the first original work on the modern type of binocular microscope.

In 1905 he developed the Tripak System of color photography for amateur and professional photographers, and about the same time produced his "universal colorimeter" and "tint photometer," intended for industrial standardization and designation of colors.

One of Ives' inventions best known by those in the motion picture field was his parallax stereogram for viewing photographic objects in relief without using a stereoscope. In the field of color cinematography, Ives has about twenty patents to his credit, resulting mainly from his desire to produce colored pictures on regular single-coated positive film. More than seventy patents were filed by him up to 1925, but in addition, many other inventions and ideas that were not patented have been described by him in the literature, or have been utilized by others.

From these early days, which have been sketched here very briefly, the life of Frederick E. Ives was filled with scientific achievement in all directions. The art owes much to Frederick E. Ives, and the Society deeply mourns the loss of such a brilliant thinker, inventor, and profuse contributor to the arts of civilization.