

other snowflake. Thousands of people have looked at them, more or less closely, all the way from the casual wayfarer who glances at them as they fall on his coatsleeve to the more scientific-minded person who carries a magnifying-glass and holds his breath while he peers at them, lest he melt his "specimens" under his very nose.

Thousands of persons have thus looked, and a few have had the patience and skill to make photographs. Notable

among snow photographers was a Vermonter, the late W. A. Bentley. Among his many hundreds of snowflake plates there are no duplicates, not even any two that look particularly much alike. The number of snowflakes is infinite; their variety likewise infinite.

The cover photograph shows the unusually heavy fall in Washington as seen at night at the gate of the Japanese embassy by the camera of Fremont Davis, Science Service staff photographer.

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PHOTOGRAPHY

Snapshot Prints in Color Now Within Amateur's Grasp

IN A second story room of a house in Philadelphia, tables covered with notes and chemicals, walls decorated with photographs in color, microscopes and books mixed side by side in cases, a worn chair by the radio, a little old man now enters his 81st year convinced that color photography is within the grasp of the amateur at last.

Exceptionally keen of mind, this man has probably done more than any other to revolutionize the printing arts within the last half century, for he is Frederic Eugene Ives, the man who made the half tone and color reproduction available to newspapers and magazines.

Asked whether or not color photography would soon be within the grasp of the amateur, Mr. Ives pointed to the splendid examples hanging on the walls of his laboratory-study. Each of these had been done by an amateur, and the specimens sent to the inventor. Mr. Ives now devotes his time to giving information to amateurs and giving them advice regarding their problems. Under his kindly guidance not a few have been able to reproduce prints in natural colors using no special camera, but whatever camera the amateur might own. At a cost of about twenty-five cents per print many amateurs have achieved results that rival paintings.

Printer at 17

The snow storm raging outside reminded Mr. Ives that it was during such a storm that he was born on an New England farm. In fact it was a whole week before a doctor could battle his way through the snow drifts. His father died before he was twelve years old, and before he was seventeen he was a graduate printer working in Ithaca. So it will

be seen that Mr. Ives early became familiar with the graphic arts of the time. He was, from early boyhood, an amateur photographer and one of his first resolutions was to wed the arts of printing and photography.

At the age of eighteen he applied to Cornell University for the position of photographer, and Prof. Anthony, after some misgivings because of his youth, gave him the position. Here Mr. Ives made the experiments which were later to develop into the half-tone process.

Met Opposition

At Cornell Mr. Ives perfected the swelled gelatine and relief method, and used it for two years in illustrating the college paper, "Cocagne." Mr. Ives then went to Baltimore to carry his process to a short-lived illustrated weekly, and later came to Philadelphia. Naturally his processes met with opposition from the wood engravers, who saw the end of their usefulness in the newspaper field.

Later Mr. Ives also perfected his color reproduction processes. It would be difficult today to imagine a newspaper without half tones, or a magazine without color plates.

Mr. Ives disclosed for the first time the fact that the shortsightedness of Thomas Edison's business managers probably held back the production of colored motion pictures many years.

Edison and Mr. Ives knew each other very well. The great inventor discussed colored motion pictures with Mr. Ives and then turned the matter over to his business managers. These astute gentlemen would not consider Mr. Ives' research because it was not perfected at the time. Strangely enough, the recent advent of color photography found

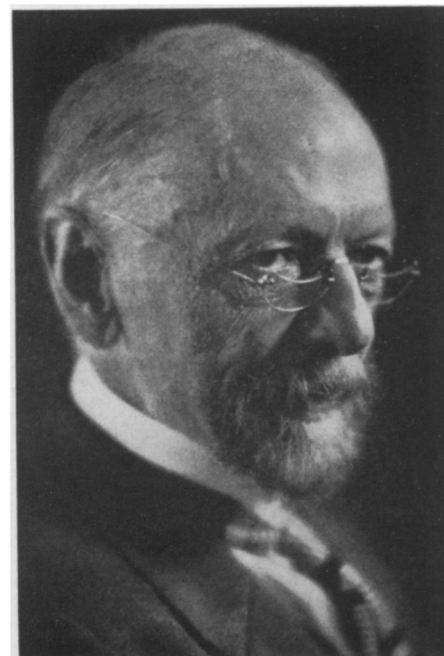
many of Mr. Ives' expired patents used as a basis for new color films.

One of the first specimens of Mr. Ives reproducing process appeared in Godey's Lady's Book in 1881, and by 1886 the half tone screen made its appearance in his work. Not only did the introduction of the half tone process make photographic reproduction possible in newspapers, but it revolutionized the printing of dailies since dry, instead of wet, paper was used, and a better ink was necessary.

Mr. Ives is now devoting his entire time to the explanation of his simple three-color process of color photography. No elaborate equipment or cameras are necessary. Two plates are used, face to face, in any camera. These plates are developed. From one a blue print is made. From the other a film is made that is treated with certain dyes. The second film is placed over the blue print and a finished print, since the two adhere to each other, is obtained. It is possible to make as many prints, and covering films, as desired from the two plates. The resulting print is a thing of beauty and a faithful reproduction.

Mr. Ives derives great pleasure in his personal contacts, and correspondence with amateurs, and looks forward to seeing his simplified color photography used by the many thousands of camera enthusiasts throughout the world. Free use of his patented Polychrome process is his birthday gift to amateur photographers.

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FREDERIC EUGENE IVES