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Perkin Centennial

The American Association for the Advancement of Science has joined with many major scientific societies of this country to recognize, during the week of 10-16 September, the completion of the first century of the commercial preparation of synthetic dyes.

The synthesis of mauve by 17-year-old William Perkin in 1856 was not the first synthetic coloring matter, for such compounds as picric acid had been prepared prior to this time. It was, however, the commercialization, in the form of syntheses on an industrial scale, of mauve for the purpose of dyeing of fibers which characterized this step as an important milestone in our advancing scientific civilization.

Many of the great discoveries of science have been made as a result of careful scientific observation and noting the by-products of, or variations to, the expected reaction or effect. Perkin was not attempting to synthesize a dye when he made his great discovery. Actually he was trying to synthesize quinine by the inverse process of putting into his reaction mixture substances which he knew were produced by decomposition of the original material. Among the products obtained from quinine was aniline, and the product that he obtained in this inverse-brew included a dark-colored mass. Upon extraction, this tar gave a brilliant purple solution which effected a direct dyeing on silk and wool.

Although the original idea of just mixing substances together may not have been strictly scientific, Perkin did his work with care and kept good records, so that it did not take him long to arrive at the important observation that it was an impurity in the aniline—namely, toluidine—which was responsible for the formation of the colored compound. Perkin's great contribution was the development of the process to a reasonable commercial scale so that the industry of synthetic dyes could be established.

Today there are very few natural dyes that have not yielded to synthetic production, and, by modification of structure, improvements have been made on the stability, color values, and application procedures for the dyes. Today there are synthetic dyes available, literally by the thousands, for special uses, such as indicators, biological stains, medicinals, and many important research requirements as well as the principal usage for clothing and decoration applications.

The synthetic dye industry has become a major chemical industry throughout the world, and the United States has made increasingly significant contributions to its development during the last quarter of a century.

The Perkin Centennial program being held in New York City this week has presented a distinguished group of European and American experts, who have discussed the economic, social, chemical, psychological, historical, and commercial aspects of color. In this cooperative celebration, the American Association for the Advancement of Science has assisted in the portion of the program that deals with the history of color.—WALLACE R. BRODE.

