

Sketches from the History of the Textile Industry

John Mercer and Mercerization

By A. J. KIESER

It is not often that the professional world is as generous in according fame to scientists and inventors as it was towards the man who in the forties of the last century made a series of observations on the influence of caustic soda on cotton. It is already extremely rare that the name of an inventor or scientist is so completely associated with the

invention that it is accepted as a new term in our vocabulary; thus, galvanizing, and pasteurizing are terms derived from the name of the inventor of the process: Galvani and Pasteur. In the case of John Mercer even more consideration has been displayed by describing as "mercerization" primarily something which Mercer himself did not dis-

cover, namely to impart increased luster to the cotton fiber.

Nevertheless, it should be most interesting to delve into the history of the word "mercerization" within the scope of these sketches, as many are not aware of its origin and, therefore, often a wrong spelling even in professional literature may be encountered.

In addition, it is fortunate that this sketch can be illustrated with a picture of Mercer—perhaps for the first time in textile literature—the photograph having been found among the estate of the famous chemist Heinrich Caro¹.

The picture from which the accompanying reproduction was made is a photograph on cloth (probably shirting) in an excellent blue-violet tone. The following lines from Caro's hand were found with it: "This photograph of the famous English calico printer, John Mercer (the inventor of many printing and dyeing processes and especially of the mercerizing process which has come into general use in recent years and which has been designated after his name) was made by himself. It was received in the early sixties of the last century from John Dale, my then partner in Manchester to whom it was presented by Mercer....."

In 1844 Mercer filtered caustic soda through cotton cloth and observed the following phenomena: A decrease of the specific gravity of the filtrate, and an increase in the closeness of the texture and tensile strength of the cloth; this was supplemented later on with the observation of an increased affinity of the material treated with caustic soda for dyes. These three observations form the essence of Mercer's first patent, for which he applied in 1850.

It seems that Wilhelm Heinrich von Kur-

¹Director of the Badische Aniline and Soda Fabric in Ludwigshafen on the Rhine from 1868 till 1889 and a member of the board until his death in 1910. One of the pioneers of the coal tar industry.

rer (printer and colorist) especially recognized the significance of Mercer's work. In his book "The Newest Discoveries and Inventions in the Art of Printing and Dyeing Treated from a Scientific and a Practical Point of View," Berlin, 1858, he describes how Mercer's process may be used to improve the closeness of the weave as well as the physical appearance of cotton fabrics. He further calls attention to the increased affinity for dyestuffs, and points out that the mercerizing process should find a particularly useful application in the finishing of white cotton goods.

But neither Mercer nor Kurrer established the fact that the real mercerizing luster is produced under tension. It was the technical chemist Horace Arthur Lowe of Heaton Moor in Lancashire, who, while he was trying to prevent the shrinking caused by the concentrated caustic soda, reported that stretching during the mercerizing process produced luster, although he was not aware of the importance of his observation (Engl. Pat. No. 4452 of March 15, 1890).

It was only about half a century after the experiments of Mercer that the mercerizing industry for the production of silk-like cotton was established.

It remains to give a short account of the life of Mercer in a few words. John Mercer was born February 21, 1791 at Dean in the parish of Great Harwood near Blackburn in Lancashire as the son of the owner of a small cotton mill. Beside his master work which has been described briefly here, he has many other inventions to his credit which he utilized partly in a rather unselfish manner. The self-educated chemist-philosopher was a member of the Royal Society, and of the Chemical Society, and died on November 30, 1866 in his 76th year. He was put to rest in the family vault (St. Bartholomew's Church) at Great Harwood.

