Developments of Textile Engineering in Postwar Japan as Science and Industrial Techniques

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It was since the end of the second world war, particularly the late ten years or so, that studies of textile machines, processing and products in Japan grew to a state worthy of calling a full fledged division of engineering science both regarding systematic theories and quantities of knowledge accumulated. It is the author's impression that two factors contributed seriously to this remarkable development. One is that the number of research engineers in this field greatly increased over the prewar figures, and the second is that these engineers were quite diversified in their background of training, which were applied physics, basic engineering, applied chemistry, mechanical and electrical engineering and so on.

Among the various fields of the post war textile engineering that showed most remarkable advances in Japan are such fields as drafting theories, sliver structures, perlock spinning theories and the studies on the texturing of filament yarns.

The rapid and revolutionary progress in science and engineering since the war naturally affected the textile industry. The textile machines and the textile processes themselves were greatly improved. These textile machines became faster in speed, high in efficiency and automatic controls were introduced into various stages of those processes. The qualities of textile goods showed great improvements and various kinds of novel processes and machines were introduced in the fields of spinning, weaving and finishing.

Among these new machines in which that the Japanese textile men take pride are several kind of the continuous-automatic spinning systems that led the world, OM-S type super-high draft spinning frames, improved pneumatic stripping devices and automatic doffers for ring frames.

Since these continuous-automatic spinning systems however, placed emphasis on the processes from opening to drawing, reductions in the number of ring frame and winder attendants have not been sufficient.

For this reason, Japan in recent years joined in other countries to develop the open end spinning which is expected to fully rationalize the spinning and winding stages. Mill tests of prototype machines are already in progress and their outcome is being watched with keen interest.

The textile Machinery Society of Japan as one of its 20th anniversary activities compiled an extensive review of the world's progress in the textile engineering by classifying the research and development works into some one dozen groups to look back their implications on the developments took place in Japan.

In the present issue we selected to discuss drafting theories, perlock spinning theories, the continuous-automatic spinning systems and studies on textured filament yarns, since these were the fields that showed the greatest progress in Japan.

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