

and to remove hemicelluloses must include alkaline treatments, with the danger of removing the intercellular cement, at least in part. A compromise seems indicated—the use of the mildest oxidative and alkaline treatments that will give a worth-while result; pure cellulose will not be obtained and some after-yellowing must be faced. The problem is to find the conditions that give the best compromise. The alternative is to scour thoroughly and chemically obtaining practically pure and very slightly degraded cellulose but very poor yarn or fabric strength; then we may attempt to introduce an artificial resin to replace the natural cement lost in bleaching.

Whether it may be possible to put some substance on the bleached fibre which, like alcohol, will be preferentially oxidised and so prevent yellowing for a considerable period remains to be seen. There are many difficulties; the substance would, in the case of goods

that are exposed to the weather, have to be insoluble in water and in the case of goods that are to be laundered, it would have to be fast to washing. Laundering presents its own problems; we may produce a bleached jute material that retains fairly good wet-strength but experience shows that in repeated launderings there is a progressive loss in strength, no doubt due to the progressive removal of the inter-cellular cement. This has caused difficulties with tropical suitings made from a cotton warp and a partly bleached jute weft.

1. Kuchinka, *Melliand Textilber.*, 1939, 20, 643, 708, 759, 804. 2. B. P., 561, 834 of the Mathieson Alkali Works, New York. 3. Ridge and Little, *J. Text. Inst.*, 1944, 35, 134. 4. Giertz, *Svensk Papperstidn.*, 1945, 48, 317. 5. Elgin, *U.S. Patent*, 1945, 2, 372, 561, Princeton. 6. Chatterjee and Sarkar, *Proc. Nat. Inst. Sci.*, 1946, 12, 23.

FOREIGN CO-OPERATION IN THE DEVELOPMENT OF INDIAN INDUSTRIES

IN the course of his Presidential Opening Remarks at the Third Quarterly Meeting of the Central Committee of the All-India Manufacturers' Organization, held on December 22, 1946, Sir M. Visvesvaraya revealed that there had been offers of co-operation for starting new industries or companies in India. Some foreign business firms were ready, on reasonable terms, to work out new schemes, tender technical advice and arrange to procure and supply the machinery needed. Some of those firms were prepared to find capital if reliable groups of industrialists in this country felt the need.

During their discussions with the associations and business men, consulting engineering firms and others, he said that they took care to tell them again and again that promoters of new industries here were not likely to accept technical advice, machinery or even share capital for industries in India unless the control of every such concern was in Indian hands. He felt that this condition could be assumed and suggested that if the Government had no particular objection, groups of industrialists or business men, eager to establish new heavy industries in any part of the country, might be encouraged to begin collecting preliminaries and making preparations with a view to starting construction at the earliest favourable opportunity.

He had often thought that the importance of industries was not correctly understood by the people of India. In no country were industries promoted unless political power was behind it. In the absence of any sound industrial policy or drive on the part of the Government, the business public had been suspicious and slow in investing in industries. As has often been said, a balanced development of both Agriculture and Industries was essential for increasing the earning power and standard of living of our people. As far as possible all ordinary wants in the shape of consumer goods should be met by local production. Success in modern warfare was preponderatingly dependent on armament machi-

nery, which was a product of highly developed skill, particularly in the manufacture of engineering industries. Industrial progress was vitally connected with the defences of a country.

Concluding his address, Sir M. Visvesvaraya declared that "now even more than formerly, in this closer-knit of the world, the men with knowledge and skill will have the upper hand everywhere and the ignorant and the unskilled will be relegated to a subordinate place under some one or other strong power."

"In our country, peoples' thoughts and practices are still guided to some extent by religion and tradition. Tradition is often a wrong guide in the face of modern discoveries. Americans have been almost always against it and they take every opportunity to carry out reforms and developments. Hence they have become the most prosperous and powerful nation in the post-war world."

"If we educate our 340 million population, now illiterate, and teach them modern business habits and practices, the country will acquire enormous power for increasing production and good living."

"People in India should be economically united as are people in the United States of America, Canada and the United Kingdom. The nation-building activities I have referred to cannot be delayed without great loss. Unity among the population is required for its economic safety even more than the political. Economic unity cannot be delayed without further impoverishment of the population and curtailment of their subsistence needs. The chief elements of progress are unity of purpose between the Government and the people, team spirit in industry, co-operation between all classes of population in business and social life, and a strong resolve to work more and work better on the part of every individual citizen and his family. If the Government and the people become united in policy and action in this way rapid progress will be speedily achieved and the country will be bringing into existence a new national life."