

a short but excellent account of the purely chemical processes, followed by a description of the nature and properties of films formed in various electrolytes under the application of direct or alternating electric current. The treatment is lucid and comprehensive, covering both theory and practice, and serves as an excellent introduction to a very detailed account of the commercial anodizing processes. This covers pretreatment, plant installation, operating conditions for various electrolytes, and after-treatments such as sealing, dyeing, and impregnation with inorganic pigments. Practical difficulties, whether arising from faults in the material or from errors during anodizing, are dealt with at length, and information is given on plant and process control, and on the testing of the product. The sections on process control are excellent; but those on testing leave something to be desired. Physical tests on anodized material are adequately described; but for assessing liability to corrosion, only accelerated tests such as the Mylius are considered, and nothing is said about their reliability. For chemical control of the metal to be anodized, the reader may be led to infer that qualitative spot tests are generally sufficient and that full quantitative analyses are rarely needed.

Applications of anodized aluminium in household ware, architecture, instrument-making and chemical plant are critically described, with reasoned statements on the most suitable type of film for each purpose. The book concludes with a chapter on the cost of plant, operation and upkeep.

The printing, binding and quality of illustrations leave nothing to be desired, even by pre-war standards, and one can only regret that the book is not in English and that the price is so high.

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## TAXONOMY AND EVOLUTION OF COTTON

### The Evolution of *Gossypium*

And the Differentiation of the Cultivated Cottons.  
By J. B. Hutchinson, R. A. Silow and S. G. Stephens.  
Being the Final Report of the Genetics Department,  
Cotton Research Station, Trinidad, B.W.I. Pp. xi +  
160. (London, New York and Toronto: Oxford  
University Press, 1947.) 15s. net.

THE function of the Empire Cotton Growing Corporation is to assist in the promotion of cotton-growing in the various countries of the British Empire or Commonwealth. This aim is largely realized by close co-operation with the local governing authorities in the various territories, by carrying out a wide programme of research designed to maintain or improve the quality of the crops and to increase yield by selection and initial expansion of new seed stocks, by overcoming and circumventing pest and disease attack, and by effecting improvements in many aspects of tropical and sub-tropical crop husbandry. The Corporation started a main Cotton Research Station in Trinidad in 1926 and encouraged fundamental studies in botany, plant physiology and genetics so that cotton breeders would have firmer foundations for their work on the commercial cotton crops. The increasing complexity of many modern problems necessitates a considerable extension in this side of the work of the Corporation. The Trinidad Station has been closed and a new, larger station is

being established in Uganda, where closer contact with the field-workers in Africa may be made.

The transfer of activities from Trinidad to Uganda has caused a temporary but unavoidable halt in many activities. The joint authors of the book under notice have therefore taken this opportunity to review the progress made while they were working as a team in the Genetics Department in Trinidad, and to survey many lines along which future research could be usefully directed. Many of the authors' detailed investigations have been published separately from time to time. The present work reviews the genus *Gossypium* as a whole by covering its classification, evolution and present position on a basis broadened by critical use of much published work of other workers. For convenience, the book is divided into four main sections.

"The Wild and Cultivated Cotton Plants of the World" (1907), by Sir George Watt, is the almost classical monograph on the taxonomy of cotton. In the light of more recent advances in the field of genetics and cytology, coupled with morphological considerations, Hutchinson has revised the classification of the genus on a simplified basis, dividing it into eight sections, of which two contain the cultivated commercial cottons and six embrace the wild species.

The evolution of cotton is covered by Hutchinson and Stephens. Consideration is given to the identification of the major factors which governed the evolution of true 'commercial' cottons from the wild, and often virtually lintless, species. The origin of first the Old World cottons, with the basic chromosome number in the genus of  $n = 13$ , and then the New World cottons, with  $n = 26$  chromosomes, comprising a set of thirteen homologous with the genom of the cultivated Old World species and a set of thirteen homologous with that of the wild American species, will prove of interest to many ethnologists as well as to biologists.

These evolutionary studies are pursued further by Hutchinson and Silow in the third section, which covers the differentiation of cotton, as the spinner knows it, into the complex of major and minor types by man.

In the last section, Hutchinson and Stephens consider how new characters arise and the part played by polyploidy. Brief consideration is given to the nature of genetic variability and to the question of its often desirable conservation when it may aid adaptation to varied local conditions. Many of the views expressed should be of both practical and general interest to breeders working on the present commercial types.

No doubt individual workers in the genetics of cotton may disagree in part with particular views held by the authors; but agreement will be general that a work of this type was long overdue, and that it will facilitate adequate interpretation of the many contributions made in this field in recent years. From the angle of the textile technologist, the basic groundwork of cotton genetics may seem to be a matter of academic rather than of practical interest. Nevertheless, only fundamental studies in the fields mentioned above will make it possible to effect major improvements in the present cottons of commerce by the formation or transference of desirable fibre characteristics, by inducing immunity to disease or resistance to pest attack, or by obtaining increased yields through greater adaptability to varied growth-conditions.

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