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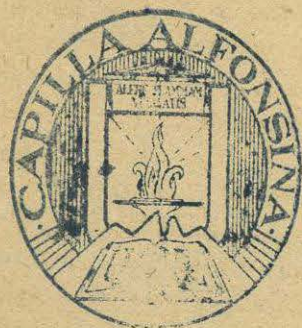
LONDON:
CHARLES GRIFFIN & COMPANY, LIMITED,
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PREFACE.

THE manufacture of rubber goods has grown to be so large an industry, and includes such a variety of detail, that it is surprising no comprehensive treatise on the subject has hitherto appeared. The late Dr C. O. Weber had promised a companion book to his standard work *The Chemistry of India Rubber*, but this was prevented by his lamented death. As soon as the German book, *Handbuch der Gummiwarenfabrikation*, by Drs Heil and Esch, appeared, the publishers of Dr Weber's book at once realised the utility of an English edition, and arranged to add it to their Technological Series.

The learned authors in their Preface indicate that their object was to provide a work treating in a connected way the various branches of the actual manufacture of rubber, or at least of such branches as are of general importance, so that specialists in rubber and others interested might have a complete treatise.

The book deals with the principles which apply to the manufacture of all rubber goods, and any advances which may have taken place since the publication of the original work have been solely in matters of detail, and do not lessen its value.

The English Editor has followed as closely as possible the original text and its arrangement, adapting it where necessary in regard to the machinery more generally in use in this country.

The subject being dealt with from the standpoint of the manipulation of raw rubber subsequent to its leaving the plantations, it has not been deemed necessary to discuss the very open question of plantation-grown rubber, although this is a matter of great importance, as upwards of a thousand tons were produced in the year 1907.

Thanks are tendered to several friends for kind assistance, especially to Messrs D. Bridge & Co. and F. Shaw & Co. of Manchester, for valuable drawings and other illustrations.

EDWARD W. LEWIS.

LOUGHTON, ESSEX,
April 1909.

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RUBBER MANUFACTURE.

INTRODUCTION.

IN accordance with the general scheme of this work, the scientific and theoretical portions have been purposely limited to what was absolutely necessary and essential, for the little that is known with scientific exactitude about rubber must still be looked upon as more or less fragmentary. The book, therefore, begins with a description of a convenient factory and plant, theoretical questions being generally dealt with in connection with the practical matters on which they bear, an arrangement which is likely to facilitate reference.

PLAN AND ARRANGEMENT OF A RUBBER-GOODS FACTORY.

In whatever sphere of industry a new enterprise be initiated it is essential, in these progressive times, that the fullest possible use be made of every real advance that has taken place and of every substantial improvement brought about within that sphere. The rubber industry is pre-eminently of that class which demands the greatest possible degree of perfection in mechanical equipment, if the universal competition of to-day is to be successfully met, and at the same time a first-class product is to be put on the market. As everyone interested in the matter is aware, the success of any given class of rubber goods is largely a matter of confidence on the part of the buyer, and a new product can only make its way side by side with others already known if it offers some advantages to buyers. The only way, however, in which it becomes possible to offer such advantages, without detriment to profits, is by so adjusting plant and equipment as to reduce the wages bill to a minimum, by the adoption of economical methods of manufacture, and by avoiding waste. In the first place, the buildings should be so arranged that the separate workshops, in which the different stages in the process of manufacture are carried through, are continuous with