

**RESEARCHES ON
CELLULOSE
III (1905-1910)**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649692439

Researches on Cellulose III (1905-1910) by C. F. Cross & E. J. Bevan

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

C. F. CROSS & E. J. BEVAN

**RESEARCHES ON
CELLULOSE
III (1905-1910)**

RESEARCHES ON CELLULOSE

III

BY THE SAME AUTHORS.

CELLULOSE

An Outline of the Chemistry of the Structural
Elements of Plants. With reference to their
Natural History and Industrial Uses.

With 14 Plates.

Crown 8vo. 12s. net.

RESEARCHES ON CELLULOSE

I., 1895-1900.

Crown 8vo. 6s. net.

RESEARCHES ON CELLULOSE

II., 1900-1905.

Crown 8vo. 7s. 6d. net.

LONGMANS, GREEN AND CO., 39 Paternoster Row,
London, New York and Bombay.

RESEARCHES ON CELLULOSE

III

(1905-1910)

BY

CROSS & BEVAN

(C. F. CROSS AND E. J. BEVAN)

LONGMANS, GREEN AND CO.

39 PATERNOSTER ROW, LONDON
NEW YORK, BOMBAY AND CALCUTTA

1912

All rights reserved

PREFACE

For reasons stated in the text the plan of the present volume, No. III. of the series, is modified from that of the preceding. It is presented rather as a personal and impressionist view of progress in research in the field of 'Cellulose' for the period 1905-10. The preparation of the work has been delayed to include research work published in 1911.

In regard to the future, and the progress of research, it is clear to us that no chemist can approach the subject of 'Cellulose' in any comprehensive way without meeting with problems belonging to general philosophy.

On this broad platform of thought no writer, who claims to be a student, will presume to have any special insight: the reader, according to temperament, will either elect to live with such problems or accept the 'contracting out' attitude of those who find the fascination of investigation and discovery exclusively sufficient for the intellectual day.

We have ventured to deal with one or two questions of this order, which appear to be inevitable in the sense that they are invariably presented to young students in the formal textbooks of the science.

And it is only to the young student that we address ourselves in enjoining the duty of clear thinking, should he be

interested in pursuing problems which belong to the general perspective of the science.

As to progress in the special sense, and any probable contribution resulting from research in the field of cellulose, we cannot ourselves avoid very positive anticipations of a much deeper knowledge of matter, as matter, to follow from the application of physical methods to the investigation of cellulose, its derivatives, and its analogues of the group of colloidal carbohydrates.

To this end we hope the present notes from one of the active centres of research may contribute.

We have to acknowledge the assistance of Mr. W. N. Bacon, B.Sc., in the correction of the proofs and the preparation of the index.

CONTENTS

Chap.	Pages
I. General Review—Cellulose in relation to Biological Science	1-17
II. Cellulose—Normal Cellulose—Constitution	18-57
III. Cellulose Esters—Acetate and Comparative Studies of Acetylation—Formyl Derivatives—Xanthogenic Esters	58-97
IV. Ligno-Celluloses—Reactions with Halogens—Constitution—Study of Autoxidation	98-123
V. Technical Developments — Textile Industries: Bleaching — Paper-making — Commercial Jute and "Heart-Damage"—Special Industries—Artificial Fibres—Film Products—Applications of Cellulose Acetates	124-170
Index of Authors	171
Index	172