

**BUILDING MATERIALS; BEING AN
INTRODUCTION TO THE STUDY
OF THE PRINCIPAL MATERIALS
USED IN BUILDING
CONSTRUCTION**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649130825

Building materials; being an introduction to the study of the principal materials used in building construction by A. P. Laurie

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.

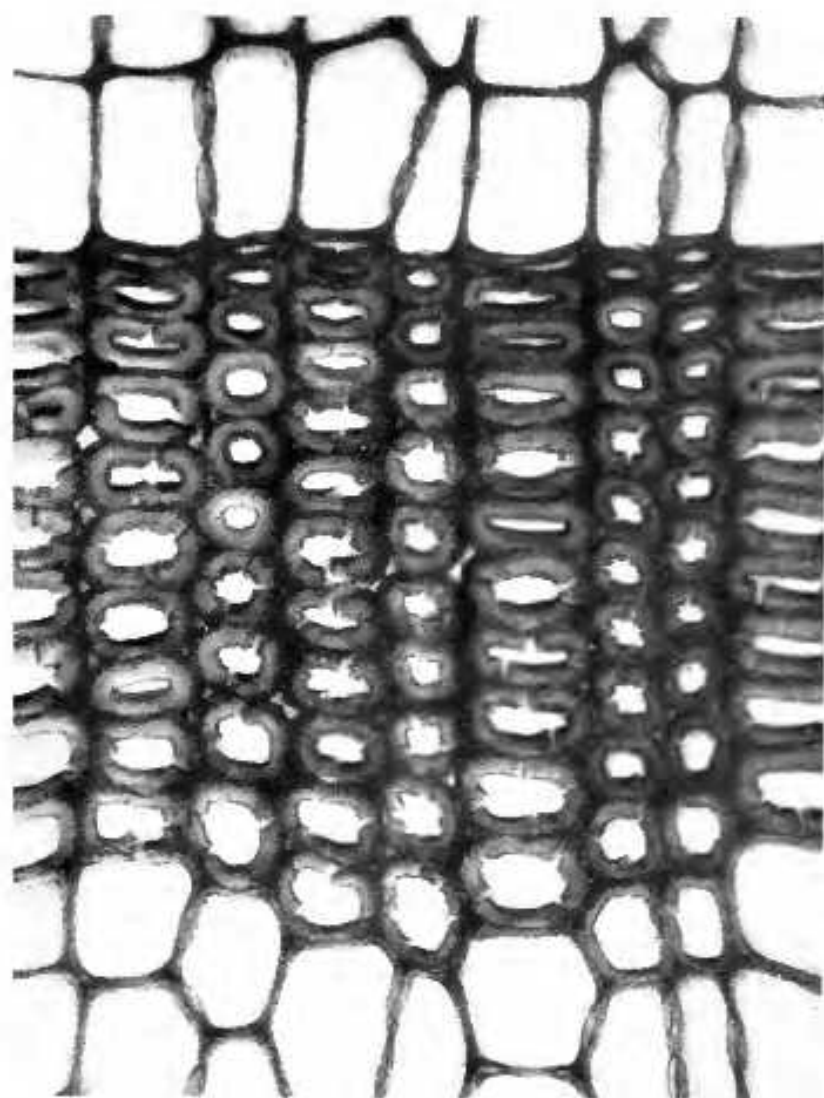
www.triestepublishing.com

A. P. LAURIE

**BUILDING MATERIALS; BEING AN
INTRODUCTION TO THE STUDY
OF THE PRINCIPAL MATERIALS
USED IN
BUILDING CONSTRUCTION**

505^{cr}

BUILDING MATERIALS



Cross section of the wood of Western Larch, showing fissures in the thick-walled cells of the late wood due to drying (*Mechanical Properties of Wood*, by S. J. Record). See page 144.

1713

BUILDING MATERIALS

BEING AN INTRODUCTION TO THE
STUDY OF THE PRINCIPAL MATERIALS
USED IN BUILDING CONSTRUCTION

BY

A. P. LAURIE, M.A., D.Sc., F.R.S.E., F.C.S.

*Principal, Heriot-Watt College, Edinburgh; Professor
of Chemistry to the Royal Academy*

281443
13... 1.. 33

OLIVER AND BOYD
EDINBURGH: TWEEDDALE COURT
LONDON: 33 PATERNOSTER ROW, E.C.

1922

PREFACE

THIS book is intended to be an introduction to the study of Building Materials for the instruction of the young builder and architect.

Only the principal materials are dealt with, special stress being laid on the exact examination of the materials for their constructional strength under different conditions, and their composition as revealed by chemical analysis, and by the microscope.

The author realises that some, at any rate, of his readers may be unacquainted with the elements of chemistry. He has, therefore, tried to make the essential chemical information as simple as possible at the risk of some repetition.

The student is advised to regard this book as merely introductory, and pursue his studies further by reading, more especially, Howe's *Geology of Building Stones*; *The Materials of Construction*, by Johnson; *The Chemistry and Testing of Cements*, by Desch; *Concrete, Plain and Reinforced*, by Taylor and Thompson; *Modern Brickmaking*, by Searle; *The Mechanical Properties of Wood*, by Record; *House Painting and Decoration*, by Jennings; and *Modern Asphalt Pavements*, by Richardson.

The author wishes at this point to express his deep indebtedness to these text-books in particular, as well as to others, for the information contained in the following pages.

In addition, various text-books, the publications of the Engineering and Architectural Societies, both here and in America, and the Reports of the Washington Bureau for the investigation of Building Materials have been consulted.

Students interested in the resistance to fire of various materials should consult the Reports of the Department of Scientific and Industrial Research.

The author wishes especially to thank Professor Desch, Mr Scarle, Mr Howe, Mr Borthwick, Mr Jennings, and Mr Vaughan for having kindly looked through the chapters in which they are specially interested, and made many valuable criticisms and suggestions.

A. P. LAURIE.

CONTENTS

CHAP.	PAGE
I. BUILDING STONES AND THEIR DISTRIBUTION	1
II. THE WEATHERING OF BUILDING STONES	31
III. LIME, NATURAL AND PORTLAND CEMENT, BLAST FURNACE SLAG, PLASTER OF PARIS, MAGNESIA	46
IV. CONCRETE	73
V. BRICKS	90
VI. TERRA-COTTA, PISÉ-DE-TERRE, ASBESTOS	114
VII. STEEL, LEAD, ZINC, TIN AND BRASS	122
VIII. TIMBER	135
IX. PAINTS AND VARNISHES—WALL PAPER—STOCK- HOLM TAR, COAL-TAR PITCH—CREOSOTE OIL —KNOTTING—PASTE—WILLESDEN FABRICS— GLUE—SIZE—PUTTY—ASPHALT	154
INDEX	181

