

**FOREST MENSURATION.
TABLES FOR MEASURING
LOGS, TREES AND THE
GROWTH OF STANDS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9781760570774

Forest mensuration. Tables for measuring logs, trees and the growth of stands by R. T. Fisher & H. O. Cook

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

R. T. FISHER & H. O. COOK

**FOREST MENSURATION.
TABLES FOR MEASURING
LOGS, TREES AND THE
GROWTH OF STANDS**

2

FOREST MENSURATION

TABLES FOR MEASURING LOGS,
TREES AND THE GROWTH
OF STANDS

BY

THE MASSACHUSETTS STATE FORESTER

H. O. COOK, *Chief Forester*

THE HARVARD FOREST

R. T. FISHER, *Director*

PUBLISHED BY

THE COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF CONSERVATION

W. A. L. BAZELEY, *Commissioner*

BOSTON

WRIGHT & POTTER PRINTING COMPANY, STATE PRINTERS

32 DERNE STREET

1921

PUBLICATION OF THIS DOCUMENT
APPROVED BY THE
SUPERVISOR OF ADMINISTRATION.

CONTENTS.

	PAGE
Introduction	5
Board foot, the	7
Log rules	8
Log rule for oak	10
Log rule for pine	11
Log rule for chestnut	14
Log rule for yellow birch	15
Log rule for beech	19
Log rule for sugar maple	22
Volume tables	25
Tree caliper	27
Volume table for oak	28
Volume table for pine (in board feet)	29
Volume table for pine (in cords)	30
Volume table for pine (in cubic feet)	31
Volume table for chestnut (in cords)	32
Volume table for chestnut (in board feet)	33
Volume table for red maple (in cords)	34
Volume table for red maple (in cubic feet)	35
Per cent solid wood in maple cord wood	35
Number of maple trees required to yield one cord	36
Volume table for yellow birch	37
Volume table for sugar maple	43
Volume table for beech	46
Yield tables	48
Yield tables for better hardwoods (in cubic feet and cords)	49
Yield tables for better hardwoods (in board feet and cords)	51
Yield tables (inferior hardwoods)	53
Yield table for pine	54
Yield from thinnings	55
Growth	55
Growth tables (growth in volume)	57

	PAGE
Growth tables (growth in height)	58
Growth tables (for white spruce)	59
Miscellaneous notes	59
Sawing boards and planks	60
Band saw versus circular	61
Round edge versus square edge	62
Squaring round-edged boards	64
Equivalent factors	66
Measurement of fuel	68

INTRODUCTION.

In 1908 the State Forester published, under the title "Forest Mensuration of the White Pine," a booklet containing most of the data on the white pine included in this bulletin. A second edition was published in 1911, and as that is now exhausted a third edition seems necessary. Since the original investigation of the white pine was made the Department has also collected similar data on other species, and the Department of Forestry at Harvard University has in its research work published a large amount of information along similar lines. It seemed to the Commissioner of Conservation that these tables, many of which are very valuable and interesting to the forest owner, should be made available for use of the general public by including them with the original material. Director R. T. Fisher of the Harvard Forest has very graciously accepted this suggestion, and has turned his material over to us for use in this bulletin. To Mr. H. O. Cook, M.F., the author of the original bulletin on white pine mensuration, has been assigned the task of compiling and editing the present publication.

WM. A. L. BAZELEY,
Commissioner of Conservation.

FOREST MENSURATION.

THE BOARD FOOT.

The unit of measure on which sawed lumber is almost universally sold in the United States is the board foot, which is a board 12 inches square and 1 inch thick. In southeastern Massachusetts, however, they have a practice of sawing lumber five-eighths inch thick, and they call a board foot a board which is 12 inches square and only five-eighths inch in thickness. The variation is often the cause of some misunderstanding by those who are ignorant of the local system. The number of board feet in any given piece of lumber is obtained by multiplying the product of the width and thickness in inches by the length in feet, and dividing by 12. For instance, a plank 8 inches wide, 2 inches thick, and 12 feet long will figure as follows: $\frac{2' \times 8'' \times 12'}{12} = 16$ board feet.

Professional scalers have a board rule which is laid across the width of a board, and on the rule are given the board-foot contents of that particular width and length, provided it is 1 inch thick. If, however, it happens to be thicker, say $1\frac{1}{2}$ inches instead of 1, the scale as indicated on the rule must be increased 50 per cent to allow for the additional thickness. The scaling of square-edge lumber with straight and parallel sides is a mere mechanical process, but it happens that most of our native lumber cut in Massachusetts is sawed through and through, with the bark left on the edges. Such lumber is narrower on one face than on the other, and the board is