

THE MARKETING OF LUMBER  
IN NEW HAMPSHIRE

1925

# HARVARD FOREST

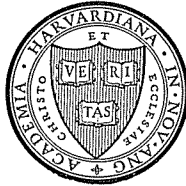
BULLETIN No. 10

RICHARD T. FISHER, *Director*

## THE MARKETING OF LUMBER IN NEW HAMPSHIRE 1925

BY A. C. CLINE

*A SURVEY CONDUCTED FOR*  
THE NEW HAMPSHIRE LUMBERMEN'S  
ASSOCIATION



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## PREFACE

THE New Hampshire Lumbermen's Association, at its summer meeting in July, 1925, voted to ask the Harvard Forest to undertake a survey and study of lumber consumption in New Hampshire. The Association further voted to contribute \$1000 toward the cost of the work. The objects of the survey were to inform producers of all possible outlets for their particular stock; to regain if possible some of the trade in medium grade softwood now held by western and southern operators; to assist consumers in locating their requirements locally instead of incurring high freights by buying from distant points; to see if changes in manufacture or of grading will not prove mutually profitable to producer and consumer; and to bring about a better and wider market for all kinds of lumber grown in New Hampshire.

The resulting information here presented deals exclusively with lumber and logs as used in manufactures, building, etc.; pulp wood, ties, and poles are omitted. The facts were obtained almost entirely by personal interviews. A list was made up from those published by the principal credit rating companies and from the membership of the State Association. This combined directory was further enlarged in the course of the canvass, since every town in the state was visited and a number of concerns interviewed which did not appear upon any list. Thus, the classified directory of wood users published herewith is probably more complete than any such list so far prepared, and the figures and information pertaining to the industry as a whole should be correspondingly complete and accurate.

The great bulk of the field work, together with the labor of summarizing the figures and information, was done by Mr. A. C. Cline, Assistant Director of the Harvard Forest.

He was assisted in some of the field work by Messrs. N. W. Hosley, Forest Assistant, and Mr. C. B. Gutchess. Mr. Owen Johnson, President of the New Hampshire Lumbermen's Association, aided the organization and conduct of the work very materially by his wide acquaintance with the lumber trade in the state.

Acknowledgments are also due to Mr. J. H. Foster, State Forester of New Hampshire, who furnished much helpful information, and from whose records is taken the directory of operators that is included in the report.

R. T. FISHER.

## TABLE OF CONTENTS

### PART I

General Marketing Conditions in New Hampshire, by R. T. Fisher . . .	7
--	---

### PART II

#### SUMMARIES OF UTILIZATION BY INDUSTRIES WITH TABLES SHOW- ING FOOTAGE ACCORDING TO SPECIES, SIZES AND SOURCES

Boxes and Shooks . . . . .	13
Retail Lumber . . . . .	17
Woodenware, Novelties and Miscellaneous . . . . .	22
Cooperage and Tanks . . . . .	27
Furniture, Cabinets and Refrigerators . . . . .	30
Planing Mill Products . . . . .	34
Sash, Doors and Blinds . . . . .	38
Bobbins and Spools . . . . .	41
Crating, Mill Repair, Machinery Manufacture and Foundries . . . . .	44
Cars, Vehicles and Boats . . . . .	49
Wood Turning . . . . .	52

### PART III

Directory of Consumers Arranged Alphabetically by Industries . . .	55
List of Timber Operators . . . . .	69

### PART IV. APPENDIX

Sources of Information for Lumbermen and Wood-Users . . . . .	77
---	----



## PART I

### GENERAL MARKETING CONDITIONS IN NEW HAMPSHIRE

ACCORDING to the U. S. Forest Service, production of lumber in New Hampshire has declined from 754 million board feet in 1907 to an average of 302 million for the period between 1915 and 1921. The present survey indicates an annual production between 250 and 300 million. In this total softwood exceeds hardwood by about eight to one. Of the softwood nearly two-thirds is pine, and since all but a small percentage is used in box making or in industries with similar requirements, it is plain that the main problem for producers is the successful marketing of low to medium grade pine.

The accompanying table shows how consumption is distributed among the principal types of user, and with approximate accuracy, where the lumber is produced. The figures show that nearly half of the year's lumber supply is produced outside the state. They do not show however, what the canvass itself brought out very strongly, namely, that the main factors responsible for the marketing difficulties of native lumber are: (1) shrinkage in utilization for low grade softwood; (2) falling off in the grade and quality of the lumber produced; and (3) increasing competition from outside the state.

Since the war the use of pine boxes as containers has declined by an amount estimated as from 30 to 50 per cent. As compared with pre-war volume, the decline, though not easily ascertainable, is apparently much less. The primary reason is the recent development of the fibre, plywood and wire-bound boxes. Yet even with the inroads of these substitutes, the pine box would have a good share of the business



# TOTAL LUMBER CONSUMPTION ACCORDING TO INDUSTRY AND REGIONAL SOURCE: YEAR OF 1925

(UNIT: THOUSAND FT. B.M.)

	New Hampshire	New England	New England and New York	New England and Canada	Canada	New York	New York and Canada	Lake States	Lake States and Canada	Southern	Tropics	Western	Totals
1. Boxes and Shooks . . . . .	125368	73560	..	..	..	..	..	..	..	..	..	..	198928
2. Retail Lumber . . . . .	12326	23300	2734	..	16250	..	..	660	..	17825	..	14730	87825
3. Woodenware, Novelties and Miscellaneous . . . . .	17786	10440	..	200	210	15	275	970	..	769	..	..	30665
4. Cooperage and Tanks . . . . .	13322	12833	..	..	400	..	..	..	..	98	..	2050	28703
5. Furniture, Cabinets and Refrigerators	10646	3221	..	2400	500	..	..	50	40	1574	10	275	18716
6. Planing Mill Products . . . . .	7936	2305	..	..	800	..	..	5	..	125	..	..	11171
7. Sash, Doors and Blinds . . . . .	1478	2560	..	..	100	..	..	..	..	1085	5	5210	10438
8. Bobbins and Spools . . . . .	5800	1525	..	..	250	..	..	..	..	..	..	..	7575
9. Grating, Mill Repair, Machinery Manufacture and Foundries . . . . .	2331	1349	..	20	1555	..	..	99	..	645	..	625	6624
10. Cars, Vehicles and Boats . . . . .	618	250	..	1616	..	..	..	..	..	2981	..	100	5565
11. Wood Turning . . . . .	2111	1325	300	500	300	815	..	..	..	..	..	..	5351
Totals . . . . .	199722	132688	3034	4736	20365	830	275	1784	40	25102	15	22990	411561
Per cent . . . . .	48.5	32.2	.7	1.2	4.9	.2	..	.4	..	6.1	..	5.6	..

Amounts of lumber have been summed up under sources as stated by the persons interviewed. For example, under "New England and New York" is included only material specified as coming from the combined source.

were it not that the industry itself, — partly in consequence of the war markets — is over-capitalized, with too many plants in operation, and hampered by wasteful or inefficient selling methods. To a less extent pine pails and tubs have also lost ground to the pulp substitutes. Thus the shrinkage in the demand for box lumber is aggravated by destructive competition among the manufacturers and incidental over-production by the sawmill operators, — a condition affecting one-half of the state's production.

In recent years there has been a definite reduction in the average grade of native pine, and to a less extent of spruce and hemlock. This is due in part to a falling off in the actual quality of the log, in part to poor sawing and handling in the mills, and in part to the absence of any standardized grading. The older, larger stands of second growth have become increasingly scarce. Timber of more recent origin has been progressively less well stocked, more mixed with unsalable weed trees, and often too young when cut to have reached an economical size. The result is that the ordinary log today yields more coarse and narrow lumber than it did ten years ago (see Harvard Forest Bulletin No. 8). Furthermore, it is a general complaint that lumber is often degraded in the mills by bad judgment in cutting up the log, variable thicknesses in the board, preventable stain and checks, and other kinds of unworkmanlike manufacture. Most native softwood has been sold log run as round edge boards; few of the small producers know how to grade lumber and such grading as is done is extremely variable. There seems to be ground for believing that the standards of round edge, or through and through sawing, while satisfactory for certain industries or for conditions ten years ago, do not meet the demands of today's market, where standards of quality are more and more insisted on.

The market deficiencies of native lumber have been still further accentuated by recent and increasing competition from the west and south. Nearly 12 per cent of the consump-

tion of the state now comes from those regions, most of it taken by the retail yards and by the sash, door and blind makers. Well-made and finished, sawed to size for special uses, and sold on standard grades, this imported material is available at prices which enable it to replace much of the medium and better grades of native stock, even where the latter is intrinsically a better wood for a given purpose. Even yet, however, a substantial amount of native softwood is used for planing mill products, outside finish, etc., and its disadvantages for such purposes with respect to western lumber are chiefly price and poorer merchandizing.

With regard to the consumption of hardwood, no such significant or widespread changes have been taking place. It has not had, nor is it likely to have, the same serious outside competition; nor is it threatened with replacement by substitutes in the industries where it is chiefly used. That hardwood does not figure more largely in the buying of New Hampshire consumers is generally ascribed to even poorer practices in sawing, seasoning, and grading than is the case with softwood.

Improvement in the market for native lumber, aside from the effects of general business conditions, is to be looked for from two sources — the probable lessening of outside competition, and more stable conditions in the box industry. Owing to rising costs of production as logging proceeds to rougher, remoter districts, the price of western lumber will have to be increased, and that — in the opinion of competent authorities — fairly soon. Southern pine is likely before long to be used largely by the South itself. This will allow a more profitable outlet for that percentage of native softwood which will grade No. 2 and better. A grading test of 400,000 feet of average box lumber made by the Harvard Forest at one of the New England Box Company's mills showed eight per cent to be of this grade. Assuming for illustration that it could be economically assembled, this percentage of the pine production of the state would supply the sash and blind

factories with satisfactory lumber for a whole year. In other words, there is a fair proportion of native lumber which, properly made, should have an increasingly better market.

As for box lumber — the great bulk of production — there is prospect for a betterment of the market through the stabilization of the wooden box industry itself. It seems clear that the wooden box has a real place in the container business, probably a larger place than it now has, and the recent action of the New Hampshire Lumbermen's Association in asking the New England Council, with the coöperation of the Harvard Forest, to assemble the pertinent facts for consideration by the box manufacturers indicates that some reorganization or more effective policy may come to pass. But even if these more favorable factors took effect, all the evidence gathered in the present survey indicates that the producers themselves must meet more closely the requirements of consumers, not only in quantity, by not cutting on an over-supplied market, or without previous sale, but also in quality, by paying more attention to sawing, seasoning and grading.

The following items of desirable policy in timberland operation are taken from the report by the Harvard Forest on Lumber Consumption in the Springfield District. They are reprinted here because they are now even more forcibly suggested by conditions disclosed in the New Hampshire survey.

1. Cutting only larger, older timber. Low grade is always the difficult thing to sell. Small timber means high costs and a low yield of better grades. Too much timber is being cut that is not only hard to market for these reasons, but would be making more money for its owner if left standing. The bigger the average log or tree, the lower the cost of lumber, and better the average quality. The place to start grading is in the woods before the trees are cut. A few operators are already following this principle, especially those that own timberlands. Properly applied, it means more money from growth as well as more money per thousand feet sold.

2. Accurate sawing and proper seasoning. Apparently many of the portable type sawmills are not mechanically able to saw true sizes, even where the sawyer is competent. If this is true, the business needs a better type of mill. Certainly it should be possible to saw true to dimension, even with a small mill. Still more is it possible with reasonable common sense and efficiency to lay out a lumber yard and pile lumber so that it will not deteriorate in air drying.

3. Sawing to grade. If it were possible, and it may be before very long, some fairly standardized definitions of grades for native lumber ought to be set up and put in practice, perhaps by some of the lumber associations. Existing grades as followed in the principal wholesale centers, and to some extent in the smaller towns, are much modified by particular purchasers, and are not always easy to apply to native softwood. Even so, however, the knowledge of grading in principle, and particularly the knowledge of how to get the largest amount of the best quality out of a given log, will soon be indispensable to any producer of lumber. The portable mill sawyer who understands this kind of sawing is an exception.

4. Possible associations of producers or timberland owners. This may be a difficult idea to apply. It is not new, however, but is already in successful operation in certain branches of agriculture. One of the present weaknesses in the marketing of native timber is that so large a volume of it comes from such small holdings and in such scattered localities. Even the best lumber is at a disadvantage if there is too little to load a car. Sooner or later, if our timber is to maintain any importance in the market or be of real value to its owners, it will have to be handled in one of two ways. Either a considerable neighborhood or locality will combine to supply a local woodworking industry or finishing plant with a good share of its raw material, or else there will develop certain distribution centers with the necessary mill equipment where the logs or rough lumber produced within a practical hauling radius will be gathered together, finished, and sold in quantities large enough to make a paying business. Already enterprises of this type are in successful operation in parts of the South; and in certain especially favorable parts of New England, there are woodworking industries which have been taking the product of the same neighborhood for several generations.

5. Selling points for native pine. Many retailers have not forgotten, and still maintain, that white pine lumber, even from the present second growth, is superior, if properly made, to the western pine that is taking its place. Not very long ago white pine was a synonym for the best all-round lumber that was known.

6. Growing higher grade timber. This is a matter which, of course, does not concern the operators of the present merchantable stands. It does, however, concern the many land owners who are attempting to practice forestry. Often it is not more expensive so to handle young timber crops that a high quality of lumber will be produced instead of the poor to mediocre stand that commonly results from the usual plantations, pasture pine, or neglected hardwood stands.

## PART II

### SUMMARIES OF UTILIZATION BY INDUSTRIES WITH TABLES SHOWING FOOTAGE ACCORDING TO SPECIES, SIZES, AND SOURCES

#### BOXES AND SHOOKS

SUMMARY		
SOURCE	AMOUNT	PER CENT
New Hampshire.....	125,368 M	63
New England.....	73,560 M	37
	<hr/> 198,928 M	<hr/> 100

UNDER this heading are included shooks, nailed boxes of ordinary shook construction, lock-cornered, wire-bound, and veneer boxes, hardwood battery boxes, and high quality, finished boxes for counter displays of tools, sharpening stones, etc. White pine is the principal wood used for shook and lock-corner construction, but small percentages of the other native softwoods, chiefly hemlock, are commonly worked in with the pine. In market boxes both hardwood and softwood are often used indiscriminately, and this also holds true for boxes made by many of the small wood-using industries in the country districts. Of the hardwoods, poplar and basswood are especially favored for small, nailed boxes. The northern hardwoods, birch, beech, and maple, come into most common use in making veneer boxes. Paper birch is preferred for rotary-cut veneer cases, and is acceptable in logs 8" and up in diameter. Beech, on account of defects, must be at least 12". Spruce is commonly used for cleats on veneer boxes. Small, round, butter, cheese, and fig boxes are made from birch, beech, and maple logs cut into squares, then sliced into veneer for the side of the box. Softwood is used for the tops and bottoms of such boxes.

The wooden-box business still stands first in importance in the list of wood-using industries of New Hampshire, in spite of what is estimated to be a decline of about 40 to 50 per cent in the amount of lumber now annually consumed. It is noteworthy that, according to the Wood-Using Industries of New Hampshire report for 1912, the annual consumption of box lumber at that time was approximately the same as now. This would lead to the belief that estimates of the extent of the present decline are largely on the basis of war-time consumption. The decline has taken place chiefly within the past four years, and is due to a combination of causes, principal among which is the substitution of fibre boxes. The sudden inroads of the fibre, and to a lesser extent the veneer box, are variously explained. Unquestionably the success of these substitutes for the pine box is partly due to greater compactness, — particularly when empty, — lighter weight, and in some cases to more attractive appearance, and lower cost. Also, the increased use of motor trucks for transporting package goods has lessened the demand for stronger and heavier boxes capable of withstanding railroad handling. Some attribute the decline partly to a lack of study (on the part of box manufacturers) of the needs of the box consumer, poor methods of merchandising, and lack of standards; others to the attempt on the part of some box makers to maintain war prices after the war was over. Be the causes what they may, the fact is that the business has suffered a severe blow, and the consensus of opinion among box men is that it is a permanent one. It is thought likely that the box business can be stabilized at near its present level, and not improbable that it can be increased by improved methods of manufacture and distribution, the use of lower (cheaper) grades of lumber, and more effective advertising.

The matter of using the lowest grades of lumber for boxes is of vital interest to all pine operators, and notwithstanding the objections of many box manufacturers, the tendency is to sort out the best as "better than box" and sell the remain-

der for boxes. What percentage of the available supply of white pine in the state is, or will be, "better than box" is a question. Some say that 80 per cent of New Hampshire pine is "box." A grading test made by the Harvard Forest on 400,000 feet of box boards at one of the New England Box Company's shops showed 8 per cent to be No. 2 "Barn and better." Some box makers claim that, inasmuch as the New England pine box has always been a "quality" box, any reduction in quality will mean a loss of business, especially in sections of the Atlantic States which can buy New England boxes and Southern boxes with equal facility. However, the growing tendency among box manufacturers themselves to put the high end of their box boards into finish, flooring, sheathing, match-blocks, etc., predicates the skimming off of an increasingly thicker layer of the "cream" as time goes on. The skimming should not all be left to the box shops, but rather the producer of pine lumber should be in a position to sort and grade his lumber at the sawmill, selling the lower grades for box and the higher for builders' finish, sash and blind, etc. Under present conditions in the lumber business in New England this is about the only way in which an operator can hope to make a living, and the only hope of holding a fair share of the former market for higher grade native pine — a market which is being thoroughly invaded by western and southern softwoods.

The decline in the box business has eliminated many of the small box shops in the country districts, and has curtailed the business of many others which manufactured boxes as one of their several products. In general the manufacture of boxes appears to be concentrating in the hands of those larger manufacturers who have best been able to meet changed conditions, who have constantly striven for more efficient production, and who have employed up-to-date methods of selling and advertising their product. In the near future still another factor will have to be reckoned with, namely, the supply of suitable and accessible timber capable of being drawn upon



(INCLUDES SOME LOCAL CUSTOM SAWING AND CONTRACTORS NOT BUYING FROM RETAIL YARDS. UNIT: THOUSAND FT. B.M.)

[illegible]

<i>Chestnut</i>	6								6										12
New Hampshire																			15
<i>Basswood</i>	15																		
New Hampshire																			
SOUTHERN																			
<i>Hard Pine</i>	2528	30	40	32					280	4075	1700	7754							17039
<i>Cypress</i>	215			9	9														233
<i>Mixed Hardwood (Oak and Gum)</i>																			20
<i>Hard Maple</i>											15								15
<i>Red Gum</i>	8		8	3															19
<i>Oak</i>											234								234
<i>Yellow Poplar</i>	100			10															110
<i>Hickory</i>																			135
<i>Basswood</i>	20																		20
WESTERN																			
<i>White Pine (Some Sugar Pine)</i>	1275	5	5	13					7216	4389		256	260						1678
<i>Douglas Fir</i>	744								100										12605
<i>Hemlock</i>												40	20						140
<i>Sitka Spruce</i>																			60
<i>Pondosa Pine</i>	40									82			25						107
<i>Spruce</i>													100						100
<i>Red Cedar</i>																			
LAKE STATES																			
<i>Birch, Beech and Maple</i>				5	5					626									626
<i>Hard Maple</i>	5		5	4															20
<i>White Ash</i>	5		5																14
																			87825

marketed. Native softwoods, so far as their technical properties are concerned, are in general the equal of most imported softwoods, and for certain uses many consider them superior. Unfortunately, the sale of most yard lumber seems to be based upon price rather than upon adaptability to a given purpose. This has prompted several dealers to say, while being interviewed, that the public should be educated in the use of lumber, especially native lumber.

Were it not for the price differential, native white pine undoubtedly would be used in preference to western white pine for outside finish. Native spruce is still generally considered the best frame stock ever put on the market, but on account of short lengths, imperfect sizing, and methods of marketing, it is giving way in the large markets to Douglas fir. Hemlock and spruce boards, in spite of random widths and relatively poor manufacture, have made a remarkable stand against the much more uniform fir board and southern roofer. On the other hand, where clearness, wide widths, and long lengths are required, western and southern woods are at present admittedly superior for many purposes.

The invasion of western and southern softwood has not yet competed, and probably never will seriously compete with native pine, hemlock, and spruce in the country districts of the state. Here native softwood finds a ready market for both inside and outside finish, square edge and matched boards, frame stock, flooring, sheathing, etc. Part of this production is handled by small water-mills whose output is more or less seasonal on account of fluctuations in stream flow; the remainder by better equipped planing mills, wood-working shops, box factories, etc., in the larger towns. Many interesting comments on the use of native lumber were made by men operating small saw and planing mills. All agreed that hemlock and spruce surpassed pine for "boarding in," on account of their nail-holding qualities. Most claimed that spruce was best for frame stock, others liked hemlock almost as well, and some predicted that pine frame stock would

come into common use. Pine studding was said to be just as good as spruce for light buildings. In some sections Norway (red) pine was being successfully used for dimension. Hard pine was admitted to be superior to native spruce for structural timbers.

The comments of yard men on native lumber, while generally disparaging, plainly revealed the fact that the chief trouble lies in the way native timber is manufactured. Though it is impossible for local operators to produce wide, clear boards from second-growth "pasture" pine, or to compete in accuracy of sawing and perfection of finish with large, splendidly equipped mills of the South and West, a detail study of retail yard trade requirements would undoubtedly disclose many chances to improve the salability of native lumber. For example, the present advantage of uniform width in fir boards and southern roofers over the random width native hemlock boards led to the opinion that hemlock boards should be sorted into uniform widths. A few believed it desirable to surface and match pine boards to compete with other kinds of lumber for "boarding in." One large dealer maintained that not enough 2" x 8" and 2" x 10" was sawed; another that New Hampshire small dimension is apt to be cut 12' long, but it would be better to have some shorter lengths if clipped on the ends; that all small, crooked stuff in native dimension should go into 2" x 3" and 2" x 4", 8', 9' and 10' long. These are minor considerations. The chief hope of at once strengthening the position of native lumber lies in the direction indicated in Part I.

There is little doubt but that in time native softwood lumber will again occupy an important place in the yard trade. As the supply of Nature-grown, cheap, virgin timber diminishes, the basis of softwood competition will gradually shift to volunteer second-growth, and finally to man-grown timber. With these changes will come an increasing tendency to depend upon home supplies, which, on account of transportation differentials, will be comparatively free from competition.

## WOODENWARE, NOVELTIES, AND MISCELLANEOUS

### SUMMARY

SOURCE	AMOUNT	PER CENT
New Hampshire .....	17,786 M	58
New England .....	10,440 M	34
New England and Canada .....	200 M	1
Canada .....	210 M	1
New York and Canada .....	275 M	1
New York .....	15 M	
Pennsylvania .....	4 M	
Lake States .....	970 M	3
Southern .....	765 M	2
	30,665 M	100

UNDER this heading are included a large number of products, chief among which are toys, wood heels, crutches, piano parts, bicycle rims, matches, caskets, hames, shoe-pegs, plant labels, baskets, dry measures, and loom stock.

The manufacture of toys consumes about 1,500,000 feet of native lumber, chiefly white pine, paper and yellow birch, beech, hard and soft maple, basswood, and poplar. Round-edge sawing is acceptable, and thicknesses range all the way from  $\frac{1\frac{1}{2}}{32}$ " to 3". On account of the small size of most toys, the toy industry is commonly considered a user of low-grade lumber. This is more or less true, but, on the other hand, some toy manufacturers consider it more economical to buy the better grades, thereby reducing the percentage of waste. The toy business is supplied largely from local sources. Arkansas pine, now said to be coming into New England for toy making, has not made itself known in New Hampshire to any extent as yet.

The wood-heel industry uses not far short of 2,000,000 feet annually. Hard maple is the leading heel wood, although yellow birch and beech are also used. Most of the maple is imported from the Lake States, the Adirondacks, and Vermont. That no larger percentage of New Hampshire maple is used is due largely to the failure of local operators to produce satisfactory stock. Heel stock must be well sawed

(around the log, and of uniform thickness), stuck up so as to prevent season checks, and preferably graded. Though some heel stock is bought log run, the demand is generally for Firsts and Seconds, Selects, and No. 1 Common. Thicknesses range from  $1\frac{1}{4}$ " to  $2\frac{5}{8}$ ", the most common being 2",  $2\frac{1}{4}$ ", and  $2\frac{1}{2}$ ". Both round and square-edge lumber is accepted. Heel stock must be carefully dried. One company, buying maple, kiln dried to 5 per cent moisture content, was of the opinion that poor drying was the main objection to locally produced maple. The indications are that proper manufacture would greatly increase the percentage of home-grown maple used by this important industry.

Crutches are made from hard maple, white and yellow birch, and beech. The common practice is to buy medium-grade logs, which are subsequently stripped into small dimension. When crutch stock is bought as lumber, the thickness is either  $1\frac{1}{4}$ " or  $1\frac{1}{2}$ ". The use of small pieces for crutch handles and tops reduces waste in this industry to about 25 per cent. Crutch-making in the state is concentrated largely in one small district.

The manufacture of piano stock is an important industry concentrated in the hands of large ownership. High-quality spruce, used for sounding boards, etc., and the best "northern hardwoods," hard maple, and yellow birch are the principal native woods used.

Bicycle rims require straight-grained, selected "Firsts and Seconds" of hard maple, with relatively small amounts of yellow birch and beech. On account of poor manufacture, and lack of grading of locally grown maple the supply at present is coming from Canada and New York. One inch is the thickness most used.

The recent development of the match industry in New Hampshire is of interest, inasmuch as heretofore the wooden match business in New England, at least in recent years, has not carried the process further than the match block. Match stock is generally looked upon as a high grade of "box."

## WOODENWARE, NOVELTIES, AND MISCELLANEOUS

(UNIT: THOUSAND FT. B.M.)

KIND OF LUMBER AND SOURCE	1" and under	THICKNESS										Logs	Squares	Not speci- fied	Totals
		1 1/8"	1 1/2"	1 3/4"	2"	2 1/8"	2 1/4"	2 1/2"	2 3/8"	3"	4"				
NATIVE															
<i>White Pine</i>															
New Hampshire . . .	263	40	65	..	45	225	..	10	..	10	..	320	..	..	978
New England.....	40	..	275	..	..	1200	..	..	..	..	..	..	..	105	1620
Canada . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	195	195
<i>Hemlock</i>															
New Hampshire . . .	10	..	..	..	..	..	..	..	..	..	..	20	..	..	30
<i>Spruce</i>															
New Hampshire . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	10	10
<i>Mixed Softwood</i>															
New Hampshire . . .	..	..	..	..	..	..	..	..	..	..	..	6000	..	..	6000
New England.....	..	..	..	..	..	..	..	..	..	..	..	3000	..	..	3000
<i>Yellow Birch</i>															
New Hampshire . . .	..	..	..	..	..	..	..	..	..	..	..	151	..	3	154
New York and Can.	15	..	..	..	..	..	..	..	..	..	..	..	..	..	15
<i>Beech</i>															
New Hampshire . . .	7	..	..	..	2	..	..	..	..	..	..	10	..	..	19
New York and Can.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	10
<i>Hard Maple</i>															
New Hampshire . . .	17	..	..	..	7	..	1810	7	..	50	25	145	..	..	176
New England.....	15	..	65	..	1765	..	..	50	..	..	..	..	..	20	3810
New York and Can.	200	..	..	..	..	..	5	5	..	..	..	..	..	50	250
New York . . . . .	..	..	..	..	5	..	..	..	..	..	..	..	..	..	15
New Eng. and Can.	..	..	..	..	..	..	..	..	..	..	..	..	..	200	200
<i>Mixed Hardwood</i>															
(mostly B. B. and M.)															
New Hampshire . . .	140	60	585	100	380	150	340	320	300	..	..	5750	..	..	8475
New England.....	..	..	..	..	..	..	..	..	..	..	..	1700	..	125	1825

[illegible]



Well-stocked pine stands, with straight trees having long "joints," are best adapted to the needs of this industry.

Chestnut and white pine are the principal woods used for caskets and outer cases. Southern chestnut is preferred to native on account of its superior workability. It is said that no satisfactory substitute has as yet been found for chestnut, a species now largely eliminated by the blight.

The manufacture of hames requires No. 1 logs of ash, hard maple, beech, and red oak, with some birch. Ash, maple, and oak are preferred. Hame stock, when bought in the form of plank, calls for  $1\frac{3}{4}$ ", 2", and  $2\frac{1}{4}$ " thicknesses.

Shoe-pegs are made from 4' bolts of white and "silver" (second-growth yellow) birch, which must be at least  $5\frac{1}{2}$ " in diameter at the small end. Bolts must be comparatively free from knots and burls, and red heart must not exceed more than one-third the diameter of the bolt.

Plant labels require soft-textured pine and basswood. Second and third cuts of pine are preferred to butts on account of softer texture. Only a high grade of basswood is accepted. At present the bulk of the supply comes from the Lake states.

Basket and lobster-trap making calls for red and white oak, white ash, and paper birch. Round-edge plank ranging in thickness from  $1\frac{1}{8}$ " to  $2\frac{1}{8}$ " is in demand. A portion of the supply is accepted in log form.

Dry measures and curry cards are made from yellow and white birch, hard and soft maple, beech, and red oak.

Picker sticks require a high grade of hickory and ash (usually second growth), bought both as logs and as lumber. High-grade basswood is used for reed ribs. Ash and basswood are also used for other parts of weaving machines. Straight grain and uniform texture are necessary.

Tennis strips are made from high-grade native white ash logs. A considerable amount of hardwood is made into rotary cut veneer for boxes, coffee and tea drums, chair bottoms, etc. Yellow and white birch logs are preferred to birch and

maple. Numerous other wood products, such as railroad shims, saw and ukulele handles, golf tees, reels for rope and twine, saw bucks, cattle stanchions, grindstone frames, clothes-horses, sink drains, clothes-driers, and towel-rollers, account for the consumption of a large quantity of both hardwood and softwood logs, lumber and squares, chiefly from local sources.

## COOPERAGE AND TANKS

### SUMMARY

SOURCE	AMOUNT	PER CENT
New Hampshire .....	13,322 M	46
New England .....	12,833 M	45
Canada .....	400 M	2
Southern .....	98 M	
Western .....	2,050 M	7
	<hr/> 28,703 M	<hr/> 100

COOPERAGE includes both tight and slack cooperage, the best-known products being barrels, kegs, pails, tubs, ice-cream freezers, kits, buckets, and churns.

Cooperage is second only to boxes and shooks in the amount of native lumber consumed. Were it not for package goods, such as boxes, barrels, and pails, the total consumption of lumber for the state would be less than one half the present estimate.

White pine is the favorite cooperage wood, and because it is used principally in log form, the bulk of the supply comes from within the state. White pine's chief competitor for tight cooperage is Douglas fir. Native pine is used almost exclusively for pails and other small containers requiring staves from 8" to 20" long. In one case clear white pine staves 27" long were being used. There is admittedly a limited supply of pine staves in long, clear lengths, the average length of joint (internode), according to one manufacturer, being from 17" to 18". Douglas fir, on account of the long, clear lengths obtainable, in many cases is probably more satisfactory than native pine for making long staves in tight cooperage.

Wooden pails and tubs are not without competitors. Paper pails for candy, steel drums for lard, galvanized, tin, and crockery pails for many uses, all take a share of the business. At present the best outlets for the wooden pail are for fish, candy, jelly, mince-meat, pickles, etc. Wood is still preferred for brine packings. The tight cooperage business is chiefly in the hands of the larger companies having well-equipped factories.

A good share of the slack cooperage, which in New Hampshire includes principally apple barrels, is made by small concerns in the country districts. Both hardwoods and softwoods are mixed indiscriminately in apple-barrel staves in many cases, but the northern hardwoods and chestnut, especially the latter, are preferred. For heading, both softwood and hardwood are also used, but generally not mixed. White pine is considered by most to be superior for heading. The steel barrel with wooden heading has now replaced the all-wood barrel to some extent. There now exists a market for hardwood heading, which is one of the chief products of one of the large cooperage plants. For hoops elm is still considered the most satisfactory wood,, but as the supply gradually diminishes, it is probable that the less desirable woods, and metal, will find an increasing market.

The manufacture of tanks in the state is not a large business. Most of those produced are used by the paper and pulp trade for vats, blow-off pits, etc. For tank purposes cypress is evidently superior to native softwood.

As with many other wood-using industries, the cooperage business, particularly that of tight cooperage, has witnessed the introduction of numerous substitutes which may increase in number and importance as time goes on. One well-known cooperage concern, whose business is largely with the packing houses of the Middle West, was of the opinion that western cooperage plants might eventually win over that part of the packing-house business now held by the eastern plants. It is to be expected that the cooperage business, as well as all

# COOPERAGE AND TANKS

(UNIT: THOUSAND FT. B.M.)

KIND OF LUMBER AND SOURCE	Logs	THICKNESS		Staves	Not specified	Totals
		1"	3"			
NATIVE						
White Pine	12168	40	..	..	..	12208
New Hampshire	9760	..	..	..	..	9760
New England						
Mixed Softwood and Hardwood						
New Hampshire	450	..	..	..	..	450
Mixed Hardwood						
New England	2673	..	..	..	..	2673
Chestnut						
New Hampshire	650	..	..	..	..	650
Poplar						
New Hampshire	14	..	..	..	..	14
Elm						
New England	400	..	..	..	..	400
Canada	400	..	..	..	..	400
SOUTHERN						
Cypress	..	..	98	..	..	98
WESTERN						
Douglas Fir	..	..	..	2000	..	2000
Pine	..	..	..	..	50	50
						28703

other package businesses, will be obliged in an ever-increasing measure to rely upon the home industries using packages. As regards slack cooperage, which is already very much of a local business, the near future will probably witness little change. The 28½" apple barrel seems to be an accepted standard capable of withstanding the attack of possible substitutes for some time to come.

## FURNITURE, CABINETS, AND REFRIGERATORS

### SUMMARY

SOURCE	AMOUNT	PER CENT
New Hampshire . . . . .	10,646 M	57
New England . . . . .	3,221 M	17
New England and Canada . . . . .	2,400 M	13
Canada . . . . .	500 M	3
Lake States and Canada . . . . .	40 M	
Lake States . . . . .	50 M	
Southern . . . . .	1,574 M	8
Tropics . . . . .	10 M	
Western . . . . .	275 M	2
	<hr/> 18,716 M	<hr/> 100

THE manufacture of furniture at present affords the largest and most dependable outlet for New Hampshire hardwoods, especially of the higher grades. White and yellow birch, hard maple, beech, oak, and chestnut lumber, if of good grade (Nos. 1 and 2 common, and better) and properly manufactured, is in demand for chairs, tables, bedroom furniture, and other products of the industry. White and yellow birch and maple are particularly favored on account of texture, workability, and staining qualities. Probably no woods are now more popular in the furniture business than birch and maple. Beech, while in common use, is less desirable because of defects and its tendency to check. Chestnut, once used in large quantities for dining-room and kitchen furniture, etc., though now blight-killed, is still on the market but is being gradually replaced by oak. Southern gum, a competitor of the northern hardwoods for furniture making, seems to be losing ground. However, oftentimes changes in furniture

styles and design influence the choice of woods used, thus making it unfair to claim superiority for any one wood on the basis of its current popularity.

Some insight into the present market for furniture lumber may be gained from the following examples. One concern making extension tables and chairs uses only white and yellow birch. A certain table manufacturer uses all of the commonly used native hardwoods. One chair maker prefers birch, but also accepts some gum and oak; another (making cane-seat chairs) buys white birch and maple exclusively; still another uses birch, beech, and maple. For porch chairs one manufacturer uses native birch, beech, and maple, but prefers white birch. More cases would but furnish further evidence of the variation in the choice of woods for furniture making, but it is apparent that the furniture business in New Hampshire is at present depending largely upon the better grades of home-grown hardwoods.

The general trend in buying lumber for furniture making seems to be away from round-edge log run, and in the direction of graded square-edge and small-dimension stock. This is in line with the closer and more efficient utilization of native hardwoods, and presages the time when most all native lumber will be manufactured and graded for specific purposes. The manufacture of hardwood dowels and squares is already a well-established adjunct of the furniture business in the state, and one which promises to be of growing importance. But so long as furniture manufacturers, or others, are able to buy good long-run hardwood at such prices as have obtained in the past, just so long will the production of native hardwood lumber be on a wasteful and inefficient basis, which not only yields small profit to the operator, but, more than that, conduces toward the increased importation of New York, Canadian, and Lake states hardwoods, which for the most part are better manufactured and, usually, graded.

Hardwood operators should know of the many complaints



[illegible]



made by the furniture trade concerning the manufacture of hardwood lumber. While some manufacturers claim that native hardwood is by nature inferior, or getting poorer, or not available in sufficient amounts and qualities, the majority maintain that the chief trouble is in the way it is manufactured. Irregular thicknesses, seasoning checks, and other defects caused by improper sticking, and lack of grading are given as reasons for not using more native lumber for furniture. Improvements in the manufacture of New England hardwood are urgently needed and merit the attention of all hardwood operators.

The manufacture of cabinets and cases requires hardwoods of high quality. White and yellow birch, red gum, white and red oak, basswood, and mahogany are the principal species used. A considerable portion of the total consumed for this purpose comes from without the state.

More than 15 per cent of the total amount consumed in the making of furniture, cabinets, and refrigerators should be credited to refrigerators. The chief refrigerator woods are white pine, chestnut, and red oak, the two latter being acceptable only in the high grades. Most of the chestnut and oak used for refrigerators comes from the South.

## PLANING MILL PRODUCTS

### SUMMARY

SOURCE	AMOUNT	PER CENT
New Hampshire .....	7,936 M	71
New England .....	2,305 M	21
Canada .....	800 M	7
Lake States .....	5 M	0
Southern .....	125 M	1
	<hr/> 11,171 M	<hr/> 100

THE manufacture of planing mill products, such as flooring, sheathing, siding, ceiling, partition, molding, etc., is not entirely separated in this report from what is known as general mill work. Under the latter head may be listed stairs, balusters, railing, ornaments, cornice, colonnades,

and other special fittings. In New Hampshire the planing-mill business is divided among small stationary saw and planing mills in the thinly settled sections, larger, better-equipped planing mills in the larger towns and cities, and those lumber yards, box factories, and cooperage plants which have planing-mill machinery. In the latter case the manufacture of planing-mill products is usually undertaken as a means of providing a more profitable outlet for the "high end" of log-run native softwoods, chiefly pine. The retail yards, and to a lesser extent the larger planing mills, handle imported as well as native stock trim and finish, keeping on hand large amounts of fir, western white pine, and hard pine finish, flooring, sheathing, siding, etc., in standard forms and sizes, and for the most part working in native softwood on orders which do not require long, clear lengths, or which call for special size and shape not obtainable in standardized products. The retail yards buying native pine for finish are in the habit of accepting only the highest grades obtainable. The small planing mills in the country districts are not so exacting in their quality requirements, and find markets for a great variety of products, including pine, hemlock, and hardwood flooring for piazzas, summer cottages, etc., planed and matched pine and spruce boards, white pine sheathing, pine and spruce clapboards, and pine finish for numerous inside and outside purposes. A considerable part of the lumber thus used is of medium grade, allowing any reasonable number of small and medium-size sound knots, which, if desired, may be satisfactorily painted over. For the construction and repair of summer cottages, cheap houses, garages, farm buildings, roadside stands, etc., a large amount of "common" native lumber is used with entire satisfaction. The manufacture of native hardwood flooring, which appears to be a growing business in the state, also takes the medium grades of lumber, chiefly No. 2 common, in yellow birch, beech, and maple (some oak). Native hardwood is likewise used for inside finish in fine houses, white ash, red oak, black

cherry, yellow birch, and basswood being preferred. Basswood is considered by many to be the best of inside finish woods on account of its color, workability, and paint-taking qualities.

Native woods manufactured into planing mill products are obliged to meet the competition of many well-established lines of softwood products from other regions. Southern pine, cypress, and oak, and western fir and pine have a firm grip on a good portion of the eastern market, especially in the cities. Fir and hard pine finish are well known to every retail yard man, contractor, and carpenter in the state. Native spruce and pine, once so popular for siding, are now being crowded out by western softwoods — pine, spruce, cedar, and redwood. Native white pine, however, is still considered the best wood for outside finish. Practically all planing mill products made from woods of other regions are manufactured at the source, thus minimizing shipping costs.

Planing mill products, and particularly finish as commonly bought or manufactured by the retail yards, offer one of the best outlets for the higher grades of native pine. Native pine grading No. 3 "Barn" and better ought to find a ready market as builders finish if properly manufactured. To compete successfully with fir, hard pine, etc., it should be squared and dressed. At present native pine is at a disadvantage because most portable mills are not equipped for dressing it. Nos. 1, 2 and 3 "Barn," as used by the yard trade, must be small, tight, red-knotted stock suitable for paint finishes. The grade is usually based upon the use of the entire piece, rather than upon the percentage of the area of each piece available in cuttings of a given size and quality.

(INCLUDING SOME GENERAL MILLWORK. UNIT: THOUSAND FT. B.M.)

11171

## SASH, DOORS, AND BLINDS

SUMMARY		
SOURCE	AMOUNT	PER CENT
New Hampshire .....	1,478 M	14
New England .....	2,560 M	25
Southern .....	1,085 M	10
Western .....	5,210 M	50
Canada .....	100 M	1
Tropics .....	5 M	
	<hr/> 10,438 M	<hr/> 100

THE manufacture of sash, doors, blinds, screens, etc., like that of planing mill products and millwork specialties, has offered one of the best markets for the higher grades of native white pine. But many changes have occurred since the time when native pine was considered the one and only wood for these classes of use. White, yellow, and sugar pine from the West now have a strong grip on the markets. The "Wood-Using Industries of New Hampshire" report, published in 1912, states that only 350,000 feet of sugar pine and 200,000 feet of western white pine were consumed by the sash, door, and blind industry at that time. The present report estimates that from these small amounts the annual consumption of western pine has increased to about 4,500,000 feet in 1925. The consensus of opinion is that this change is not due so much to the inferiority of native pine as to other factors. Nearly every sash and blind manufacturer in the state testified that native pine, grade for grade, was better than its western competitors.

That a much greater proportion of native pine is not now used is due to the relatively low price of western pine, to the failure of local operators to grade out a sufficient amount of high-grade native pine, and to changes in the requirements of the sash, door, and blind trade. The matter of price difference in favor of western pine may be set aside for the present, as a factor which will be eliminated in due process of time. The question of the quality of native pine lumber, however, deserves attention. Sash and blind manufacturers are in the

habit of buying "shop" (mostly Nos. 1 and 2) and "clears" in western pine, and No. 2 "Barn and better" in native. The shop, or cutting-up, grades are especially adapted to use in the sash, door, and blind business, and western operators have not only made it a point to provide these grades in the most acceptable lengths, widths, and thicknesses, but have put on the market small dimension stock of specified size and quality which can be worked into the various parts of sash, frames, etc., with a minimum of labor and waste. In contrast to this, local pine operators rarely have done any grading whatever, and only in a few cases have attempts been made to produce special grades and sizes suitable for the sash, door, and blind industry. With the increased use of western lumber have come changes in trade requirements. In general, a higher, clearer grade of product is now produced than formerly. Whereas, for example, sash formerly was given a white priming coat which covered small, sound knots, the present custom of priming with oil favors the use of clear stock.

Most manufacturers use both native and western pine, the tendency being to use the western for the long, clear pieces, and in general for the highest grade of sash, and native for the short pieces and for grades of sash, cellar-window frames, etc., which admit small, sound knots. Concerns using part native pine usually buy a higher grade of western than those using western pine entirely. Southern hard pine is favored for jambs. Native pine has never been satisfactory for this purpose.

In several instances, men in the sash, door, and blind business maintained that the texture and grain of native pine is superior to that of western, and that sound, small-knotted native pine is better than western of the same grade, and more durable. It seems evident, then, that there is some chance of increasing the percentage of native pine consumed. Though it is impossible to state definitely what percentage of the total annual production of native pine is of sufficiently

(INCLUDING GENERAL MILLWORK. UNIT: THOUSAND FT. B.M.)

high quality to be acceptable for sash, doors, and blinds, and for other uses demanding "quality" lumber, it is noteworthy that, if only 5 per cent of the total amount of pine cut in the state (173,107,000 feet average, according to the New Hampshire Forestry Commission Report for 1924) were of sufficiently high quality, this percentage (about 8,500,000 feet) would supply the entire needs of the sash, door, and blind industry for pine.

It has been suggested, as a possible means of increasing the consumption of native pine, that contractors and builders be urged to use some stock with small, sound knots. One manufacturer stated that the use of small-knotted stock would reduce the cost of sash by 25 per cent. Since sash, doors and blinds are generally painted, there is no good reason why a limited number of small, tight knots should not be acceptable. As high-quality old-growth timber becomes scarcer, the increased cost of clear stock will no doubt result in a much wider use of the lower grades. However, it may be possible in the meantime to increase the demand for native pine by paying more attention to the present requirements of the industry. Too much pine is sawed round-edge. Sash, door, and blind manufacturers prefer square-edge. Many complain of uneven thickness in native pine and lack of grading. Much good shop-grade pine is cut 1", and hence is suitable only for pieces which take thin stock. Other thicknesses in great demand are  $1\frac{1}{2}"$ ,  $1\frac{5}{8}"$ , 2",  $2\frac{1}{2}"$ , and 3".

## BOBBINS AND SPOOLS

SUMMARY		
SOURCE	AMOUNT	PER CENT
New Hampshire . . . . .	5,800 M	77
New England . . . . .	1,525 M	20
Canada . . . . .	250 M	3
	<u>7,575 M</u>	<u>100</u>

THE manufacture of bobbins is confined largely to the north-portion of the state, in sections where there remains a suitable supply of the northern hardwoods — birch, beech, and maple.



Practically no other woods are used, with the exception of red (soft) maple, which is worked in for "speeders," but rarely for the usual run of bobbins. Beech, as in other industries, is considered inferior to birch and maple. As bobbin-making requires the use of wood in the log form, very little raw material comes from outside the state. With few exceptions the manufacture of rough bobbins is in the hands of many small concerns in the country districts, which do not carry the process beyond the "rough bobbin" stage. The turning of rough bobbins does not require a large plant or a great amount of equipment, and this probably accounts for the large number of small shops characteristic of the industry. The production of finished bobbins is another matter, and concerns thus engaged are housed in well-equipped plants in large towns and cities. Bobbin manufacture is considered wasteful, the percentage of waste running from 60 to 70, according to one long-established concern.

The bobbin industry has experienced many changes during the past few years, the combined effect of which has been a very much reduced demand for its products. Basing the calculation upon the "New Hampshire Wood-Using Industries Report" of 1912 and the present survey, the bobbin business has suffered a loss of about one third during the period from 1912 to 1925. This is accounted for by the decline in New England's textile business, which in turn has been due to cheaper production of cotton cloth in the South, the greatly reduced popularity of cotton in wearing apparel, and other factors.

There is an overproduction of bobbins, many shops having no idea where they can dispose of those on hand, others continuing to turn out bobbins without orders. All agreed that there were too many in the business.

Only one spool factory was found in the state. Paper birch, purchased in the form of 4' bolts and squares, was being used exclusively. Second-growth birch is preferred to old growth. Red heart and stained wood can be used only

ROBBINS AND SPOOLS  
(UNIT: THOUSAND FT. B.M.)

KIND OF LUMBER AND SOURCE	1"	2" and 2½"	Squares	Bolts	Logs	Not specified	Totals
NATIVE							
<i>Mixed Hardwood</i> (mostly B. B. and M.)					5150		5150
New Hampshire	..	..	..	..	1275	..	1275
New England	..	..	..	..		..	
<i>Birch, Beech and Maple</i>							
New England	25	75	..	..	..	..	100
Canada	25	75	..	..	..	..	100
<i>Paper Birch</i>							
New Hampshire	..	..	150	500	..		650
New England	..	..	100	..	..	..	100
Canada	..	..	100	..	..	..	100
<i>Basswood</i>							
New England	..	..	..	..	..	50	50
Canada	..	..	..	..	..	50	50
							7575

in cheap, colored spools. Spool squares vary in size from 1" to 3", by every  $\frac{1}{8}$ ", and in some cases every  $\frac{1}{16}$ ", between these limits. So numerous are the sizes of spools, and so rapid the changes in the demand, that it is desirable to purchase wood in the form of bolts, which can be readily cut up in squares to meet the current demand.

### CRATING, MILL-REPAIR, MACHINERY MANUFACTURE AND FOUNDRIES

SUMMARY		
SOURCE	AMOUNT	PER CENT
New Hampshire . . . . .	2,331 M	35
Maine . . . . .	60 M	1
New England . . . . .	1,289 M	19
Maine and Canada . . . . .	20 M	
Canada . . . . .	1,555 M	24
Southern . . . . .	645 M	10
Western . . . . .	625 M	10
Lake States . . . . .	99 M	1
	<hr/> 6,624 M	<hr/> 100

To present a complete and accurate account of the lumber used for crating and mill repair would necessitate interviewing all the industries in the state. The present survey, being concerned chiefly with the wood-using industries, did not attempt to do this. However, a number of questionnaires were sent to concerns not classified under wood-using industries, for the purpose of obtaining at least a partial survey of the lumber used in crating, mill repair, etc.

Spruce, pine, and hemlock are the principal native woods used for crating, especially spruce. Although crating stock is made up in a great many ways, and from various grades and sizes of material, in general it is either bought as boards or strips of specified size (at least specified width and thickness), ready for use, or as low- and medium-grade lumber, which is cut up as needed. Many small shops in the country use hardwood and softwood crating stock indiscriminately. Poplar, birch, beech, and maple, as well as native softwoods, are in

common use. The large companies, some of which use several hundred thousand feet of crating annually, are more exacting in their requirements. They buy in car-load lots from outside sources, as well as from local retail yards and lumbermen, and usually specify kind, quality, and size.

Spruce evidently is the most satisfactory crating wood now obtainable. The granite industry of the state is using it almost exclusively. At present the bulk of the supply of spruce is coming from Canada, owing to the limited amount of home-grown spruce available. Western crating stock, while not unknown to the eastern trade, is used in New Hampshire in relatively small amounts. It seems unlikely that any large proportion of western crating stock will be used as long as native and Canadian supplies hold out.

Under the head of mill repair are included boards, dimension, and timbers used in the repair and betterment of manufacturing plants. For these purposes both softwood and hardwood find a market. The native softwoods, southern hard pine, Douglas fir, birch, beech, maple, oak, and chestnut come into common use for posts, sills, joists, flooring, sheathing, etc. Much of this material, as with crating stock, is either purchased from local yards and lumbermen, or, in the case of many wood-using concerns, manufactured from native woods in the company's saw and planing mill, as needed.

For purposes of machinery construction, high-quality woods of uniform strength and straight grain are usually required. Southern hard pine, cypress, oak, ash, hickory, hard maple, and basswood find use in machinery frames and bases, handles, hardwood rolls and gear cogs, loom stock, etc. (Some machinery parts taking hickory, basswood, and ash are included under Woodenware.)

Pattern makers in New Hampshire evidently prefer eastern white pine. The demand is supplied by Maine and the Lake states, as well as by local operators. Mahogany probably ranks second to pine for pattern making. On account of very exacting requirements, only the highest grades of fine tex-

(UNIT: THOUSAND FT. B.M.)

[illegible]

[illegible]

tured woods are acceptable. According to one well-informed pattern maker, the most satisfactory woods may be listed as follows: old-growth eastern white pine (Michigan usually preferred), mahogany (from Mexico, Central America, and the Philippines), Spanish cedar, Baywood, western white pine, and redwood. Hardwoods, including basswood and yellow poplar, are used to a lesser extent than softwoods, and are generally considered inferior. Some maintain that New England old-growth white pine is second to none for pattern-making, especially when properly manufactured. Those who are extra particular in their choice of native pine for patterns prefer air-dried to kiln-dried stock, and quarter-sawed to slash-sawed. It is said that native pine, to be at its best, should be either dumped (as logs) into a pond and water-cured, or stuck up (as lumber) in the winter so that it will be acted upon by snow, ice, and spring rains. Both treatments aim at the removal of pitch and other undesirable substances and the improvement of texture. The most common thicknesses for pattern stock are 2", 1½", and 1". Length is relatively unimportant. Butt cuts from 5' to 10' long — "shorts" — are often used.

Pattern stock affords a dependable, though not large, outlet for high-quality native white pine, particularly old-growth, and, inasmuch as pine is considered the equal of any other wood for this purpose, there appears to be no reason why most of the pattern-stock business should not be taken care of by local operators.

Flasks and bottoms, together forming a rough, strong box for holding the molding sand and metal casting, are made up from low- and medium-grade native softwood, principally white pine. In some cases "box" boards are considered satisfactory. Hemlock, spruce, and southern pine are also used for these purposes. In one case Arkansas "roofers" were competing with native white pine for flasks and bottoms.

## CARS, VEHICLES, AND BOATS

SUMMARY		
SOURCE	AMOUNT	PER CENT
New Hampshire . . . . .	618 M	11
New England . . . . .	250 M	4
New England and Canada . . . . .	1,616 M	29
Southern . . . . .	2,981 M	54
Western . . . . .	100 M	2
	<hr/> 5,565 M	<hr/> 100

THE accompanying table does not include more than 75 per cent of the total consumption of lumber for the manufacture and repair of cars, vehicles, and boats, since there were many small consumers, such as blacksmiths, whom time did not permit visiting.

The most important branch of this class of industry in the state is car construction and repair. Most of the cars manufactured at present are freight cars, and for the most part strong and durable woods are in demand — for stringers, sills, decking, uprights, siding, lining, etc. Hard pine is the principal wood used, but one large consumer considered Douglas fir to be equally satisfactory, and of growing importance in car construction. Hard-pine timbers, dimension, and sheathing, native and Canadian spruce dimension, lining, roofing, running boards, etc., red and white oak timbers and dimension constitute the bulk of the lumber used. For passenger car finishing and panelling, woods such as oak, ash, mahogany, and yellow poplar are also in use.

With the exception of oak and spruce, native woods are playing a small part in car construction, and there is no indication that this condition will soon change. However, for railroad ties, poles, piles, fences, bridges, etc., a considerable amount of native lumber is utilized. Though some of these products are not lumber, and hence are not considered in this report, they nevertheless constitute possible outlets for native timber.



Vehicles include wagons and parts, and automobile and truck bodies. The wagon, and wagon-wheel and hub businesses, now reduced to a position of relative unimportance, use chiefly oak, ash, and basswood. Practically all of this is supplied from local sources. An unknown amount of hardwood lumber, mostly plank and heavier dimension, is used by blacksmiths for wagon repair, etc., but this offers only a small outlet for the best grades of hardwood. The building of automobile and truck bodies requires such hardwoods as red and white oak, white ash, yellow birch, and hard maple. Spruce and poplar come into use in the manufacture of the "Snowmobile," probably the only product of its kind in the state. The most common complaint from commercial automobile and truck-body manufacturers is that native hardwood lumber is usually not available in long lengths. More 14- and 16-foot lengths are said to be needed.

This survey did not discover any great amount of boat building. So far as could be learned, native pine and oak, and mahogany, cypress, and white cedar are the favored woods.

The car, vehicle, and boat industries are, in general, exacting in their requirements, and include many small consumers who are unable to anticipate their needs for lumber. With the exception of railroad-car construction and repair, which requires a large assortment of kinds, grades, and sizes of both native and imported lumber, these industries use chiefly only the highest grades of native hardwood (some softwood), mostly in the thicker sizes, and will undoubtedly always provide outlets for small lots of locally grown hardwoods such as oak, ash, and basswood.



## WOOD-TURNING

## SUMMARY

SOURCE	AMOUNT	PER CENT
New Hampshire.....	2,111 M	39
New England.....	1,325 M	25
New York and Vermont.....	300 M	6
New York.....	815 M	15
Canada.....	300 M	6
New England and Canada.....	500 M	9
	<hr/> 5,351 M	<hr/> 100

WOOD-TURNING, in a sense, is not a separate industry. It might well be considered as a step in the process of manufacturing the products of other industries such as bobbins and spools, wooden-ware and novelties, and furniture. For purposes of this survey, wood-turning includes chiefly the products of shops either specializing in turning, or whose finished products may be classified as turned goods, for example, handles, dowels, baseball bats, shoe lasts, clothes-pins, and rakes.

White (paper) birch is the best wood for most turning purposes, although other hardwoods are in common use. Ash is used for rake handles and baseball bats, hard maple for shoe lasts, birch, beech, and maple for handles, clothes-pins, furniture stock, etc. Oak also is used for furniture dowels. In one case white pine was being used for small dowels, the user buying only the best grade obtainable. Turners prefer second-growth hardwoods of straight grain and uniform texture. Red heart in white birch was said to be undesirable on account of its tendency to give way when in the lathe. In other cases, red heart, if sound, was being used for handles which were to be enameled.

Wood-turning shops vary in size from small shops in small settlements to large, well-equipped plants in the large towns. The former buy most of their raw material locally, either in the log or as lumber; the latter patronize outside (the state) operators to a considerable extent, and usually prefer buying



their stock in the form of small dimension (squares) and graded square-edge lumber. Wood-turning for certain kinds of high-quality products requires squares sawed to within  $\frac{1}{16}$ " of specified dimensions. To obtain this accuracy in size it is claimed to be necessary to buy outside the state. New Hampshire-made squares, by comparison, are said to be inaccurately sawed, and to require sorting over before they can be used. Oversize is said to be as bad as undersize. The manufacture of shoe lasts takes rough blocks of hard maple from sources outside the state. Much imported lumber is used for handles. Evidently in some cases hard maple from Canada, New York, Maine, and Vermont is considered better than that grown in the state.

The growing tendency of wood-turners to use squares in preference to logs and lumber indicates again the approach of more refined methods of utilization, more especially the partial manufacture of many wood products at the sawmill.

## PART III

### CLASSIFIED DIRECTORY OF CONSUMERS

In a very few cases information was refused. In general, however, the absence of kinds of lumber and thicknesses following the name and address is due solely to the failure of the author to reach certain consumers either through personal interview or correspondence. Interested parties can undoubtedly obtain the desired information by the usual procedure.

#### BOXES AND SHOOKS

- AMERICAN BOX AND LUMBER Co., Nashua. White Pine, 1",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ",  $1\frac{3}{4}$ ",  $2\frac{1}{8}$ ".
- ANNETT BOX Co., East Jaffrey. White Pine, Spruce and Hemlock, B. B. & M. and Soft Maple logs.
- AVERY & PRATT, Strafford. White Pine, Hemlock and Spruce logs.
- BACHELDER-WORCESTER Co., Manchester. White Pine, 1",  $1\frac{1}{4}$ ", 2".
- BAILEY LUMBER Co., Suncook. White Pine and Hemlock,  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ".
- BEAN & SYMONDS Co., East Jaffrey. White Pine,  $2\frac{1}{8}$ ".
- BELMONT LUMBER Co., Belmont. White Pine and Hemlock, 1".
- BOULIA-GORRELL LUMBER Co., Lakeport. *See* Retail Lumber.
- CHAMPLIN, W. H., Rochester. White Pine, Hemlock, Spruce, 1"- $2\frac{1}{8}$ "; Hardwoods,  $1\frac{1}{8}$ ".
- CHASE & VEASEY BOX AND LUMBER Co., Lakeport. B. B. & M., Oak logs; Spruce, 2"-3".
- CLARK, CHAS. H., Frankestown.
- CLAYBURN BROS., Piermont. White Pine and Spruce, 1"; Poplar, 2"; Beech veneer.
- CLOW, S. W., Wolfboro. *See* Retail Lumber.
- CONCORD LUMBER Co. *See* Retail Lumber.
- COOK'S LUMBER Co., Laconia. *See* Retail Lumber.
- CROCKET, GEORGE, Hancock. *See* Cooperage and Tanks.
- DALTON, A., Co., Manchester. White Pine,  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ".
- EDWARDS, OLIVER H., North Weare. White Pine, Poplar.
- ELA BOX Co., Warner. White Pine and Red Pine, 1".
- EMERY, CHAS. M., Tilton. White Pine, Spruce and Hemlock, 1".
- FELLOWS & SON, Manchester. White Pine, Hemlock, 1" and up; Chestnut, 1".
- FORD MFG. Co., Contoocook. White Pine logs and 1",  $1\frac{1}{8}$ " and up; Hemlock dimension.
- FOSS & SON, DENNIS, Dover. *See* Sash, Doors and Blinds.
- FOWNES MFG. Co., Rochester. White Pine,  $1\frac{1}{4}$ "  $1\frac{1}{2}$ "; some 1",  $1\frac{3}{4}$ ".
- FROST, C. C., North Walpole. White Pine, Spruce and Hemlock, 1",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ".

- GILES & LANGLEY, Farmington. White Pine, Hemlock and Spruce, 1", 1 $\frac{1}{4}$ ", 2".
- GREEN, A.H., & Co., North Walpole. White Pine, 1 $\frac{7}{8}$ ", 2 $\frac{1}{8}$ "; some 1 $\frac{1}{2}$ ".
- HARMON, R. F., & Co., Conway. White Pine, Hemlock and Spruce, 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ "; some 1 $\frac{3}{4}$ ", 2".
- HART, D. J., BOX Co., Marlboro. White Pine, 2 $\frac{1}{8}$ ".
- HARTSHORN, FRANK, Co., Milford. White Pine, Hemlock, Chestnut, 1" and up.
- HOWARD, THOMAS E., Derry. White Pine, 1 $\frac{1}{8}$ ".
- JOHNSON, FRED O., Hancock. Mixed logs.
- LORD-CHAMPLIN BOX Co., Epping. White Pine, 1", 1 $\frac{1}{4}$ ".
- N. E. BOX Co., Ashuelot. White Pine, 1 $\frac{7}{8}$ ", 2 $\frac{1}{8}$ ".
- N. E. BOX Co., Concord. White Pine, 1 $\frac{7}{8}$ ".
- N. E. BOX Co., Keene. White Pine, 1 $\frac{1}{4}$ ", 1 $\frac{3}{8}$ ", 2 $\frac{1}{8}$ "; W. Birch, R. Oak, 1 $\frac{1}{2}$ ".
- N. E. BOX Co., West Swanzey. White Pine logs and 1 $\frac{7}{8}$ ", 2 $\frac{1}{8}$ "; Basswood, 2 $\frac{1}{8}$ ".
- N. E. BOX Co., Winchester. White Pine, 1", 1 $\frac{1}{4}$ ", 1 $\frac{7}{8}$ ", 2 $\frac{1}{8}$ "; Hemlock, Spruce and Hardwoods, 2".
- N. H. BOX & LUMBER Co., Pittsfield. White Pine, 1"-1 $\frac{3}{4}$ ".
- NEWTON BOX Co., Newton Junction. White Pine, 1", 1 $\frac{1}{8}$ ", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 1 $\frac{3}{4}$ ".
- PARKER-YOUNG Co., Lisbon. *See* Woodenware, Novelties and Miscellaneous.
- PIKE, Co., THE, Pike. *See* Bobbins and Spools.
- PLATTS BOX Co., Troy. White Pine, 2 $\frac{1}{8}$ "; Chestnut.
- PRESCOTT, FRANK R., Meredith. White Pine, Hemlock and Spruce, 1"; White Pine, 1 $\frac{1}{2}$ ", 2"; Hardwood, 2".
- ROLFE, C. M. and A. W., INC., Concord. *See* Sash, Doors and Blinds.
- SEAVY, E. W., Chesham. White Pine logs.
- SMITH BOX & LUMBER Co., Manchester. White Pine, mostly 1".
- SMITH SHOOK & LUMBER Co., Bristol. White Pine box boards and s.e., Spruce and Hemlock dimensions; N. C. Pine, Southern Hickory, Douglas Fir.
- STUDLEY BOX & LUMBER Co., Rochester. White Pine, Spruce and Hemlock logs and 1", 1 $\frac{1}{4}$ ".
- SUTHERLAND, OSBORNE A., New Boston. White Pine, Hemlock, 1"; Oak and Ash, 1", and up.
- UNITED BOX & LUMBER Co., Rochester. White Pine, Hemlock and Spruce, 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 1 $\frac{3}{4}$ ".
- WELLS & FLANDERS, Enfield. White Pine, Hemlock and Spruce, 1".
- WHITING, DAVID, & SONS, Wilton. White Pine, Hemlock, Chestnut, Oak, Birch and Maple logs; Idaho Pine, Spruce boards and dimension.
- WILLIAMS MFG. Co., Rumney. *See* Woodenware, Novelties and Miscellaneous.

## RETAIL LUMBER

- BELANGER, S., & SON, INC., Nashua. Spruce, Hemlock and Fir boards, dimension, etc.
- BENSON, G. W., & Co., Derry. White Pine, 1", 2"; Spruce boards and dimension; Hard pine, Douglas Fir, Idaho Pine.
- BOARDWAY & COWLES, Claremont. Spruce and Hemlock dimension; Spruce boards; White Pine, 2", s.e.; Hardwood flooring, Hard Pine, Douglas Fir, Western White Pine.
- BORCHERS, CHAS. H., Salem Depot. White Pine, 1 $\frac{5}{8}$ "-4"; Spruce dimension, and boards; Hemlock boards, Hardwood plank and flooring, Hard Pine, Douglas Fir, Idaho White Pine.
- BOULIA-GORRELL LUMBER Co., Lakeport. White Pine, Spruce, Hemlock and Hardwood, 1" and up — finish, boards, dimension, flooring, etc.; Hard Pine, Cypress, Douglas Fir and Western Hemlock.
- BOUTWELL, UPTON & BOUTWELL, Concord. Spruce and Hemlock boards and dimension, White Pine boards, etc.; Hardwood flooring, Hard Pine, Western White and Sugar Pine, Douglas Fir.
- BUBER, LUTHER, SONS Co., Berlin. White Pine finish, Hardwood flooring, Canadian Spruce, Douglas Fir, Hard Pine and Cypress.
- BURTT, A. F., & Co., Plymouth. White Pine, 1", 1 $\frac{1}{4}$ ", 2"; Spruce dimension, Hard Pine, Idaho White Pine.
- CARPENTER, J. N., LUMBER Co., Newmarket. White Pine finish, Spruce boards and dimension, Hemlock boards, Hard Pine.
- CHADWICK & KIDDER, Franklin. White Pine, 1" and 1 $\frac{1}{4}$ "-4"; Spruce and Hemlock boards and dimension; Hard Pine and Douglas Fir.
- CHAGNON, E. A., Nashua. White Pine, 1" and up; Spruce dimension; Hardwood, 1" and up; Hard Pine, Douglas Fir.
- CHICK, J. F., & SON, Silver Lake. White Pine, 1", 2", 3"; Spruce dimension, Hard Pine, Cypress, Southern Oak and Gum, Western White and Sugar Pine, Douglas Fir, Western Spruce.
- CLOUGH, N. P., & Co., Lebanon. White Pine finish, Spruce and Hemlock boards and dimension, Hardwood flooring, Hard Pine, Douglas Fir.
- CLOW., S. W., Wolfboro. White Pine, Hemlock and Oak boards, planks and dimension; Hard Pine, Douglas Fir, Idaho White Pine.
- CONCORD LUMBER Co., Concord. White Pine box boards and finish; Spruce dimension, Hard Pine, Southern Hardwood, Douglas Fir, Western White and Sugar Pine.
- COOK, F. D., LUMBER Co., Nashua. White Pine, 1", 2"; Eastern White Cedar, Hardwood flooring, Hemlock boards, Spruce boards and dimension, Hard Pine, Douglas Fir, Western White Pine, Redwood, Western Red Cedar.
- COOK'S LUMBER Co., Laconia. White Pine, Hemlock and Spruce logs and 1"; Hard Pine, Douglas Fir.
- DAVIS, BERT, Derry. White Pine finish and boards, Spruce dimension, Hard Pine, Douglas Fir.



- EMERY, CHARLES M., Tilton. *See* Boxes and Shooks.
- EXETER LUMBER Co., Exeter. White Pine finish, Hemlock crating, Hardwood, 1" and up; Spruce boards and dimension, Hardwood flooring, Hard Pine, Cypress, Whitewood.
- FOWNES MFG. Co., Rochester. *See* Boxes and Shooks.
- GIBSON, J. L., & Co., North Conway. White Pine, 1"; Spruce and Hemlock boards and dimension, Hard Pine, Douglas Fir.
- HALLIDAY-PENFIELD LUMBER Co., Rochester.
- HICKS, A. C., Colebrook.
- HUTCHINSON BLDG. Co., Concord. White Pine, 1"-4"; Hemlock boards, spruce dimension, Basswood finish.
- JANVRIN, B. T., Hampton Falls. White Pine, 1" and 2"; Hemlock boards, Spruce boards and dimension, Douglas Fir.
- JANVRIN, JOHN A., Hampton Falls. White Pine, 2"; Hemlock boards; Oak, 2"; Spruce boards and dimension, Hardwood flooring, Hard Pine, Redwood, Douglas Fir, Idaho Pine.
- KEENE WOODENWARE Co., Keene. *See* Cooperage and Tanks.
- KEEZER BROS., Bristol. White Pine finish, Hard Pine, Douglas Fir.
- KENDALL GRAIN STORE, Charlestown.
- KNAPP, GEORGE E., Tilton. Hard Pine, Douglas Fir.
- LIBBEY, E., & SONS Co., Gorham. White Pine Finish, Spruce boards and dimension, Hemlock boards and planks, Hardwood flooring, P. Birch squares, Hard Pine.
- LITTLEFIELD LUMBER Co., Portsmouth. White Pine 1" and up; Spruce boards and dimension, Hardwood flooring, Hard Pine, Douglas Fir and Idaho Pine.
- LITTLETON LUMBER Co., Littleton. Hemlock and Fir dimension, Spruce boards, Douglas Fir, Hard Pine.
- MARTIN, LEASON, & SON, Richmond. *See* Cooperage and Tanks.
- MARTIN, WILLIS A., Goffstown. White Pine 1" and dimension, Spruce and Hemlock boards and dimension.
- MOONEY, F. E., Farmington. White Pine finish, Hemlock boards and dimension, Spruce finish, Hardwood flooring and Hard Pine.
- MOORE, HERBERT A., Lancaster. Spruce, Fir, Hemlock boards and dimension, Hard Pine, Douglas Fir and Idaho Pine.
- MUIR LUMBER Co., Manchester. White Pine, 1"; Hard Pine, Western White Pine, Douglas Fir.
- NASHUA BUILDING Co., Nashua. Hemlock boards, Spruce Boards and dimension, Hard Pine.
- NELSON & WARNER, Charlestown.
- N. E. MILL AND LUMBER Co., Hudson. White Pine finish and boards, Spruce dimension, Hardwood flooring, Hard Pine.
- NEW HAMPSHIRE BOX & LUMBER Co., Pittsfield. *See* Boxes and Shooks.
- OSGOOD, EDWIN B., Claremont.
- OSGOOD CONSTRUCTION Co., Nashua. White Pine finish, Hemlock boards, Hardwood finish, Spruce dimension, Hard Pine.

- PARKER, GEORGE F., Lancaster. White Pine, Hemlock and Spruce boards and dimension, Hard Pine.
- PARKER-YOUNG CO., Lisbon. *See* Woodenware, Novelties and Miscellaneous.
- PEASLEE LUMBER CO., Westville.
- PROCTOR BROS. & Co., Nashua. White Pine for finish, Spruce dimension. *See* Cooperage and Tanks.
- PUTNEY, C. E., Claremont. White Pine, Spruce and Hemlock finish, etc., Hard Pine.
- RICHARDSON, FRANK, Littleton. White Pine finish, Spruce boards and dimension, Hard Pine, Douglas Fir and Idaho Pine.
- ROBINSON-BRETT LUMBER CO., Keene. Hemlock boards, Spruce boards and dimension, Hardwood flooring, Hard Pine, Douglas Fir, Idaho Pine, Pondosa Pine, Sitka Spruce, California White Pine.
- ROCHESTER LUMBER CO., Rochester.
- ROLFE, ALVIE, Groveton. White Pine finish, Spruce and Fir boards and dimension, Hard Pine and Douglas Fir.
- ROWELL, FRANK P., Newport. Hardwood flooring, Hard Pine, Douglas Fir.
- RUSSELL & FOSTER, Franklin. White Pine finish, boards and dimension, Hemlock and Spruce boards and dimension, Hardwood flooring, Douglas Fir, Hard Pine.
- SCOTT, GLENROY W., Keene. Hemlock and Spruce boards, Hemlock dimension, Hard Pine, Douglas Fir.
- SHELDON BROS., Hancock. *See* Wood Turning.
- SMITH, R. F., New London. White Pine, 1"-3"; Hard Pine, Douglas Fir.
- SMITH SHOOK & LUMBER CO., Bristol. *See* Boxes and Shooks.
- SPAULDING, M. O, Keene. Hemlock boards, Spruce boards and dimension, Oak, 1", 2"; Hard Pine, Western White Pine.
- SPAULDING & FROST, Fremont. *See* Cooperage and Tanks.
- STONE, S. S., & SONS, Fitzwilliam Depot. *See* Woodenware, Novelties and Miscellaneous.
- THAYER PORTABLE HOUSE CO., Keene. Spruce, 1" and dimension; Hard Pine and Douglas Fir.
- THOMPSON MFG. CO., Lancaster. *See* Crating, Mill Repair, and Machinery Manufacture and Foundries.
- TOLLES, J. H., & Co., Nashua. White Pine, 1", 2"; Hemlock boards, Spruce Boards and dimension, Chestnut, 1" and dimension; Basswood, Maple and Birch, 1"; Hardwood mill flooring, Oak and Ash, 1"-3"; Maple, 1"-4"; Brown ash, 1"-2"; Hard Pine, Cypress, Gum, White-wood, Southern Oak and Maple, Douglas Fir, Redwood, Idaho Pine.
- WADLEIGH, E. O., & SON, Exeter. White Pine and Hemlock logs, Spruce dimension, Hard Pine, Douglas Fir and Western Hemlock.
- WEBSTER, H. L., & SONS, Canaan. White Pine boards, Hemlock and Spruce boards and dimension, Hard Pine.
- WELLS & FLANDERS, Enfield. *See* Boxes and Shooks.

WEST SIDE LUMBER Co., Manchester. White Pine and Spruce, 1";  
 Spruce dimension, Hard Pine and Douglas Fir.  
 WHITEFIELD MFG. Co., Whitefield. *See* Bobbins and Spools.  
 WHITING, DAVID, & SONS, Wilton. *See* Boxes and Shooks.  
 YORK, E. J., Dover. White Pine, Hemlock and Spruce, mostly 1", 2",  
 Hardwood flooring, Spruce dimension, Hard Pine, Douglas Fir.  
 YOUNG, C. A., Easton. *See* Bobbins and Spools.

#### WOODENWARE, NOVELTIES AND MISCELLANEOUS

ALEXANDER, GEO. E., & SON, Sunapee. Ash, P. Birch, R. Oak logs and  
 1 $\frac{1}{8}$ ".  
 BEAN & SYMONDS Co., East Jaffrey. *See* Boxes and Shooks.  
 BEVERSTOCK, O. D., Co., Keene. *See* Cooperage and Tanks.  
 CARROLL COUNTY LUMBER Co., Center Ossipee. White Pine and Oak,  
 1"; B. B. & M., 1", and up, r. l. & w.  
 CHASE, BENJ., Co., Derry. White Pine butts, 1 $\frac{5}{8}$ "; Ash, 2"; Basswood.  
 CLEAVES, West Rindge. Oak and Ash, 1 $\frac{1}{8}$ ", 1 $\frac{5}{8}$ ", 2 $\frac{1}{8}$ ", and logs.  
 CLEMENT TOY Co., North Weare. Hardwood, 1"-3"; White Pine, 1"-3".  
 COLLEY & CURRIER Co., Bristol. Birch, Maple, 1 $\frac{1}{2}$ ".  
 CONE, N. B., Rumney. Hardwood logs.  
 CONWAY WOOD HEEL Co., Conway. Hard Maple, 1 $\frac{1}{4}$ "-2 $\frac{1}{2}$ ".  
 CRESCENT WOODWORKING Co., Manchester. P. Birch, 1"-1 $\frac{1}{2}$ ".  
 DAMON, JONAS, EST. WALTER S. DAMON, State Line. Hardwood, 1 $\frac{1}{2}$ ",  
 2 $\frac{1}{8}$ "; White Pine, 1".  
 DANBURY LUMBER & NOVELTY Co., Danbury. *See* Wood Turning.  
 DANIELS, ALBERT E., Epping.  
 DREW, LYLE S., Union. P. Birch, Beech, Maple, 1"-2".  
 DREWRY BROS., North Weare. White Pine and Hardwood logs.  
 EASTERN STATES PACKING Co., Peterboro. R. Oak, Ash, P. Birch, 1 $\frac{1}{8}$ "-2".  
 ELLIOTT, E. A., Rumney. Hardwood logs.  
 ESTES, E. B., & SONS, Gorham. Mixed Hardwoods,  $\frac{1}{2}$ "-3 $\frac{1}{2}$ "; P. Birch  
 squares.  
 FELLOWS, MRS. GERTRUDE F., Kingston. Pine logs, White Pine, 1", 1 $\frac{1}{4}$ ";  
 B. B. & M., 1 $\frac{1}{2}$ "-2 $\frac{5}{8}$ ".  
 FRYE, E. B., & SON, Wilton. B. B. & M., Oak and White Pine logs.  
 HALL, GARFIELD, Rumney. Hardwood logs.  
 HUTCHINS & HUTCHINSON, Bristol. Ash logs, Southern Hickory, 1 $\frac{1}{2}$ "  
 and 2".  
 K. & C. MFG. Co., Henniker. Hard Maple, 1"; F. & S.  
 KEARSARGE PEG Co., Bartlett. Paper and "Silver" Birch 4' bolts.  
 KENISTON, GEORGE D., & Co., Rumney Depot. Ash logs.  
 KINGSBURY MFG. Co., Keene. Basswood,  $\frac{1}{2}$ " x 4".  
 LADD, J. W., Co., Hill. Hardwood billets.  
 LYNN WOOD HEEL Co., Keene. Hard maple, 2" and 2 $\frac{1}{4}$ ".  
 McELWAIN, W. H., Co., Manchester. White Pine, 1"; Spruce, H. Maple,  
 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 2"; Oak, Baswood, 1".

- MEREDITH CASKET Co., Meredith. White Pine, 1", 1½"; Chestnut, 1", 1½".
- MERRIMACK WOOD HEEL Co., Salem Depot. Hard Maple, 2"-2½".
- NEW ENGLAND NOVELTY WORKS, Hill. Mixed Hardwood, White Pine and Hemlock Lumber.
- PAIGE, MORTON, Antrim. Mixed Hardwood, 1", 1½", 1¼".
- PARKER-YOUNG Co., Lisbon and Lincoln. B. B. & M., Pine, Hemlock and Spruce.
- RICHARDS, A. W. & Co., East Rochester. Pine and Hemlock, 1", 2".
- SHELDON BROS., Hancock. Hardwood logs.
- SNOW, WILLIAM, Snowville. B. B. & M. and Pine lumber.
- SPAULDING, M. J., & Co., Rochester. Oak, Beech and H. Maple, 1".
- STEVENS, C. P., Franklin. Spruce, 1"-2", Red Oak, Hard Maple, 2½".
- STONE, ROBERT W., Fitzwilliam Depot. White Pine, Spruce, Beech and Maple logs.
- STONE, S. S., & SONS, Fitzwilliam Depot. White Pine, Spruce, Hemlock and Hardwood logs.
- SOUTH TAMWORTH INDUSTRIES, South Tamworth. Ash and P. Birch logs.
- SOUTH TAMWORTH INDUSTRIES, South Tamworth. White Pine and Hardwood, 1", 1½"-1¾".
- THOMPSON, O. G., & SON, East Westmoreland. Mixed logs.
- TOY MFG. Co., East Weare. White Pine and P. Birch lumber.
- U. S. HAME Co., Andover. No. 1 logs Ash, B. B. & M. and R. Oak.
- WALKER, ALBERT F., & SON, New Ipswich. Hardwood, 1½", 2".
- WEARE MFG. Co., North Weare. White Pine, 1", 2½"; Hemlock, 1"; P. Birch.
- WEBSTER WOOD HEEL Co., Exeter, H. Maple, 2"-2½".
- WELLS & ALLARD, Bristol. Mixed Hardwood logs, White Pine and Hemlock logs.
- WHITNEY BROS. Co. White Pine, 2¼"; Hardwood and Basswood, 2½".
- WILLIAMS MFG. Co., Rumney. Hardwood veneer logs.

## COOPERAGE AND TANKS

- BEAVER MILLS, Keene. White Pine logs.
- BEVERSTOCK, O. D., Co., Keene. Elm logs, mixed Hardwood logs.
- CROCKETT, GEORGE, Hancock. Mixed logs.
- CURTIS, A. L., Wilton. Chestnut and White Pine logs.
- FESSENDEN, ORVILLE D., Brookline. Mixed logs.
- FESSENDEN & LOWELL, Reeds Ferry. White Pine and Chestnut logs.
- IMPERVIOUS PACKING Co., Keene. White Pine and Poplar logs.
- IMPROVED PAPER MACHINERY Co., Nashua. Spruce crating and skids, Cypress, 3".
- JOHNSON, Fred O., Hancock. Mixed logs.
- KEENE WOODENWARE Co., Keene. Mixed logs.
- LANE, CHESTER L., East Swanzey. White Pine logs.
- MARTIN, LEASON, & SON, Richmond (Winchester P. O.). White Pine, Hemlock and Hardwood logs.

- HARMON, R. F., & Co., Conway. *See* Boxes and Shooks.
- HODGE, J., Co., Manchester. *See* Sash, Doors and Blinds. *See*
- HYDE, E. P., Lebanon. White Pine, 1"-4".
- LIBBY, E., & SONS Co., Gorham. *See* Retail Lumber Dealers.
- MARSTON, FRANK A., North Hampton. White Pine, 1" and up; Oak and Ash.
- MILES, H. A., Effingham Falls. White Pine, 1"-4"; Cypress, 1", 2"; N. C. Oak, 1", 2".
- NEWTON, H. G., Francestown. White Pine Finish.
- NORMAN, LOUIS J., Somersworth.
- ODELL, M. E., Derry.
- PACKARD, ALBERT, Enfield.
- PARKER-YOUNG Co., Lisbon. *See* Woodenware, Novelties and Miscellaneous.
- PRESCOTT, FRANK R., Meredith. *See* Boxes and Shooks.
- PUTNAM, J. A. G., South Lyndeboro.
- PUTNEY, C. E., Claremont. *See* Retail Lumber Dealers.
- SANBORN & ATWOOD Corp., Manchester. *See* Sash, Doors and Blinds.
- SEWARD, THOMAS F., Center Barnstead. White Pine and Hemlock, 1" and up; Hardwood flooring.
- SUTHERLAND, OSBORNE A., New Boston. *See* Boxes and Shooks.
- TROW, W. W., & SON, Sunapee. White Pine for finish, Spruce and Hemlock for frame stock, Hard Pine, Cypress and Douglas Fir.
- WHITNEY, E. P., Franconia. *See* Bobbins and Spools.
- WOLFBORO PLANING MILL & SUPPLY Co., Wolfboro Falls. White Pine and Hemlock, 1"-2", 3"; Hard Pine, Douglas Fir.
- YORK, E. J., Dover. *See* Retail Lumber Dealers.

#### SASH, DOORS AND BLINDS, INCLUDING SOME GENERAL MILLWORK

- BELANGER BROS., Salem Depot. White Pine, 1", 2", 3"; Oak, 2"-3"; Hard Pine, 1".
- CHATFIELD, H. H., Newport. White Pine, 1"-3"; Spruce and Hemlock, 1".
- CHICK, J. F., & SON, Silver Lake. *See* Retail Lumber Dealers.
- D'ARCY Co., Dover. White Pine, 2"; Western White and Sugar Pine.
- DERRYFIELD Co., Manchester. White Pine, 1", 1½", 2", 2½", 3"; Western White Pine, 1", 1½", 2", 2½", 3".
- FARR, A. N., & Co., Littleton. White Pine, 1", 2"; Oak and Ash.
- FISH, A. E., & Co., Keene. White Pine, Spruce, Port Oxford Cedar, Western White Pine, Cypress, Hard Pine, Mixed Hardwoods, 1"-3".
- FOSS, DENNIS, & SON, Dover. White Pine, 1", 1½", 2"; Western White Pine, Sugar Pine, 1½", 1¾"; Hemlock, 1".
- GREGG & SON, Nashua. White Pine, 2", 3"; D. Fir, 1", 2"; Western White Pine, 1", 1½", 2"; Hard Pine, 1½", 2"; Western Spruce, 1½", 2", 2½"; Oak, 1", 2"; Ash, 1", 2"; Cypress, 1", 2".

- HODGE, J., Co., Manchester. White Pine, 1"; Y. Birch, 1"; Southern Hard Pine, 1"; Western White Pine, 1".
- HUBBARD SASH AND DOOR FACTORY, Manchester. White Pine, 1", 1 $\frac{5}{8}$ ", 2"; Douglas Fir, Western White Pine, Hard Pine, Cypress.
- KEENE SCREEN CO., Keene. Western White Pine, 1", 1 $\frac{5}{8}$ ", White Pine for crating.
- NETTLETON & HARRIS, Goffstown. White Pine, 1" and up; Western White Pine, 1 $\frac{1}{2}$ ", 2", 2 $\frac{1}{2}$ ", 3"; Red Oak, 2".
- ROLFE, C. M. & A.W., INC. White Pine, 1 $\frac{3}{4}$ ", 2 $\frac{1}{8}$ "; Hard Pine, Western White Pine, 1 $\frac{1}{2}$ ", 2"; Hemlock.
- SANBORN & ATWOOD CORP. White Pine, 1"-4"; Western White Pine, 1"-3"; Hard Pine, all sizes to timbers; Mahogany, Birch, Oak, White-wood, and Cypress, 1" and up.

### BOBBINS AND SPOOLS

- ALDRICH BROS., Lyman. Hardwood logs.
- BLAKE & COLBY, Beebe River.
- COLUMBIA BOBBIN CO. B. B. & M. logs.
- DRAPER CORP., Beebe River. Hardwood logs.
- EATON, H. A., EST., Littleton. B. B. & M. logs.
- EMMONS BROS., West Thornton.
- FOGG BROS., West Milan. B. B. & M. logs.
- GALE, C. M., Landaff. Hardwood logs.
- GOULDING, L. D., Co., Conway. P. Birch bolts and squares.
- HAMBLETON BOBBIN CO., Lebanon. B. B. & M. logs.
- LISBON BOBBIN CO., Lisbon. B. B. & M. logs.
- MOOSILAUKE LUMBER CO., Glencliff. B. B. & M. logs.
- NUTTER, JOSHUA, Bath.
- OAKES, West Milan.
- THE PIKE CO., Pike. B. B. & M. logs, Spruce and White Pine crate stock; Oak, Butternut and Basswood.
- SHELLLOW, CHARLES H., Bath.
- U. S. BOBBIN & SHUTTLE CO. B. B. & M., 1", 2", 2 $\frac{1}{4}$ ", 2 $\frac{3}{8}$ ", 2 $\frac{1}{2}$ "; Basswood, 1", 2 $\frac{1}{2}$ "; P. Birch squares.
- WESTNER, CHARLES, Warren. B. B. & M. logs.
- WHITNEY, E. P., Franconia. B. B. & M. logs, Spruce and Fir logs.
- WHITEFIELD MFG. CO. Whitefield. B. B. & M. logs.
- YOUNG, C. A., Eastern. B. B. & M. logs, Spruce, Fir and Pine logs.

### CRATING, MILL REPAIR, MACHINERY MANUFACTURE AND FOUNDRIES

- ACME KNITTING MACHINE & NEEDLE CO., Franklin. White Pine.
- AMOSKEAG MFG. CO., Manchester. White Pine, 1"-4"; Ash, Maple and Birch, 1"-4"; Cypress, Southern Oak, Hard Pine, Georgia Spruce, Whitewood, Southern Chestnut, Douglas Fir and Western Hemlock.

- ASHUELOT PAPER Co., Hinsdale. Hemlock and Hard Pine.  
 AUTOMATIC PACKING MACHINE Co., Nashua. Crating.  
 BARTLETT, E. A., Nashua. Spruce, 1", 2".  
 BERLIN FOUNDRY AND MACHINE Co., Berlin. White Pine, 1"-3".  
 BEVERSTOCK, O. D., Co., Keene. Riddles, Hoops, etc.  
 BROWN Co., Berlin.  
 BURNETT BROS., Milford. Crating.  
 CLAREMONT PAPER Co., Claremont. Spruce,  $\frac{7}{8}$ "; Hard Pine,  $\frac{7}{8}$ ", 3";  
     Hardwood plugs.  
 COLUMBIA GRANITE Co., Milford. Crating.  
 CONTI BROS., Milford. White Pine, 1".  
 CONTINENTAL PAPER AND BAG MILLS CORPORATION, Ashland. Spruce  
     and Hemlock, 1" and dimension.  
 COY PAPER Co., West Claremont.  
 CRANE MFG. Co., Lakeport. White Pine box boards.  
 CROSS, E. M., MACHINE Co., Berlin. White Pine, 1"-3".  
 FISK PAPER Co., Hinsdale. White Pine and Hemlock, 1", 2" and dimen-  
     sion, Southern Pine, 3"-12" x 12".  
 FLATHER MFG. Co., Nashua. Crating.  
 FORD AND KIMBALL, Concord. White Pine,  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ", 2",  $2\frac{1}{2}$ ".  
 GENERAL TRACTION CORPORATION, Nashua. Crating.  
 GROVETON PAPER Co., Groveton. White Pine for boxes and crating,  
     Hardwood plugs, Spruce and Hardwood dimension.  
 HIGHTON, WILLIAM, & SONS Co., Nashua. White Pine,  $1\frac{1}{4}$ "-3"; Spruce  
     crating.  
 INTERNATIONAL PAPER BOX MACHINE Co., Nashua. Chestnut,  $\frac{7}{8}$ ", and  
     Spruce.  
 INTERNATIONAL PAPER Co., Berlin.  
 KIDDER PRESS Co., Dover. White Pine, Spruce and Southern Pine.  
 KINGSBURY AND DAVIS, Contoocook. Hemlock, 1", and dimension.  
 LAUREL GRANITE Co., Milford. Crating.  
 MAINE AND NEW HAMPSHIRE GRANITE. White Pine and Oak dimension,  
     Spruce dimension and crating, 2", 3", 4" widths.  
 MAINE MFG. Co., Nashua. *See* Furniture, Cabinets and Refrigerators.  
 MCGLOUGHLIN IRON AND BRASS FOUNDRY, Laconia.  
 MONADNOCK PAPER MILLS, Bennington. White Pine, Spruce and West-  
     ern Fir.  
 NASHUA COOPERATIVE IRON FOUNDRY Co., Nashua.  
 NASHUA GUMMED AND COATED PAPER Co., Nashua. N. C. Pine, White  
     Pine, Spruce and Hemlock.  
 NASHUA STEAM PRESS AND BOILER WORKS, Nashua. Crating.  
 NATIONAL BREAD WRAPPING MACHINE Co., Nashua. Crating.  
 NEW WESTERLY GRANITE Co., Milford. Spruce, 1".  
 PARKER-YOUNG Co., Lincoln.  
 PEASE Co., Milford. Paving blocks.  
 PERRY BROS. GRANITE Co., Concord. Spruce crating.

- PIPER, W. H., Manchester. White Pine, 1", 2", Mahogany.  
 POLETTI & FALCETTI GRANITE CO., Milford. Spruce, 1".  
 ROBERTSON BROS., Winchester. Hemlock.  
 ROSSI BROS. GRANITE CO., Milford. Spruce, 1".  
 SCOTT & WILLIAMS, Laconia. White Pine and Spruce crating and shooks,  
 $\frac{1}{2}$ "-2 $\frac{1}{2}$ "; Fir sheathing, Hardwood flooring.  
 SEVIGNE, J. H., Nashua. Crating.  
 SOMERSWORTH FOUNDRY CO., Salmon Falls. White Pine, 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 2";  
 Spruce strapping.  
 SULLIVAN MACHINERY CO., Claremont. White Pine, Hemlock and  
 Spruce, 1", 1 $\frac{1}{2}$ "; White Pine, 1", 2", 3".  
 SWENSON, JOHN, GRANITE CO., Concord. Spruce crating, 1" and 2" x 6";  
 heavy dimension.  
 THOMPSON MFG. CO., Lancaster. White Pine, 1", 2", 3"; Hemlock boards,  
 Spruce dimension, Hard Maple, 1 $\frac{1}{2}$ "-4"; Hard Pine, Cypress, Douglas  
 Fir.  
 TOMELLA & SONS, Milford. White Pine crating, Chestnut and Oak  
 plank, Spruce and Hemlock dimension.

#### CARS, VEHICLES AND BOATS

- BOSTON & MAINE R.R. CO., Concord. White Pine, 1", 1 $\frac{1}{4}$ ", 2", 3"; Spruce,  
 1", 1 $\frac{1}{4}$ ", 2", and dimension; R. Oak plank and dimension, Hard Pine.  
 CARROLL COUNTY LUMBER CO., Center Ossipee. *See* Woodenware, Nov-  
 elties and Miscellaneous.  
 CUMMINGS BROS., Hudson. Oak, 1"-5"; Ash, 1"-5".  
 DODGE, S. P., Co., Manchester. Oak, Ash and Birch, 1 $\frac{1}{4}$ "-4".  
 GOODHUE & HAWKINS, Wolfboro. Oak, White Cedar, Cypress, Ma-  
 hogany and Western Oak.  
 HARRIS, C. F., Littleton. Native Hardwood.  
 HOLT BROS. MFG. CO., Concord. White Oak, 2"-4"; R. Oak, 2"-6";  
 Basswood, 1 $\frac{3}{8}$ "; W. Ash.  
 LACONIA CAR CO., Laconia. White Pine, R. Oak, W. Ash, Hard Pine,  
 Douglas Fir and Mahogany.  
 LEIGHTON, JAMES P., Center Harbor. White Pine and Oak.  
 MAINE CENTRAL R. R. CO., Lancaster.  
 MANCHESTER STREET R.R. CO., Manchester.  
 PERKINS, E. F., Farmington. Hardwood.  
 SANBORN CARRIAGE CO., Manchester. Oak and Ash, 1"-4"; Basswood, 1".  
 SNOWMOBILE CO., THE, West Ossipee. Spruce and Poplar dimension,  
 Basswood, 1".



## WOOD TURNING

- ALEXANDER, GEORGE E., & SON, Sunapee. *See* Woodenware, Novelties and Miscellaneous.
- ALLEN MFG. CO., New Durham. P. Birch squares.
- AMERICAN DOWEL CO., Milford. White Pine, 2".
- AMES MFG. CO., Center Ossipee. B. B. & M., R. Oak and Ash,  $\frac{7}{8}$ "-2 $\frac{1}{8}$ ".
- COMMONWEALTH LAST CO., Manchester. H. Maple blocks, Basswood, rough lasts.
- CONWAY WOOD HEEL CO., Conway. *See* Woodenware, Novelties and Miscellaneous.
- CROWN MFG. CO., Henniker. P. Birch, 1", 2".
- CUTTING, CARL L., Warner. Ash, 2 $\frac{3}{4}$ ".
- DANBURY LUMBER AND NOVELTY CO., Danbury. B. B. & M. (Hard and Soft) logs, Hardwood squares.
- DREW, LYLE S., Union. *See* Woodenware, Novelties and Miscellaneous.
- ESTES, E. B., & SONS, Gorham. *See* Woodenware, Novelties and Miscellaneous.
- FELLOWS, MRS. GERTRUDE F., Kingston. *See* Woodenware, Novelties and Miscellaneous.
- FELTON, S. A., & SONS CO., Manchester. White Pine, 1"-4"; Hemlock, 1" s.e.; Maple and Birch, 1", 1 $\frac{1}{2}$ "; Maple, 1"-2 $\frac{1}{2}$ "; P. Birch blocks.
- FLANDERS HARDWARE CO., North Weare. B. B. & M., 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ".
- GRAFTON LUMBER & TURNING CO., Grafton.
- GRANT, WARREN N., Fitzwilliam Depot. *See* Furniture, Cabinets and Refrigerators.
- HARRIS BROS., Warner. P. Birch, 1 $\frac{1}{8}$ ", 1 $\frac{5}{8}$ ", 2 $\frac{1}{8}$ ".
- LYNN WOOD HEEL CO., Keene. *See* Woodenware, Novelties and Miscellaneous.
- MARTIN, LEASON, & SON, Richmond, Winchester P.O.. *See* Cooperage and Tanks.
- MERRIMACK WOOD HEEL CO., Salem Depot. *See* Woodenware, Novelties and Miscellaneous.
- MOONEY, G. F., & SON, Farmington. P. Birch squares.
- PITTSBURGH PLATE GLASS CO., Keene. Hard Maple, 1", 1 $\frac{1}{4}$ "; Beech,  $\frac{3}{4}$ ", 1".
- SHELDON BROS., Hancock. B. B. & M., Basswood, Oak and Ash logs.
- SOUTH TAMWORTH INDUSTRIES, INC., South Tamworth. *See* Woodenware, Novelties and Miscellaneous.
- U. S. DOWEL CO., Ashland. B. B. & Soft M., 2"; White Pine, 2"-3".
- WALKER, ALBERT F., & SON, New Ipswich. B. B. & M. and Oak, 1", 1 $\frac{1}{2}$ ", 2".
- WELLS & ALLARD, Bristol. *See* Woodenware, Novelties and Miscellaneous.
- WILLARD T. WHITCOMB, East Swanzey. B. B. & M. and other Hardwood logs.

## LIST OF TIMBER OPERATORS \*

Ashby Lumber Company	Ashby, Mass.
Ashby Stock Farms	Ashby, Mass.
Amidon & Martin	Winchester
American Box Company	Nashua
Ayers, B. K.	Concord
Ames Construction Company	Somersworth
Avery & Roberts	Milton
Atherton, A. E.	Lebanon
Amidon, G. F.	West Chesterfield
Ashland Lumber Company	Ashland
Acer Realty Company	Woodsville
Annis Lumber Company	Londonderry
Allen, W. B.	Lancaster
Brown, William & Sons	Winchendon, Mass.
Baker Box Company	Worcester, Mass.
Brooks, Clarence	Winchendon, Mass.
Bates, E. R.	R. F. D. Nashua
Bailey, A. D.	Manchester
Beede & Hall	Reed's Ferry
Baker, S. R.	Concord
Bailey Lumber Company	Suncook
Boutwell, Upton & Boutwell	Concord
Bickford & Huckins	Gossville
Boulia Gorrell Company	Laconia
Bixby, W. A.	Wolfboro
Beauregard, Charles	Marlboro
Batchelder, W. M.	Hampton
Bassett, Harry	Newmarket
Blaisdell & Batchelder	South Lee
Bailey & Mills	W. Hampstead
Brock, Martin S.	Rochester
Berry, F. J.	R. F. D. Rochester
Bowen, George K.	Charlestown
Buswell, G. H.	Windsor, Vt.
Bragg & Buswell	Alstead
Beaver Mills	Keene
Bean & Symonds	East Jaffrey
Bixby, Julia	Hudson
Bickford Lumber Company	Nashua
Bartlett, W. S.	Newton
Batchelder & Javerin	Hampton Falls

\* This list of the larger operations in the State of New Hampshire was prepared by the State Forester, Mr. John H. Foster. It includes all those who cut 50 M feet or more during the year 1925, their total production being 246,808,000 feet.

Beade, D. Earl	Winnepesaukee
Bixby, W. A.	Wolfeboro
Bartlett, Orville G.	Moultonboro
Bemis Industries	S. Tamworth
Bosse, Paul	Conway
Bump, H. D.	Westmoreland
Blakely, Hazen	Colebrook
Brown Company	Berlin
Brooks & Whitney	Franconia
Breck, J. H. & L. J.	Bristol
Cavanaugh Brothers Company	Manchester
Chase, F. H.	Contoocook
Courser, F. W.	Warner
Colby, J. C.	Boscawen
Concord Lumber Company	Concord
Carter Brothers	Tilton
Corson, H. O.	Center Barnstead
Clow, S. W.	Wolfeboro
Carlisle & Lord	Exeter
Corson, F. P.	Raymond
Cole, William M.	Salem Depot
Campbell, S. F.	Windham
Colby Brothers	Danville
Coolidge, Brooks & Rogers	Center Sandwich
Chamberlain, J. B.	New Durham
Clough, N. P. & Company	Lebanon
Currier, S. N.	West Canaan
Carthland, C. S.	Dover
Cook Lumber Company	Laconia
Carroll County Land & Lumber Co.	Center Ossipee
Cone, H. A.	No. Stratford
Clark, Raymond	Ashland
Chandler, Lillian C.	Etna
Converse, Robert	Reed's Ferry
Camp Tecumseh	Center Harbor
Caughey & Pratt	Antrim
Cole, Joseph	Route 5, Dover
Cathcart, F. J.	Farmington
Dutton, F. O.	Chelmsford, Mass.
Dustin, C. F.	Concord
Davis & Rogers	Suncook
Dearborn, Wilbur	Center Barnstead
Day, R. C.	Winchester
Dow, Albert N.	Exeter
Dow, Barton & Pettingill	Pittsfield
Dow, Barton & Pettingill	Suncook
Dodge, Allen	Moultonboro

Davis, Cless G. . . . .	Chesterfield
Damon, Jonas Estate . . . . .	State Line
Donovan & Pierce . . . . .	Ashuelot
Davis, Emiline L. . . . .	Canaan
Dean, Harry G. . . . .	Grafton
Downing, E. C. . . . .	Wentworth
Deane, Ben . . . . .	Ashland
Drewry Brothers . . . . .	No. Weare
Drew, Greanleaf S. . . . .	Route 5, Dover
Eames & Sidelinker . . . . .	Reading, Mass.
Emery, C. W. . . . .	Auburn
Ellison, L. H. . . . .	Durham
Eaton, M. H. . . . .	Union
Ellinwood, O. D. . . . .	Littleton
Eastman, Hiram A. . . . .	New London
Fox Brothers . . . . .	Fryeburg, Maine
Farrington, A. W. . . . .	Athol, Mass.
Fessenden & Lowell . . . . .	Reed's Ferry
Fessenden Company Incorporation . . . . .	Londonderry
Forest Improvement Company . . . . .	Concord
French, S. E. & Son . . . . .	Center Barnstead
Folsom, Frank . . . . .	Raymond
Fellows, G. F. . . . .	Kingston
Fisher, John E. . . . .	Rochester
Fisk, George . . . . .	Littleton
Felker Brothers . . . . .	Rochester
Freeman, C. W. . . . .	Rochester
Flint, E. F. . . . .	Marlboro
Frazier, Fred & Sons . . . . .	Troy
Ford, C. A. . . . .	Canaan
Fernald, T. E. . . . .	Nottingham
Fellows & Son . . . . .	Manchester
Foss & Hersey . . . . .	Somersworth
Foss, James H. . . . .	Center Strafford
Farrar, Charles P. . . . .	Henniker
Green Company Incorporation . . . . .	Bellows Falls, Vt.
Gregg, Arthur E. . . . .	Barnet, Vt.
Gale, John O. . . . .	Etna
Gile & Brackett . . . . .	Hanover
Giulmett, Napoleon . . . . .	Madison
Greer, B. F. Estate . . . . .	Goffstown
Graig & Cavanaugh . . . . .	Manchester
Glines, L. A. . . . .	Canterbury
Gerry & Mooney . . . . .	Madison
Gerry, J. O. & Son . . . . .	Madison
Gove, L. J. . . . .	Raymond
Gillingham, G. E. . . . .	Chester

Glidden, E. B. ....	Rochester
Gove, R. W. ....	Fitzwilliam
Giles & Langley ....	Farmington
Gonic Manufacturing Company ....	Rochester
Gardner, W. C. ....	Springfield
Gordon, W. S. ....	North Woodstock
Gowen Brothers ....	Stratham
Goss, W. C. ....	Henniker
Hamilton, Benjamin P. ....	Waterboro, Maine
Howe Lumber Company ....	Leominster, Mass.
Hackwell & Stevens ....	Worcester, Mass.
Hatch, H. A. ....	Bellows Falls, Vt.
Heald, Philip C. ....	Wilton
Hill, Louis J. ....	Hancock
Hartshorn, Frank Company ....	Milford
Hoyt, H. O. ....	Henniker
Hill Lumber Company ....	Hill
Hill, John P. ....	Warner
Heath, C. E. & Co. ....	Penacook
Holmes & Choate ....	Henniker
Huckins, S. O. ....	Center Ossipee
Hobbs, F. P. ....	Wolfeboro
Hamlin, L. S. & T. ....	
Hoyt, Winthrop P. ....	Greenland
Horner, G. S. ....	Melvin Village
Hatch, Carroll E. ....	Alstead
Hatch & Bowden ....	Dover
Hayes, James D. ....	Dover
Hall, F. H. & Sons ....	Dover
Hale & Twombly ....	R. F. D. Dover
Howe, Earl A. ....	Claremont
Hopkins, Frank C. ....	Keene
Hart, D. J. Box Company ....	Marlboro
Hutchins, H. E. ....	Groton
Heath, Charles ....	Hampstead
Hunter, Ernest W. ....	Melvin Village
Hayden, L. J. ....	Brookline
Hadley, Harry G. ....	New Boston
Hall, Edward B. ....	Milford
Hutchinson & Holt ....	Milford
Holt, Fred A. ....	Milford
Haley, Lawrence D. ....	East Barrington
Huckins, Fred E. ....	Strafford
Holmes, B. M. ....	Georges Mills
Irving, W. A. ....	Salem, Mass.
Impervious Package Company ....	Keene
Israel, Max ....	Henniker

Johnson Lumber Company	Manchester
Jaquith, B. J.	Tilton
Jewell, E. C.	West Rindge
Jaquith, D. F.	Rumney
Jenkins, H. T.	Portsmouth
Johnson, F. B.	Bradford
Knight, R. E.	South Berwick, Maine
Kendall, James E.	R. F. D. 2, Nashua
Kennett, Frank E.	Conway
Keene Wooden Ware Company	Keene
Kellom & Handy	Winchester
Knight & Tarbox	Marlboro
Kimball, F. G.	Manchester
Kelley, Percy	Center Harbor
Kimball, W. H.	Stratford
Leary, A. C.	Canaan
Lund, Raymond C.	Brookline
Lorden, D. F.	Milford
Langdell Lumber Company	Manchester
Lane, C. L.	East Swanzey
Ladd, L. P.	Epping
Lewis, Fred A.	Winchester
Locke, I. M.	Rochester
Lamb, Herbert G.	Alstead
Lewis, Fred A.	Winchester
Lake Tarleton Club	Pike
Livermore Mills	Livermore
Leach Sarvin & Company	Northfield Farms, Mass.
Lyford, Preston A.	Exeter
Leonard, R. C.	Grafton Center
Lewis & Gordon	Alstead
Libby, E. & Sons Company	Gorham
Leach, F. W.	West Canaan
LeBombard, William	Etna
Mason & Parker Company	Winchendon, Mass.
Merriam, Belsey G.	Woodstock
Muldoon Brothers	Pelham
Maxwell, W. H.	Manchester
Mason, L. T.	Canterbury
Martin & Sawyer	Warner
Meredith Grain Company	Meredith
Mason, Arthur	Ossipee
Mason & Moulton	Ossipee
Metcalf, E. H.	Center Sandwich
Morse, Irving E.	Alstead
Mathes, M. Everett	Dover
Murdock, E. & Company	East Sullivan

Martin, Fay M. . . . .	Winchester
Merrill, C. N. & Son . . . . .	Bristol
Merrill, A. D. . . . .	West Thornton
Moulton, A. C. & Son . . . . .	Plymouth
Moosilauke Lumber & Bobbin Co. . . . .	Pike
McDougall, Ira . . . . .	Grasmere
Morrill, Leon E. . . . .	Route 4, Laconia
Moore, F. W. . . . .	East Jaffrey
Miller, C. T. . . . .	East Jaffrey
Moore & Preston Coal Company . . . . .	Manchester
Mason, W. B. . . . .	Chester
Merrill, E. L. . . . .	North Sutton
New England Box Company . . . . .	Greenfield
Nichols & Appleton . . . . .	Peterboro
Narcross, O. B. . . . .	Keene
Newport Lumber Company . . . . .	Newport
Newell, C. J. . . . .	Alstead
Neal, Erlon H. . . . .	Rochester
Norton, L. F. . . . .	Route 5, Dover
Overman, A. H. . . . .	Westmoreland Depot
Palmer, Edwin F. . . . .	Lawrence, Mass.
Parker & Young . . . . .	Lisbon
Proctor Brothers Company . . . . .	Nashua
Peavey, George F. Estate . . . . .	Milford
Parker, Peaslee & Odell . . . . .	Reed's Ferry
Perham Parker . . . . .	Reed's Ferry
Parker, Frank A. . . . .	Goffstown
Pellens, G. I. . . . .	Manchester
Perkins, C. L. . . . .	Newbury
Phelps, George A. . . . .	Concord
Pettengill & Rogers . . . . .	Suncook
Patenaud, Walter C. . . . .	Henniker
Platt Box Company . . . . .	Troy
Pierce, Harry A. . . . .	Keene
Plumber Lumber Company . . . . .	Union
Porter, G. L. . . . .	Alstead
Prescott, Fred . . . . .	Winchester
Pearson, William . . . . .	Keene
Pike, E. B. Estate . . . . .	Pike
Prince, R. H. . . . .	Salisbury
Perkins, C. L. . . . .	So. Newbury
Rockwood, Paul C. . . . .	Ashburnham, Mass.
Robie, L. S. . . . .	Hardwick, Vt.
Rogers & Godfrey . . . . .	Canaan
Rideout, Lewis S. . . . .	Nashua
Rolfe, C. M. & W. A. . . . .	Penacook
Randall, Isaac . . . . .	Hampstead

Reed, Frank J. . . . .	Newport
Reney Brothers . . . . .	Grantham
Ross, E. J. . . . .	Bath
Renfrew, N. S. . . . .	Plymouth
Rust, Horace . . . . .	Wolfeboro
Rust, John R. . . . .	Westmoreland
Robinson, George A. . . . .	Marlboro
Roberts, J. H. & W. P. . . . .	Dover
Sargent, G. W. & Sons . . . . .	Salem, Mass.
Stevens & Son . . . . .	Bradford, Vt.
Stacey, James A. & Son . . . . .	Windsor, Vt.
Sanborn, A. O. . . . .	Orford
Sheldon, H. M. . . . .	Hancock
Smith, E. A. . . . .	Manchester
Sanborn, Albin J. . . . .	Pittsfield
Snyder, J. M. . . . .	Contoocook
Sanborn, C. G. . . . .	Concord
Stone, Charles W. . . . .	R. F. D. Pittsfield
Smith, J. E. . . . .	Meredith
Smart, C. E. & H. P. . . . .	Center Ossipee
So. Tamworth Industries . . . . .	South Tamworth
Stacke, Herman C. . . . .	Manchester
Spaulding & Frost . . . . .	Fremont
Seaver, E. E. . . . .	New Hampton
Studley Box & Lumber Company . . . . .	Rochester
Shaw, C. C. . . . .	Rochester
Sawyer, H. B. . . . .	Sunapee
Sargent, John G. . . . .	Newport
Sturtevent, C. L. . . . .	Keene
Stone, S. S. & Son . . . . .	Fitzwilliam
Stone, D. S. . . . .	Woodsville
Smith, Andrew C. . . . .	Raymond
Smith, Charles E. . . . .	Laconia
Sargent, E. L. . . . .	Grafton
Smith, Edward E. . . . .	Antrim
Smith, L. E. . . . .	Henniker
Smith & Kendall . . . . .	Concord
Taylor & Cilley . . . . .	Manchester
Thayer, Walter S. . . . .	New Ipswich
Taft, W. H. . . . .	Charlestown
True, E. C. . . . .	Chester
True, R. S. . . . .	Chester
Thompson, Winnie . . . . .	Rochester
Tobey, Fred E. . . . .	Plymouth
Thorpe, F. E. & J. L. . . . .	Lisbon
Twitchell Brothers . . . . .	Milan
Todd, George C. . . . .	Rindge



United Box & Lumber Company . . . . .	Rochester
Upton & Whitcomb . . . . .	Hancock
Varney, O. E. . . . .	Alton
Veazey, W. D. & Company . . . . .	Laconia
Varney, Harry M. . . . .	East Rochester
Vinall, George W. . . . .	Meredith
Valley View Farm . . . . .	Deering
Wilfore, T. H. . . . .	Rumney Depot
Webber, Horace E. . . . .	Manchester
West Side Lumber Company . . . . .	Manchester
Walker, R. P. . . . .	New Ipswich
Whiting, D. & Sons . . . . .	Wilton
Warren Lumber Company . . . . .	Peterboro
White Mountain Freezer Company . . . . .	Nashua
Weeks, Stephen L. . . . .	Gilmanton
Willey, W. H. . . . .	Wolfeboro Falls
Welch, James . . . . .	West Ossipee
Wiswall, Frank A. . . . .	Marlboro
Walker, John . . . . .	Newmarket
Walker, J. B. . . . .	Newmarket
Whitcher, H. P. . . . .	Strafford
Wellington, E. I. . . . .	Rindge
Woods, Harry . . . . .	Bath
Weeks, C. W. & Son . . . . .	Rochester
Warren, F. G. . . . .	Concord
Young, H. Gladys . . . . .	Sunapee

## PART IV

### APPENDIX

#### SOURCES OF INFORMATION

No attempt has been made to present a complete list of sources of information. Rather the following sources may be considered as supplementing those already well known to all lumbermen, such as the various trade journals, etc.

U. S. Department of Agriculture, Forest Service, Washington, D. C.

The U. S. Forest Service furnishes information on all matters pertaining to forestry, or refers the inquirer to the proper source of information. The headquarters of the White Mountain National Forest are at Laconia, N. H. Inquiries concerning this forest may be addressed to the Supervisor, Ira T. Yarnall.

U. S. Department of Agriculture, Forest Service, Forest Products Laboratory, Madison, Wisconsin.

Information on:

The mechanical and technical properties of all woods.

Costs, methods, wastes, etc., in the utilization of wood.

The requirements of various wood-using industries, based upon intensive studies.

The properties of New England Hardwoods compared with the same species from other regions, etc.

U. S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station, Amherst, Mass.

This station is devoted to forest research in the forests of New England and New York, and is supplying much needed information concerning the growth and protection of forests of this region.

U. S. Department of Agriculture, Bureau of Plant Industry, Washington, D. C.

Information on:

Plant diseases such as white pine blister rust, wood rots, etc. (The State blister rust leader is located at Concord, care of Forestry Department.)

U. S. Department of Agriculture, Bureau of Entomology, Washington, D. C.

Information on:

Forest insect pests such as the white pine weevil, Pales weevil, spruce bud worm, etc.

Coöperative Extension Work in Agriculture and Home Economics, State of New Hampshire and U. S. Department of Agriculture, Extension Service, Durham, N. H., and the

University of New Hampshire, Department of Forestry, Karl W. Woodward in charge, Durham, N. H.

Instruction and advice in the practice of forestry.

U. S. Department of Commerce, Bureau of the Census, and Bureau of Standards, Washington, D. C.

Information on:

Lumber grades, standardization of lumber grades, elimination of waste, statistical reports on lumber and other forest products, recommended requirements for building construction, etc.

State of New Hampshire, Forestry Department, John H. Foster, State Forester, Concord, N. H.

Information on:

Forest resources of the State, production and consumption of lumber and other forest products, State forest reservations, forest fire laws, registration of portable sawmills, sale of forest planting stock, tax abatement for forestation, leaving of seed trees, classification of forest land under forest tax law,\* etc.

Yale University, Yale Forest, James W. Toumey in charge, Keene, N. H.

The Yale demonstration and research forest affords an excellent opportunity for timber land owners to become familiar with forestry practice, and to get advice in the handling of their own forests and wood lots.

Society for the Protection of New Hampshire Forests, 4 Joy St., Boston, Mass., Philip W. Ayres, Forester.

The society is devoted to the preservation of the forests of New Hampshire, and the promotion and encouragement of all movements aimed to improve the forests and forestry.

The New Hampshire Lumbermen's Association, Manchester, N. H.

This association, composed of nearly two hundred members, aims to promote the interests of its members, both producers and consumers, and, in general, to improve conditions in the lumber business.

The National Lumber Manufacturers' Association, Wilson Compton, Secretary and Manager, Chicago, Ill.

This association has had a leading part in the promotion of the interests of the lumber business in general, has published numerous reports on the status of the lumber business and has recommended ways and means of improving existing conditions.

\* For the benefit of timber land owners who may have land suitable for classification, the recently enacted Forest Tax Law is herewith given in full.

## CLASSIFICATION OF LAND UNDER FOREST TAX LAW †

**APPLICATION FOR CLASSIFICATION.** Before April first in any year any owner of forest land, on which the value of the growth, exclusive of fuel wood, does not exceed twenty-five dollars per acre on the average, and which is so stocked with young trees, or is to be set to young trees, as to promise a minimum prospective average yield of twenty-five thousand board feet of merchantable timber per acre, exclusive of water, bog or ledge, may apply in writing to the assessors, or to the tax commission for land in unorganized places, to have not more than one hundred acres of said land in any one town listed as classified forest land. Such application shall contain a description of the land sufficiently accurate for identification. (1923, 66:1. 1925, 65:1.)

**PROCEDURE.** In the month of April following the receipt of such application the assessors shall decide whether the property fulfills the requirements for classification and shall notify the owner of their decision, giving their valuation of the tract as land alone, and if within ten days of notification the owner accepts their decision the assessors shall give him a certificate containing the name of the owner and a description of the parcel to be classified, and stating that the land described has qualified for classification under the provisions of this subdivision. (1923, 66:2. 1925, 65:2.)

**RECORD.** Upon the recording of this certificate by the owner in the registry of deeds for the county where the land lies the parcel shall become classified forest land. (1923, 66:2.)

**DESIGNATION IN LIST.** Each parcel of land so classified shall thereafter be designated in the annual valuation list of the town, in the column provided for the description of each parcel of land, as classified forest land so long as it remains classified. The valuation for taxation of land classified under this subdivision shall not include the value of forest trees growing thereon. (1923, 66:2.)

**NEW HOLDER.** When classified forest land is sold, or otherwise changes title, the obligations of this subdivision shall devolve upon the new holder of the title. (1923, 66:2.)

**TIMBER.** The standing growth on classified forest land shall not be taxed, but the owner of such land, except as hereinafter provided, shall pay a tax on the same valuation, as other property, in the same year, for any timber cut therefrom. (1923, 66:3.)

**CUTTING FOR USE.** He may cut wood from such land for his own use or for the use of a tenant only, and not in excess of fifty dollars stumpage value in any one year free of tax, and shall make a sworn return to the assessors in April of each year of the amount of wood and timber cut in the year preceding April first. (1923, 66:3.)

† From Forest Laws, State of New Hampshire, in force January 1, 1926.

**BUILDINGS.** Buildings and other improvements, water rights, or mining rights, or other land value on classified land shall be taxed as real estate with the land on which they stand. (1923, 66:3.)

**VALUATION FOR APPORTIONMENT.** The valuation for apportioning the state and county tax among the towns, on classified forest land, shall be the valuation of the land made for purposes of local taxation. (1923, 66:3.)

### *Termination of Classification*

**BY ASSESSORS.** When in the judgment of the assessors classified forest land contains on the average per acre twenty-five thousand board feet of merchantable timber, they shall notify the owner that two years from date of notification the land and timber will be taken from the classified forest land list and placed in the general property tax list. (1923, 66:4.)

**REDUCTION OF TIMBER.** Should the owner elect to reduce the volume of timber below the average of twenty-five thousand board feet per acre, under the conditions of section 32, the land shall remain classified. (1923, 66:4.)

**OTHER USES.** When in the judgment of the assessors classified forest land becomes more valuable for other use than the production of trees they may, after thirty days' notice, withdraw said land from classification, and shall record in the registry of deeds a certificate setting forth such withdrawal, and containing reference by book and page of record of the certificate under which said law was classified. (1923, 66:4.)

**BY OWNER.** An owner may withdraw his land from classification at any time by the payment of the land tax, and a tax on the estimated value of the standing timber, at the same rate of other property for that year. (1923, 66:4.)

**TAXES DUE.** Within thirty days after an owner requests to withdraw his land from classification the assessors shall determine the taxes due thereon, which must be paid before the land is taken from the classified list. (1923, 66:4.)

### *Appeals*

**WITHDRAWALS.** The owner may appeal against any withdrawal to the state forester, whose decision shall be final. (1923, 66:4.)

**ELIGIBILITY.** In case of dispute as to the eligibility of land for classification, or as to the volume of wood or timber contained on such land, or cut therefrom, either party may appeal to the state forester who shall examine the property and hear both parties, and his decision shall be final. (1923, 66:5.)

**PENALTY.** Any owner of classified forest land who fails to comply with the requirements of this chapter shall be fined not less than ten nor more than two hundred dollars, and the land may be withdrawn from classification by the assessors. (1923, 66:5.)