Bulletin No. 61
November,
1941

NEW HAMPSHIRE FOREST MARKET REPORT

UNIVERSITY OF NEW HAMPSHIRE EXTENSION SERVICE

To meet the present emergency needs New Hampshire farm woodlands should produce their maximum in wood and timber. Yet to make certain that trees are cut in a way to provide for the future, be sure to select and mark the trees to be cut from woodlands.

UNIVERSITY OF NEW HAMPSHIRE EXTENSION SERVICE

Published and distributed under the Acts of Congress of May 8 and June 30, 1914, by the University of New Hampshire Extension Service, Durham, N. H., H. B. Stevens, Acting Director. The United States Department of Agriculture cooperating.

NEW HAMPSHIRE FOREST MARKET REPORT, FALL, 1941

by

K. E. Barraclough, Extension Forester

The defense program has noticeably increased the price and demand for native forest products. As transportation facilities are taxed to maximum capacity in moving supplies from West to East, we will be obliged to depend more and more upon local timber resources. Lumber buyers are scouring the country-side for merchantable stumpage. In central and southern New Hampshire a large number of mills have been set up to saw green timber left standing in the wake of the hurricane of 1938. Lots considered impractical to operate previously are now being worked over. As hurricane lumber is moved off the market, the demand for standing timber will become more pronounced.

Lumber prices have increased during recent months faster than stumpage values. Some of the increased price in lumber results from added cost of operating from stump to stick. September 21, 1940, native white pine, number 1 and 2 common, was quoted on the Boston market at $48 to $51 per thousand. On October 4, 1941, the same item was quoted on the Boston market at $50 to $59 per thousand.

The estimated national lumber production for 1941 was 32 billion feet. The goal set by the United States Department of Agriculture for lumber production during 1942 is an equal amount, which is 1.8 billion feet less than estimated requirements. The net imports are estimated at 0.7 billion feet, leaving a deficit of 1.1 billion feet to come from stock. There are many factors that may prevent production reaching even 32 billion feet, such as possible shortages of wood and mill labor, difficulty in getting logging and mill equipment and repair parts, difficulties of transportation including shortage of ships, cars and trucks, and delays in moving loads, rising costs and possible fixed selling prices. To produce 32 billion feet of lumber requires the operation of the sawmill industry at approximately 90 per cent capacity for an entire year, which may be difficult considering the above factors, possible adverse weather conditions, and labor disputes.

During the years 1936-40, the annual production of lumber in the Northeast, which includes New England and the Mid-Atlantic States, was nine hundred million feet. For the year 1940, the annual production was one billion feet. Based upon estimated requirements of 32 billion feet of lumber, the goal set by the Government for the Northeast during 1942 is 1.1 billion feet. In earlier estimates by the Government, it was the opinion that the national lumber requirements for 1942 would be 38.2 billion feet. However, later estimates that took in consideration of curtailment in home building because of the defense program, sets the figure at 32 billion feet. In spite of the re-

vised estimates, it must be kept in mind that these figures are estimates, and it is quite possible that with the shortage of steel and other products generally used in place of wood, the requirements for 1942 may be boosted above the estimate.

The situation in relation to pulpwood is as serious. Normally, much of the paper and pulp needs were imported in the form of either wood, pulp, or paper. These imports, for the most part, have been cut off, while national paper consumption continues to increase from 13 million tons in 1938 to approximately 18 million tons for 1940. Pulpwood consumption in the nation increased from less than 11 million cords in 1939 to about 14 million cords in 1940. The pulpwood production goal for 1942 set by the Government is 15.8 million cords. Of this amount, the Northeast region is expected to produce 3.5 million cords. The annual production in the region for the years 1936-40 was 1.9 million cords, and for 1941 the production is estimated at 3.3 million cords.

In New Hampshire, pulp mills are operating full time. Pulp companies from outside of New England are purchasing pulp from farmers in areas where local pulp companies compete with each other for the farmer's wood.

The scarcity of labor for woods work during the last several months has resulted in a shortage of dry wood. Farmers cut annually for their own use and for sale 200,000 to 225,000 cords. Wood is generally cut during the fall and winter, and most of it allowed to season for use the following winter. There is not as much dry wood on hand at present (fall of 1941), as compared with one year ago. Farmers as a group will keep their own homes warm during the winter months, but if there is a shortage in fuel oil and coal, many village folks may be obliged to burn green wood.

Anticipating possible transportation difficulties in getting fuel oil and coal into many sections of the nation, the Government estimates that the fuelwood production for 1942 should be 75 million cords, of which 10.5 million cords should be produced in the Northeast. For the year 1936, the production of fuelwood in the Northeast was 8.4 million cords. It is believed that the heaviest demand for fuelwood will be in sections of the Northeast where there is the greatest danger of fuel oil and coal shortages due to transportation difficulties.

There will be increased demands for ties, fenceposts, mine timbers, veneer logs, cooperage, poles, piling, distillation wood, and other wood products. The demand for fence posts will be greater as it becomes more difficult to secure iron posts for fencing. Veneer logs, especially yellow birch, are at a premium, especially where such woods are used in airplane construction. With increased transportation by rail, the demand for ties will increase. The demand for wood for distillation has greatly increased during recent months.

Looking ahead to a time when we will need to make adjustments for the post-war period, the income from the sale of forest products may be of even greater importance. Curtailments and adjustments in international trade will continue to be a problem following the war. Such a situation will force farmers in other regions of the country to turn to new enterprises or to increase or continue war-

time production of dairy and poultry products as a source of income. Inter-regional competition on a scale never before experienced may face New Hampshire agriculture. Heavy applications of fertilizers are necessary to maintain the productivity of our soil. Large amounts of feeds must be imported. Should other regions enter into increased or continued war-time production of dairy and poultry products for shipment into our New England markets, it would be highly desirable for New Hampshire farmers to have an abundance of growing timber that could be available as a supplement to farm income from other sources.

The general forestry situation in New Hampshire requires that some action be taken to bring people to accept their responsibility in dealing with the forest problems of the state. The intensity of management of woodlands by the owners will be the factor that will determine the public policy on this matter. In the interest of protecting the timber resources of New Hampshire during the present emergency so that the maximum amounts of wood and timber will be produced to meet present requirements, but cut in a manner to

Table 1. *Eastern White Pine Prices, Delivered on a Boston Rate of Freight

Date**	D Select 1x6 & 8	No. 1 & 2 Common S 2 S 1x6, 7, 8 & 9	No. 3 Common S 2 S 1x6, 7, & 8	No. 4 Common S 1 or 2 S 1x5, wider	Round Edge Box	Rough Box and Better Large Lots F.O.B. Mill
Sept 21, 1940 per M	$61.50 to 75.00	$48.00 to 51.00	$37.00 to 39.00	$30.00 to 33.00	$21.00 to 23.00	
Oct. 5, 1940 per M	70.00 to 75.00	50.00 to 52.00	38.00 to 40.00	32.00 to 33.00	21.00 to 23.00	
Nov. 16, 1940 per M	72.00 to 75.00	50.00 to 52.00	40.00 to 43.00	33.00 to 36.00	22.00 to 24.00	
Jan. 11, 1941 per M	73.00 to 75.00	50.00 to 52.00	40.00 to 42.00	36.00 to 39.00	23.00 to 25.00	
April 26, 1941 per M	72.00 to 75.00	50.50 to 54.50	41.00 to 43.00	36.00 to 39.50		
July 5, 1941 per M	72.00 to 75.00	52.50 to 55.00	41.00 to 44.00	36.00 to 39.50		
Aug. 9, 1941 per M	72.00 to 75.00	50.00 to 56.00	42.00 to 44.00	37.50 to 39.50		
Sept. 27, 1941 per M	73.00 to 78.00	50.00 to 59.00	41.00 to 44.50	37.50 to 40.00		25.50 to 28.50

*Commercial Bulletin

**The price of lumber on the Boston market has gradually advanced during the last 12 months.

Table 2. Lumber Prices for Key Years*

The Highs and Lows in Spruce, Southern Pine, Fir, Oak Flooring, 1921-1940, Delivered Boston Rate Points

	Southern Pine Air Dried Roofers 1x8		Spruce Boards 1x6 & 7		Spruce Dimension 8" Base		No. 1 Doug. Fir 2x8, on dock		B Rift Flooring Southern Pine		Oak Flooring Select Pl. white	
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
1921	$34	$27	$50	$34	$56	$44			$70	$64		
1923	37	30	45	36	50	45	$42	$36	95	70	$100	$85
1928	33	28	38	37	42	40	27	24	76	70	76	69
1929	31	27	40	37	42	39	32	28	83	69	85	72
1932	21	18	26	23	28.50	25	21	17	66	40	53	41
1933	32	18	32	23	33	25	30	25	52	40	71	45
1935	26	22	35	30	35	31	28	23	68	62	64	55
1937	35	23	38	34	38	34	35	29	82	66	82	67
1938	30	22	36	31	36	32	30	27	68	58	75	56
1939	33.50	26	38	32	38	32	33	27.50	72	65	70	58
1940	43	27	41	35	43	36	42.50	33	77	65	78	60
1941	41	29	44	40	47	42	43.50	41.50	77	75	80	72

*Commercial Bulletin

provide for future needs, every woodland owner when marketing forest products should apply the following forest practice rules:

1. Leave enough trees standing to provide another profitable cutting in 5 to 20 years, and manage the cuttings so as to encourage the natural reseeding of good timber trees. Leave enough merchantable timber to provide lumber for current farm repairs, for use in emergencies, and for use as a source of ready cash.
2. Sell standing timber only by a written contract or agreement with the buyer. The contract should provide for cutting practices that will safeguard the the timber-producing capacity of the woodland. If possible mark trees to be cut or have a forester go over your woodlands and select the cutting area and mark the trees for cutting.
3. Economize by using farm-grown wood for construction, repairs, and fuel. Obtain such wood by improvement and selective cuttings.

One New Hamphire lumber company gives the following price lists on various items of pine and spruce lumber. The prices quoted are to retail lumber merchants. In sales made to wholesalers an 8 per cent deduction in price on all items is allowed. There is a 2 per cent discount for cash in ten days. It will be observed that the prices for pine lumber quoted on the Boston Market (Table 1) compare fairly closely with prices for pine lumber quoted at a point in New Hampshire, after allowing a $5.00 per thousand charge for trucking lumber from New Hampshire to Boston.

Price List Effective September 1st, 1941

Dimension Stock Spruce Rough

2 x 3 & 4	$32.00
3 x 4 & 4 x 4	32.00
2 x 6 & 7	33.00
3 x 6 & 4 x 6 & 6 x 6	35.00
2 x 8 & 3 x 8	36.00
4 x 8 & 6 x 8 & 2 x 9	37.00
8 x 8	39.00
2 x 10 to 4 x 10	41.00
2 x 12 to 4 x 12	43.00

Board Stock Spruce Rough

1 x 3, 4, & 5	$31.00
1 x 6 & 7	33.00
1 x 8 & 9	35.00
1 x 10	37.00
1¼ x 6 & 7	37.00
1¼ x 8	39.00
1½ x 8	41.00
1¼ x 10	43.00

Spruce furring DISIE and bundled

1 x 2	$33.00
1 x 3	34.00

These prices are F.O.B. yard, and apply to minimum truck loads of 6,000′.
For all 16′ lengths add $1.00 per M.
For 16′ to 20′ add 50¢ per foot per M.
Over 20′ takes a special price.
Dressing 1 or 2 sides $2.00 per M.
Dressing 4 sides or dressed and matched $3.50 per M.
All quotations subject to Prior Sales.
Above prices based on loads being rolled.
Any change of delivery point at request of consignee will be charged for according to increased costs of trucking or handling.

Table 3. Eastern White Pine Price List

As published by a New Hampshire Lumber Company during 1941

Size	No. 2 COMMON & BETTER			No. 3 COMMON			No. 4 COMMON		
	Rough	D1S, D2S D1S1E	D4S D2S & M	Rough	D1S, D2S D1S1E	D4S D2S & M	Rough	D1S, D2S D1S1E	D4S D2S & M
1 x 3	$44.00	$46.00	$47.50	$34.00	$36.00	$37.50	$31.00	$33.00	$34.50
1 x 4	44.00	46.00	47.50	34.00	36.00	37.50	31.00	33.00	34.50
1 x 5	45.00	47.00	48.50	32.00	34.00	35.50	28.00	30.00	31.50
1 x 6	43.00	45.00	46.50	34.00	36.00	37.50	31.00	33.00	34.50
1 x 7	43.00	45.00	46.50	34.00	36.00	37.50	31.00	33.00	34.50
1 x 8	43.00	45.00	46.50	34.00	36.00	37.50	31.00	33.00	34.50
1 x 9	44.00	46.00	47.50	34.00	36.00	37.50	31.00	33.00	34.50
1 x 10	45.00	47.00	48.50	36.00	38.00	39.50	32.00	34.00	35.50
1 x 11	49.00	51.00	52.50	36.00	38.00	39.50	32.00	34.00	35.50
1 x 12	55.00	57.00	58.50	39.00	41.00	42.50	34.00	36.00	37.50
1 x 13 & wdr.	59.00	61.00	62.50	39.00	41.00	42.50	36.00	38.00	39.50
1 x 4 & wdr.	45.00	47.00	48.50	35.00	37.00	38.50	31.00	33.00	34.50
1 x 5 & wdr.	46.00	48.00	49.50	35.00	37.00	38.50	32.00	34.00	35.50
1 x 6 & wdr.	47.00	49.00	50.50	36.00	38.00	39.50	32.00	34.00	35.50

Above prices F.O.B. mill.
All above items double end trimmed—Graded on N. E. L. M. A. rules.
For specified lengths add $2.00—For Beading, Novelty add $1.00—For bundling add $2.00.
For resawing add $2.00 for first cut, $1.00 for each additional cut.
Shipping weights per M.B.F. will approximate 2,400 lbs. for rough, 2,000 lbs. for 2 sides, 1,800 lbs. for 4S or D2S & M.
For 8/4 add $5.00 in No. 3 and 4, $10.00 for No. 2 Common.

The timber salvaged from the 1938 hurricane has helped to stabilize the pine lumber market in New England during the present period of increased demands for forest products. The salvaging of the wind-thrown timber in an orderly manner by the United States Forest Service greatly relieved the shock of the 1938 hurricane in our rural areas. See Tables 4 and 5.

Table 4. Northeastern Timber Salvage Administration:* Estimated Quantities of Salvagable Timber Felled by the Hurricane in New England, September 21, 1938

State	White Pine	Other Soft Wood	Hardwood	Total
	1,000 ft. log scale	1,000 ft. log scale	1,000 ft. log scale	1,000 ft. log scale
Connecticut	54,000	3,000	33,000	90,000
Maine	82,000	5,000	2,000	89,000
Massachusetts	375,000	3,000	18,000	396,000
New Hampshire	606,150	80,550	48,300	735,000
Rhode Island	36,171	3,000	22,555	61,726
Vermont	85,000	30,000	40,000	155,000
New England	1,238,321	124,550	168,855	1,526,726

*Agricultural Statistics, 1940, U. S. D. A.

Table 5. New England Blow-Down Saw Timber Purchased in 1939 by the Northeastern Timber Salvage Administration and Estimated Private Log Purchases*

State	Receiving Stations			Purchased by Timber Salvage Administration				Private Purchases of Logs
	Wet Stations	Dry Stations	Total	At Wet Stations	At Dry Stations	Total	Approximate Expenditures for Logs	
	No.	No.	No.	1,000 ft. log scale	1,000 ft. log scale	1,000 ft. log scale	Dollars	1,000 ft. log scale
Connecticut	19	187	266	6,015	12,163	18,178	221,480	11,400
Maine	35	3	38	45,625	1,174	46,799	551,050	22,500
Massachusetts	70	125	195	60,188	64,499	124,687	1,443,360	165,000
New Hampshire	126	139	265	228,194	151,164	379,358	4,423,780	154,000
Rhode Island	7	71	78	2,659	7,487	10,146	114,530	16,000
Vermont	8	42	50	2,500	41,833	44,330	549,700	19,000
New England	265	567	832	345,181	278,320	623,501	7,303,900	387,900

The Timber Salvage Administration purchased 57,193 Cds. of Pulpwood in New Hampshire and Vermont.

*Agricultural Statistics, 1940, U. S. D. A.

The Timber Salvage Administration has disposed of most of the timber that was salvaged from the woodlands of New England. Of this amount, 425 million bd. ft. has been sold to the Eastern Pines Sales Corporation. By September 30, 1941, 95,273,032 bd. ft. had been delivered to the Eastern Pine Sales Corporation. Since much of this lumber is yet to go into the channels of trade it should have a healthy influence in stabilizing the pine market.

Besides the deliveries to the Eastern Pines Sales Corporation, an additional sale of 12,261,000 bd. ft. of softwood has been made. Hardwood sold up to September 30, 1940 was 22,911,000 bd. ft.; 44.-936,000 bd. ft. of logs in the ponds were sold besides 105,218,000 bd. ft. of round-edge lumber. All of the pulpwood, 57,193 cords, has been sold and will be delivered prior to January 1, 1942.

The prices quoted in the following tables for forest products were obtained from woodland owners and mill operators from different points in the state during the month of September, 1941. In the present changing market, prices often change materially within a few weeks time. Prices quoted should be used only as a guide.

Table 6. White Pine Price Per M.

Town	Stumpage	Logs Delivered at Mill	Round Edge	Square Edge
Alstead	$3.00-$5.00	$12.00-$14.00	$20.00	$25.00-$30.00
Auburn	3.00- 6.00	.....	.....	13.00- 15.00
Berlin	4.00- 6.00	13.00- 15.00	.....	.....
Bridgewater	3.00- 5.00	12..00- 14.00	18.00- 20.00	.....
Bristol	.....	.....	.....	20.00
Colebrook	4.00- 6.00	14.00- 16.00	.....	17.00- 49.00
Danbury	2.00- 3.00	.....	.....	.....
Danville	5.00- 6.00	.....	18.50- 20.50	30.00- 32.00
Fitzwilliam Depot	4.50	16.00	18.00	30.00
Gilmanton Iron Works	2.00- 5.00	12..00- 14.00	17.00- 18.00	25.00- 26.00
Gilsum	5.00	.....	.....	.....
Greenland	3.00- 5.00	.....	.....	.....
Groveton	4.00- 6.00	13.00- 16.00	23.00- 25.00	28.00- 30.00
Hillsboro	3.00- 4.00	12..00- 14.00	.....	20.00
Hollis	.....	.....	.....	25.00- 30.00
Laconia	.....	12..00- 14.00	.....	.....
Langdon	2.00- 4.00	.....	18.00- 21.00	25.00- 29.00
Lebanon	3.00- 5.00	11.00- 13.00	19.00	19.00- 25.00
Lincoln	.....	12.00- 16.00	.....	25.00- 30.00
Lisbon	3.00- 5.00	12.00- 15.00	.....	20.00- 23.00
Londonderry	5.00	12.00	.....	30.00- 35.00
Loudon	4.00- 5.00	9.00- 10.00	18.00- 20.00	23.00- 25.00
Marlow	2.00- 5.00	12.00- 16.00	20.00- 23.00	30.00- 36.00
Meredith	3.00- 3.50	10.00	.....	.....
Newington	4.00- 5.00	8.00	16.00- 18.00	20.00- 22.00
New Ipswich	2.00- 3.00	10.00	.....	20.00- 25.00
Newport	4.00	15.00	.....	.....
Piermont	3.00- 5.00	10.00- 11.00	20.00	23.00- 25.00
Rollinsford	4.00- 6.00	10.00- 15.00	.....	25.00- 27.00
Sullivan	4.00	10.00- 12.00	15.00- 20.00	25.00- 30.00
Weare	3.00- 4.00	10.00- 12.00	16.00	25.00

Red Pine, Price Per M.

Town	Stumpage	Logs Delivered at Mill	Red Pine Poles
Berlin	$ 2.00-$ 4.00	.....	.....
Bridgewater	12.00- 15.00	.....	.....
Langdon	2.00- 4.00	.....	.....
New Hampton	.....	$12.00-$14.00 on Skids	.....
Piermont	3.00- 5.00	10.00- 12.00	$17.00-$20.00
Weare	10.00 for poles	.....	.....

Hemlock, Price Per M

Town	Stumpage	Logs Delivered at Mill
Alstead	$3.00-$5.00	$13.00-$15.00
Berlin	2.00- 4.00	.....
Colebrook	2.00- 4.00	12.00- 14.00
Danville	3.00- 4.00	.....
Fitzwilliam Depot	4.50	16.00
Gilmanton Iron Works	2.00- 4.00	10.00- 12.00
Gilsum	4.00	.....
Hillsboro	3.00- 5.00	12.00- 15.00
Laconia	2.00- 3.00	15.00- 16.00
Lebanon	3.00	10.00- 12.00
Lincoln	2.00- 3.00	12.00- 15.00
Lisbon	3.00	14.00
Loudon	4.00- 5.00	9.00- 10.00
Marlow	2.00- 3.00	11.00- 14.00
New Ipswich	1.00	.....
Newport	.....	15.00
Piermont	2.00- 4.00	10.00- 11.00
Rollinsford	3.50- 4.00	10.00- 12.00
Sullivan	3.00- 4.00	8.00- 9.00
Weare	3.00- 4.00	.....

Spruce, Price Per M.

Town	Stumpage	Logs Delivered at Mill	Spruce Boards Sq. Edge, Log Run
Berlin	$5.00-$7.00	.....	.....
Bridgewater	.....	.....	$22.00-$24.00
Colebrook	5.00- 6.00	$15.00-$17.00	32.00- 35.00
Columbia	4.00- 8.00	16.00- 20.00	24.00- 32.00
Danbury	4.00- 5.00	.....	.....
Fitzwilliam Depot	.....	.....	30.00
Gilmanton Iron Works	2.00- 4.00	10.00- 12.00	25.00- 36.00
Groveton	4.00- 6.00	18.00- 20.00	25.00- 30.00
Laconia	.....	18.00	.....
Langdon	2.00- 5.00	16.00- 17.00	30.00- 35.00
Lebanon	4.00- 6.00	14.00- 16.00	25.00- 28.00
Lincoln	2.00 -3.00	12.00- 15.00	28.00- 32.00
Lisbon	8.00	18.00- 20.00	26.00- 32.00
Loudon	4.00- 5.00	.....	.....
Marlow	2.00- 5.00	12.00- 16.00	30.00- 35.00
New Ipswich	3.00	8.00- 12.00	20.00- 28.00
Newport	.....	15.00	.....
Piermont	4.00- 6.00	14.00- 18.00	22.00- 25.00
Rollinsford	5.00- 6.00	.....	.....
Sullivan	4.00- 5.00	11.00- 12.00	30.00- 35.00

Rock Maple for Lumber or Other Uses, Price Per M.

Town	Stumpage	Logs Delivered at Mill	Uses
Bridgewater	.....	$25.00	Lumber
Colebrook	$4.00-$5.00	25.00- 28.00	Saw Lumber-Veneer
Danbury	5.00	.....	.....
Hillsboro	5.00- 8.00	14.00- 18.00	Lumber
Laconia	.....	24.00- 25.00	Lumber
Lebanon	4.00- 5.00	.....	Heelplank, Bobbins
Lincoln	3.50- 5.00	23.00- 25.00	Lumber
Lisbon	.....	20.00- 22.00	Lumber
Marlow	2.00- 6.00	13.00- 16.00	Round Edge Lumber
North Stratford	4.00- 5.00	25.00- 28.00	Saw Logs, Veneer
Walpole	3.00- 6.00	18.00- 20.00	.....

White Birch for Lumber or Other Uses, Price per M.

Town	Stumpage	Logs Delivered at Mill	Uses
Bridgewater	.....	$20.00	.....
Gilsum	$4.00-$5.00	.....	.....
Hillsboro	4.00- 5.00	12.00- 14.00	.....
Laconia	4.00- 5.00	20.00	.....
Lebanon	3.00- 5.00	14.00- 16.00	Turning Stock
Lincoln	2.00- 3.00	16.00- 18.00	.....
Lisbon	.....	16.00- 18.00	.....
Langdon	2.00- 5.00	.....	.....
Marlow	2.00- 4.00	13.00- 16.00	R. E. Lumber
Newport	.....	18.00	.....
Sullivan	12.00-14.00	.....	Chair Stock
Weare	8.00-10.00	20.00- 22.00	.....

Yellow Birch for Lumber or Other Uses, Price per M.

Town	Stumpage	Logs Delivered at Mill	Uses
Gilsum	$4.00-$5.00	.....	.....
Hillsboro	3.00- 6.00	$12.00-$14.00	Lumber
Laconia	4.00	20.00	.....
Langdon	2.00- 5.00	.....	Lumber
Lebanon	4.00- 6.00	15.00- 20.00	Lumber and Ties
Lincoln	2.50- 4.00	20.00- 23.00	Lumber
Lisbon	.....	18.00- 20.00	.....
Marlow	2.00- 4.00	13.00- 16.00	R. E. Lumber
North Stratford	5.00- 8.00	24.00- 40.00	Lumber
Walpole	.....	15.00- 18.00	.....

***Red Oak for Lumber or Other Uses, Prices per M.**

Town	Stumpage	Logs Delivered at Mill	Uses
Fitzwilliam Depot	$4.50	$15.00	.....
Hillsboro	2.00- 4.00	12.00- 15.00	Ties, Highway posts
Langdon	2.00- 4.00	.....	.....
Lincoln	.....	17.00- 20.00	.....
Marlow	2.00- 4.00	11.00- 14.00	R. E. Lumber
Walpole	.....	12.00- 16.00	.....
Weare	.....	20.00- 25.00	.....

*Sound, large, well-formed Red Oak in demand on Maine coast for shipbuilding at much better prices than quoted.

White Ash for Lumber or Other Uses, Price per M.

Town	Stumpage	Logs Delivered at Mill
Claremont	.....	$30.00-$35.00
Hillsboro	$ 2.00-$ 4.00	12.00- 15.00
Langdon	2.00- 6.00	.....
Marlow	2.00- 6.00	15.00- 18.00
Piermont	7.00- 20.00	20.00- 35.00
Weare	10.00- 12.00	20.00- 25.00

Elm, Basswood and Beech Delivered at Mill, Price per M.

Town	Elm	Basswood	Beech
	Logs delivered	Logs delivered	Logs delivered
Danbury	$10.00-$15.00	.....	.....
Hillsboro	.....	$12.00-$15.00	.....
Laconia	.....	.....	$18.00
Lebanon	.....	16.00- 18.00	.....
Lincoln	.....	16.00- 18.00	15.00- 16.00
Lisbon	.....	16.00	15.00
Marlow	.....	.....	12.00- 13.00
Newport, Vt.	.....	40.00	.....
Piermont	.....	16.00- 25.00	14.00
Walpole	.....	12.00- 20.00	12.00
Weare	.....	10.00	.....

Bolts for Square Stock Delivered

Town	White Birch	Rock Maple
	Cord	Cord
Bradford	$8.00-$10.00	$ 8.00-$10.00
Colebrook	8.50- 9.00	.....
Fryeburg, Me.	16.00	.....
Lincoln	.....	19.00- 21.00
Ossipee	12.00	.....
Piermont	10.00- 14.00	.....
St. Johnsbury, Vt.	.....	5.00

Fence Posts Delivered

Town	Price	Kind	Specifications
Dublin	$.32-.38 each	Red oak	Peeled 6 to 9 inches top
Marlow	.32-.38 each	Red oak	Peeled 6 to 9 inches top
Richmond	.32-.38 each	Red oak	Peeled 6 to 9 inches top
Sullivan	.10-.15 each	Hardwood	6 feet long

Piling, Delivered

Town	Price	Kind	Specifications
Danbury	$.15 per linear ft.	Hemlock	.....
Marlow (on truck Skidway)	.06-.12 per linear foot	Spruce	10 to 12 inch butts 6 to 8 inch tips 12 ft. to 60 ft. long

Christmas Trees

Town	Price per Bundle	Kind
Colebrook	$.70-$1.25 at Car	Balsam Fir-Spruce
Sullivan	.10 to .15 per tree in pasture	Spruce

Spruce and Fir for Pulpwood, Price per Cord*

Town	Stumpage	Rough	Peeled
Berlin	$2.00-$4.00 (50% Spruce)	$9.00-$10.00 at Mill 8.50- 9.50 Side River	$12.00-$13.00 at Mill
Errol	.....	9.00- 10.25 Side River Errol Woods Run	12.50 Side River Errol Woods Run
Groveton	1.50- 3.00 (60% Spruce)	9.00- 10.50	11.50- 12.50
Lincoln	1.50- 3.00 (80% Spruce)	9.00- 10.00 (90% Spruce) at mill	11.00- 13.00 at Mill
Piermont	1.00- 2.00 (90% Spruce)	.....	.....

Hardwood for Pulpwood, Price per Cord

Town	Stumpage	Rough	Peeled
Berlin	$ .50-$2.00	$8.00-$10.00 (50% Yellow Birch) at Mill	$9.00-$10.50
Colebrook	1.00- 1.50	.....	.....
Hillsboro	.50- 1.00	5.70 at the Car	7.88 at Car

Poplar Pulp for Excelsior, Price per Cord

Town	Stumpage	Peeled
Berlin	$1.00-2.00	$7.00-$8.00 at Car
Danbury	.....	8.00 at Car
Groveton	1.00- 2.00	8.00 at Car 5.50- 7.00 Side Road
Hillsboro	1.00- 1.50	5.00- 6.00 Side Road
Lebanon	.....	10.00-11.50 at Mill
Merrimack	.....	8.00-11.00 at Mill
Wolfeboro	1.00- 2.00	9.00-11.00 at Mill

Peeled White Pine for Excelsior, Price per Cord

Town	Delivered
Merrimack	$6.00-$7.00 at Mill

*Pulpwood markets are active, price has advanced at many points.

Table 7. Hardwood Cordwood Schedule

Town	Stumpage	Cost of cutting and piling 4-ft. hardwood	4-foot hardwood delivered locally	Stovewood delivered locally	Cost of sawing 4-ft. wood into stovewood with power saw	Cost of trucking cordwood		
						4-foot wood	Stove-wood	Up to miles
Andover	$1.00	$2.50-$3.00	$7.00-$8.00	$8.00-$9.00	$1.00-$1.25	.....	....	...
Auburn	.....	2.00	6.00	.....	.....	$1.50-$2.00	....	10
Brookfield	1.00- 3.00	2.00- 2.50	8.00- 9.00	9.00-10.00	1.00- 1.25	.....	....	...
Columbia	1.00- 2.00	3.00- 4.00	7.00	12.00	1.00- 1.50	.....	....	...
Danville	.....	2.50- 2.75	7.50- 8.50	9.00-10.00	1.25- 1.50	1.50	$1.50	6
Dunbarton	1.00- 1.50	2.50- 3.00	6.00- 8.00	8.00-10.00	1.00- 1.50	.....	....	...
Franklin	1.00- 2.50	2.50	8.00-10.00	12.00-14.00	2.50	.....	....	...
Gilsum	.....	3.00- 3.50	8.00	9.00-10.00	1.00- 1.25	1.00	1.00	2
Greenland	.....	3.00	10.00-12.00	12.00-14.00	2.00	.....	....	...
Henniker	.50- 1.00	3.00	6.00	7.00	1.00- 1.25	.....	....	...
Hillsboro	.....	2.75- 3.00	5.50- 6.50	6.50- 7.50	1.00	5.50- 6.50	5.00	100
Jackson	1.00- 1.50	2.50	6.00- 7.00	10.00	.75	.....	....	...
Laconia	1.00- 1.25	3.00	8.00	9.00-10.00	1.00	.....	....	...
Lempster	1.00- 1.50	2.50	6.00	8.00	1.00	.....	....	...
Lincoln	.....	2.75- 3.00	6.00- 7.00	7.00- 8.00	.50- .75	1.00- 1.50	....	10
Londonderry	.....	2.50- 2.75	6.00- 7.00	.....	1.25	.....	....	...
Loudon	.75- 1.00	2.50- 3.00	8.00- 9.00	10.00-12.00	1.00	.....	....	...
Madison	1.00- 2.00	2.00- 3.00	7.00- 8.00	8.50-10.00	1.00- 1.50	.....	....	...
Marlow	.....	3.50- 5.50	7.00- 9.00	.....	1.00- 1.50	2.00- 3.00	....	18
Newington	.....	2.00- 3.00	6.00- 7.00	10.00-12.00	1.00- 2.00	.....	....	...
New Ipswich	.....	2.50- 3.00	6.00	8.00	1.00	.....	....	...
New London	1.00	.....	7.00- 8.00	11.00-12.00	1.50	.....	....	...
Newport	.50- 2.00	2.50- 3.00	6.00- 8.00	7.00- 9.00	1.25	.....	....	...
Piermont	.....	5.00	6.00	7.00-10.00	.75- 1.00	.....	....	...
Sandwich	.50- 1.00	2.50- 3.00	5.00- 6.00	7.00-10.00	.75- 1.25	.....	....	...
Sullivan	.....	3.00- 3.50	6.00- 8.00	7.00-10.00	1.00	.....	....	...
Tamworth	1.00- 2.00	2.25- 3.00	5.00- 8.00	8.00-11.00	.75- 1.15	.....	....	...
Weare	.....	2.50	7.00	.....	1.25	2.75	2.00	20

Table 8. Trucking Costs

Town	Trucking Logs, per M.				Trucking Pulpwood, per Cord			
	Hard-wood	Miles	Soft-wood	Miles	Hard-wood	Miles	Soft-wood	Miles
Auburn	.....	.....	.....	.....	.....	..	$1.50-2.25	15
Berlin	.....	.....	.....	.....	$2-$2.50	25	1- 1.50	10
Bridge-water	$4.50-5.00	50	.....	.....	.....	..	.....	..
Columbia	.....	.....	.....	.....	.....	..	1.75-2.20	30 ..
Gilsum	3.00	6-8	$3.00	6-8	.....	..	.....	..
Conn. Valley	3- 7	30	2.50-5.00	30	2- 3	30	1.50-	30
Hillsboro	4.00	30	3.50	30	2.50	25	2.50	40
Lebanon	3- 5	12	2- 4	11	.....	..	.....	..
Lincoln	4.50 6.50	25-30	4- 5.50	25-30	.....	..	1.50-2.00	20
Marlow	2- 3.50	10	2- 3	10	.....	..	.....	..
Rollins-ford	.....	.....	3- 3.50	15	.....	..	.....	..
Weare	3- 4	10	2.50-2.75	10	.....	..	.....	..

Table 9. Making Logs, Pulpwood

Town	Cost to Cut, Limb, Saw, Logs per M.		Cost to Cut, Limb, Saw, Pile Rough Pulp-wood per Cord		Cost to Peel Pulpwood per Cord	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Berlin	.....	.....	$2.50-$3.25	$3-$3.50	.....	.....
Columbia	$6.00	$7.00	4- 5.50	5- 6.50	.....	.....
Conn. Valley	6-10	10-16	2.75- 3.50	2.75- 3.50	$ .75-$1.50	$1-$1.75
Danville	5- 5.50	.....	.....	.....	.....	.....
Gilsum	4	4	.....	.....	.....	.....
Hillsboro	3.50- 4	4- 5	.....	2.75- 3	.....	.....
Lebanon	4	8.50 12.50	.....	.....	.....	.....
Lincoln	9-11	11-13	3- 4	.....	1- 1.25	.....
Marlow	7.50-11	7.50-11	.....	.....	.....	.....
Weare	4	6- 8	.....	.....	.....	.....

Table 10. Cost of Operating Hardwood and Softwood Per M. from Stump to Stick

Town	Hardwood	Softwood
Auburn	.....	$12.00-$14.00
Berlin	$8.00	7.50
Bristol	.....	12.00- 14.00
Connecticut Valley	20.00- 32.00	17.00- 22.00
Danville	.....	9.50- 11.00
Fitzwilliam Depot	.....	11.00- 11.50
Lebanon	14.00- 20.00	12.00- 15.00
Marlow	16.00- 21.00	16.00- 21.00
Rollinsford	.....	9.00- 12.00
Weare	13.00- 15.00	11.00- 13.00

Table 11. Cost of Custom Sawing

Town	Hardwood	Softwood
Auburn	.....	$5.00-$6.00
Bridgewater	.....	6.00
Columbia	$6.00-$9.00	5.50- 8.00
Connecticut Valley	7.00- 9.00	6.50- 8.00
Greenland	.....	6.00
Hillsboro	.....	6.00
Hollis	.....	6.00
Lebanon	5.00- 7.00	5.00
Lincoln	6.00- 7.00	6.00- 7.00
Lisbon	6.00	5.00- 5.50
Londonderry	.....	6.00- 7.00
Marlow	5.50- 6.50	5.50- 6.50
Meredith	.....	5.00- 6.00
New Ipswich	6.00	6.00
Newport	6.00	6.00
Rollinsford	.....	3.00- 8.00
Sullivan	.....	6.00
Weare	4.00- 5.00	4.00- 5.00

FUELWOOD

During the first World War, 1917-1919, it was impossible to get enough coal into New England to meet domestic fuel requirements. The difficulty resulted from a transportation problem. As the demand upon transportation increased, the shortage of coal became more acute.

In our present situation we may go through a similar experience. Coast-wise shipping becomes more and more disrupted as boats are taken for over-sea service. The railroads are being burdened with transportation of increasing amounts of defense material. The use of oil for fuel is now as important as coal, making the problem more difficult and complicated.

If a shortage of coal and oil for fuel shipped into New England develops, people in rural areas will turn again to wood. While there are thousands of cords of good fuelwood available in our New Hampshire woodlands, there is always the problem of getting it cut, seasoned, and delivered.

Those who have burnt coal or oil for years may not understand how to use wood efficiently. It may be difficult or impossible to adjust the heating unit to burn wood. The value of wood as compared with other forms of fuel may not be appreciated. The factors of transportation, storage, price of wood, a greater number of heating plants more adaptable to the use of wood, and a better knowledge of how to use wood, make the adjustment from coal and oil to wood less difficult in the rural areas and small villages, as compared with the larger centers of population.

Comparative Value of Wood and Other Fuels

Weight for weight, coal is superior to wood as a fuel. Generally speaking, the heavier the wood the greater its value as firewood. The fuel value of a standard cord of seasoned wood has been determined for most of our native species of trees by the Forest Products Laboratory. (Table 12.)

Table 12. Relative Heat Value of Some of the Important Tree Species in New Hampshire in Terms of Short-Ton Coal Value, 2,000 Pounds

Species	Value when air dry percent	Value when green percent	Weight per Standard Cord	
			Green	Air dry
Group A-90% or over when air dry				
Hickory	90	90	5750	4450
Black Birch	90	84	5150	3850
Iron Wood	95	90	5400	4400
White Oak	92	86	5600	4250
Group B—80 to 90 percent when air dry				
White Ash	88	86	4400	3800
Beech	80	76	4800	4100
Yellow Birch	80	75	5150	3850
Sugar Maple	84	78	5050	3950
Red Oak	83	75	5650	3900
Group C—70 to 80 percent when air dry				
White Birch	70	64	4500	3550
Black Cherry	71	67	4150	3350
Red Maple	73	68	4500	3300
Tamarack	73	70	4250	3400
Group D—60 to 70 percent when air dry				
Grey Birch	68	62	....	3500
Elm	68	61	4850	3250
Hemlock	66	60	....	2200
Red Pine	68	65	3800	3150

Other species found in the woodlands, such as basswood, fire cherry, aspens, white pine, red spruce, and balsam fir may be placed in Group E.

On the basis of the analysis given, it is possible to classify the species on a comparative value with coal, as follows:

Species in Group A, one cord of seasoned wood equals 1 ton of anthracite coal.

Species in Group B, one cord of seasoned wood equals five-sixths ton of anthracite coal.

Species in Group C, one cord of seasoned wood equals three-fourths ton of anthracite coal.

Species in Group D, one cord of seasoned wood equals two-thirds ton of anthracite coal.

Species in Group E, one cord of seasoned wood equals one-half ton of anthracite coal.

Wood well seasoned contains approximately 25 per cent of water by weight. As a general rule it takes twelve months of seasoning to reduce the moisture content to 25 per cent of the weight, while in three months the moisture content will be reduced to 35 per cent of weight, and in six months to 30 per cent. In other words, seasoning takes place very rapidly for the first six months, during which time two-thirds of the water will be eliminated. The remaining third of water disappears slowly and requires six months for the process.

In a publication by the Connecticut Forest and Park Association, it is stated that one cord of Sugar maple which is equivalent to one ton of coal, has a gross fuel value in B.T.U's (British Thermal Unit, the amount of heat required to raise one pound of water through one degree Fahrenheit) of 29,700,000.

B.T.U. values for other fuel are shown based on Connecticut experience:

Domestic anthracite per ton,	25,000,000
Steam coal, per ton,	29,000,000
No. 2 domestic fuel oil per gal.	138,000
No. 5 industrial fuel oil per gal.	150,000

Stumpage Value of Fuelwood

Fuelwood is worth from two dollars to a few cents per cord, depending upon the local demand, location, accessibility, species, and quality. If fuelwood is a secondary crop and the owner is interested in cutting trees of inferior value so as to leave the better quality trees free to grow, a minimum value is often placed upon fuelwood stumpage. There still remain thousands of cords of hardwood blown over in the hurricane of 1938 that the owners, in many instances, would be glad to contribute to persons who would cut it.

Estimating Standing Cordwood

While cordwood is generally sold on the basis of measurement after it is cut and corded up, it is frequently desirable, especially in case of buying entire tracts, to estimate the amount of wood while still standing.

Table 13 shows roughly the number of trees of different diameters required to make a cord. The figures are given for red maple of good height and apply well to average cordwood growth.

Table 13. Number of Trees Needed to Make a Cord of Wood

Diameter of tree breast high	Number of trees per cord
4 inches	50
6 inches	20
8 inches	9
10 inches	6
12 inches	4
14 inches	3

A standard cord of wood contains 128 cubic feet. Not all this space is filled with wood. Irregularity in shape and size of the pieces make for a wide range in the amount of air space included in the 128 cubic feet.

Actual measurements taken by the Lakes State Forest Experiment Station show the following range in solid wood volume of a standard cord.

Table 14. Solid Wood Volume of a Standard Cord

Middle diameter of sticks, outside bark	Number of sticks	Cubic feet with bark per cord
5	93	50
6	75	59
7	61	66
8	50	70
9	42	74
10	35	77
11	30	80
12	26	82
14	20	84
15	15	86

What to Use for Fuel

The cutting of fuelwood offers unusual opportunities to improve growing timber stands. When cutting fuelwood the following points should be kept in mind.

Cut	Save
Crooked trees	Straight trees
Short bushy crowned trees	Thrifty crowned trees
Unsound or rotted trees	Sound trees
Poor timber trees	Good timber trees
Some trees where the stand is too thick.	Enough trees to form a complete stand.

On many farms, former pastures have grown up to trees that will never make timber, such as grey birch, pasture pine or aspen. This growth should be cut clean, and either the pasture reclaimed or restocked to desirable timber trees. On many woodlots in New Hampshire, soft woods are over-topped by weed trees, such as grey birch, soft maple, shrub oak, or other undesirable species. Where possible

the weed trees should be permitted to reach fuel size and then be cut, leaving the softwoods free to grow.

In young growing hardwood stands where well-formed ash, maple, birch, and oak will mature into good timber trees if the stand is properly managed, the weed hardwoods, crooked, defective and suppressed trees that are interfering with the desirable hardwood should be cut for fuel.

Thousands of cords of wood from the tops and limbs of trees felled in lumbering operations, and scattered trees of poor quality left standing rot or furnish fuel for forest fires if not converted into cordwood. Often this waste cannot be avoided, because much of the lumbering is in thinly populated areas and long hauls for cordwood are costly.

Cutting, Stacking, and Seasoning

Wood to be used during the winter should be cut the previous winter or early spring if it is to be thoroughly seasoned. Wood cut during the summer for use the following winter will season more quickly if the trees are felled and allowed to lie a few days before cutting into wood. In this way much moisture will be drawn out through the leaves.

When handling light wood and small-size trees, such as grey birch, it is often practical to cut the trees and work the long lengths up into stove wood with a saw-rig at some convenient point in the woods. After the wood has been sawed into stove lengths, it should be thrown on a wagon, sled or truck. By hauling it directly to the storage shed where it can season, the cost of handling is reduced.

The most common method of making cordwood is to cut the trees into four foot lengths and split the larger sticks. The pieces are then piled in a standard cord, which is 8 feet long, 4 feet high, and 4 feet wide. A tool known as an exploding wedge can sometimes be used advantageously in splitting cordwood. It is not expensive and is just the thing for splitting heavy body wood. The explosion is made by using black powder.

The usual practice in stacking wood is to lay the four foot lengths on two bed pieces. This does very well when the wood is to be allowed to season for six months or longer, but a more open form, such as the "log cabin" pile might be used if more rapid seasoning is desired.

An important item in rapid seasoning is the placing of the piles so that they have the maximum benefit of air movement. The ideal place is the open field, preferably on a knoll or hill-top.

The best results in seasoning will be obtained if the wood is protected from rain by a covering. Birch, especially, should be placed under cover fairly soon after cutting. Fairly good results can be

obtained in the open by slanting the tops of the piles so that the water will run off quickly.

The amount of cordwood that can be cut in a day depends on the kind of chopping and the experience of the chopper. An experienced man in good timber can put up a cord of hardwood in a day. At the present time, choppers get anywhere from $2.50 to $5.00 per cord, for chopping and putting up wood.

Fitting and Hauling

Wood to be used in the fireplace needs little fitting. Frequently four-foot wood cut once can be used without splitting. For use in the furnace, where the object is to have material which will hold a fire, chunks at least five inches in diameter are desirable. The size of the firebox determines the length that can be used. There are furnaces especially designed that will take four foot wood. Many furnaces designed for coal cannot take wood much over 12 inches in length. To fit coal-burning stoves, wood should not be longer than 16 inches. Some cook stoves can take only fourteen inch wood.

The sawing of four-foot wood into shorter lengths with a power saw costs approximately $1.25 a cord. By hand, from one-quarter to three-quarters of a day is required to saw a cord of four foot wood into stove wood.

Aside from using horses to take wood out to a truck road, wood is generally hauled by truck. How much can be hauled at one time depends upon the weight and space available. A cord of dry oak, for example, weighs two tons, while a cord of pine weighs a ton.

Cordwood Grades

There are no recognized grades for cordwood in New Hampshire. The Fox Research Forest* at Hillsboro, New Hampshire, requires the following standards in putting up fuelwood.

Grade I, Cordwood

Kind of Tree All maples, white, yellow and black birch, oak, ash, and horn beam are acceptable. Elm may be included only if split. No grey birch, poplar, basswood, or soft wood will be accepted.

Length of Stick Wood must be cut four feet long. It will be accepted if 4 feet 1 inch, but no wood which is cut longer than 4 feet 1 inch or shorter than 47 inches will be accepted.

Size of Stick No wood less than 4 inches in diameter may be included. Excessively rough, crooked, or knotty sticks will not be accepted.

Cutting Sticks must be cut with a saw, and the ends trimmed square. Not over 10 per cent of the sticks in any pile may show an axe undercut.

---

*Dr. Henry I. Baldwin, Director, Fox Research Forest, Hillsboro, N. H.

Splitting Sticks 4 inches to 8 inches in diameter must be split once and pieces over 8 inches more than once, so that the largest piece will not exceed 8 inches in diameter after splitting.

Soundness Rotten wood will not be accepted. The rotted part of rotten heart trees must be split off before the sticks may be included in the pile. Dead wood may be included when sound.

Piling All wood must be piled on skids so it will be at least 6 inches off the ground. Piles must be staked securely so that they will not fall over after the melting of snow. Split wood shall be piled with the bark side up. Wood shall be piled closely and in a workmanlike manner. Excessive holes or loose piling will result in deduction of scale. Piles shall be 2 inches over standard height for each 4 feet of height to allow for shrinkage in drying.

Grade II, Cordwood

Wood not suitable for Grade I must be piled separately as Grade II. All kinds of hardwood will be accepted, but no badly rotted or soggy wood may be included. Only pieces over 6 inches need be split. Ends may be chopped, and pieces down to 3 inches included.

Grade III

Split softwood, 4 feet long.

Grade II, Hardwood Cordwood for Brickyards

Species All hardwoods except poplar and basswood. Not over 10 per cent softwood allowed.

Lengths Not less than four feet nor more than five feet. All wood over four feet to be scaled as four feet. Ends may be chopped or sawed.

Size No wood may be less than 2 inches in diameter.

Splitting All wood 6 inches and over must be split. Smaller wood may be either round or split.

Soundness. Dead wood may be included, if sound. Not over 10 per cent of sticks in any one pile may show rot.

How to Use Fuelwood

Most stoves and furnaces are made to burn coal or oil. However, with some simple adjustments, except in the case of some oil burning units, it is possible to use wood fairly satisfactorily.

A coal burning stove or furnace can be converted very cheaply into a wood burner by placing a piece of sheet iron or a few fire brick over a good part of the grates. Many stove manufacturers make wood burning grates that can be substituted for the coarser grates. Another method that can be used in burning wood in a fur-

nace is to add a little nut coal to the fire at the start, allowing the layer of coal ashes to remain on the grates. Air required for combustion can pass through the ash layer which can be shaken lightly without much loss of ashes. The larger the firebox, the better the results.

A furnace designed for burning coal may be made into what is known as a "Wilson Heater", which is one of the most economical stoves for wood burning. Remove the grate bars and lay fire brick on the floor of the ash pit. Then build a wood fire on the fire brick, and keep the ash pit door tightly closed and the ventilator in the fuel door open. A wood fire in this way can be made to burn slowly. Furnaces or stoves converted into oil burners can be treated in the same manner by removing the burners.

For the average coal furnace the best form of wood is short blocks from 8 to 12 inches long, preferably hardwood, although mixed hard and soft, or even soft wood alone, can be used. Medium-size pieces, such as those found in ordinary cordwood are suitable but larger pieces keep the fire better.

The best method of firing is to keep the furnace or stove full of wood packed close with moderate draft to give the desired amount of heat. Banking the fire at night requires an extra supply of the largest blocks and special attention to closing the dampers tight. A combination of dry and green wood makes a satisfactory fire. Such a mixture is especially good in keeping a wood fire over-night. If it is impossible to obtain dry wood, a good fire can be kept by mixing pine slabs with the green wood.

The simplest way to use wood in a coal furnace, and the most effective in producing heat, is to combine the wood with coal. The method of fixing is to place the blocks of wood on the fire to about the level of the fire door. Over the top of the wood, add coal which will drop down between the blocks. A small size of coal such as nut or buckwheat is suitable, but caution should be used to avoid gas explosions by not covering the entire fire with fresh fuel at any one time. A fuel charge of this kind will produce good heat, but will not last as long as a fire box full of coal; hence more frequent attention is needed. From 25 to 50 per cent of the coal ordinarily used can be saved by using a mixture of wood and coal. Any kind of wood that will go into the fire box will burn satisfactorily when mixed with coal.

When a fire place is available, wood can be used to good advantage, affording both heat and ventilation. This supplements a furnace and often can replace it in the fall and spring.

Use of Fireplace

It is not generally realized that a wood fire can be kept burning night and day in a fireplace with very little attention and with a small consumption of wood. The secret is to keep a plentiful supply of ashes at the level of the andirons. As the wood burns, an accumulation of glowing charcoal forms in the ashes. This keeps on burning slowly and assists in igniting the fresh blocks on the andirons. A pocket may be formed in the ashes into which the hot charcoal may fall, forming a heat storage. Two or three blocks on the andirons with hot charcoal in the ashes will make an excellent fire.

To check the fire, ashes are shoveled over one or more of the blocks, covering lightly all the burning wood. This will not put the fire out, but will check the rate of burning so that the red charcoal will be found when the ashes are removed for the addition of fresh fuel. A banked fire will keep 10 or 12 hours and will send out some heat from the hot bricks all the time. A well managed fireplace will be found a great addition to the heating system in any residence.

One serious difficulty with a fireplace is that much of the heat goes up the chimney. There is a device that can be installed when building a fireplace that sends outside air through a metal chamber surrounding the fireplace where it is heated and passed out into the room.

Wood Burning Stoves

Of late years considerable research has been carried on in developing a suitable wood burning stove. Because of its high gas content, wood requires a special type of stove or furnace. Instead of allowing the combustible elements to escape up the chimney or to be deposited on the flues in the form of soot and creosote, they can be passed around a circuitous route where they will be mixed with an air current of high temperature and practically all consumed. Considerable progress has been made with this type of a stove in Europe prior to the war, and one company was making such a stove in this country up to one year ago. However, considerable research is necessary before it is perfected. A government agency is now trying out a stove it has developed, based upon the above principles.

Some of the advantages of the new type of stove may be summarized as follows:

1. Greater convenience, since the fuel magazine needs to be filled only once every 8 to 24 hours.
2. Economy—in that the stove uses less wood and gives off greater heat.
3. There is less creosote and soot, and the hazards of chimney fires are reduced.
4. Little ash accumulates.

Besides the slow combustion wood stove that is being tried out, there are several stoves and furnaces on the market that are especially designed to burn wood, and are far more efficient than the average coal stove or furnace which may be adjusted to use wood. Many of these stoves can be regulated automatically for temperature control. They have a large capacity fuel chamber, thus making it possible to hold a fire for several hours without refueling.

A sawdust burner has been developed that can be attached as a part of the regular furnace. There is a large hopper that holds the sawdust which feeds into the fire by gravity. Consequently, with thermostatic equipment, several hours of even heat can be had without attention. These units have been used quite successfully on the West Coast where there is an abundance of sawdust. There are a number of the units installed in the State of Maine. If a person can be assured of a continuing supply of cheap sawdust, such a heating unit would be practical—if the sawdust can be stored conveniently near the point where it can be used.

For information on wood burning stoves and furnaces get in touch with your county agricultural agent.

YOU KNOW THAT—

Efficient farm woodland management is but one part of a well set up farm business in which production of foods for market and of foods and other commodities for home use plays a vital part.

Other recent bulletins that may help you in planning the farm production plans for a good farm living are listed here. They are only part of the many bulletins prepared for your use by the New Hampshire Extension Service.

For a complete list, write to the Extension Service for the printed schedule of publications. Single copies are free to residents of New Hampshire.

Dairying

E. C. 208—Feeding Dairy Cows and Heifers
E. C. 209—Producing Milk of Good Quality
S. B. 291—Maintenance of Grade A Milk
S. B. 320—Pasture Top-dressing in N. H.
S. C. 55—Bovine Mastitis
E. C. 239—Dairy Production and the Defense Program in N. H.

Poultry

S. C. 46—Electric Brooding of Chicks
E. C. 153—Selection and Culling
E. C. 216—How to Build a Range Shelter
E. C. 221—Breeding for Flock Improvement
S. B. 310—Vitamin A Requirements of Chicks
S. B. 312—Protein Requirements of Chickens

Farm Living

E. C. 137—Canning Fruits and Vegetables
E. B. 57—Home Canning Guide
E. C. 162—The Home-Packed Lunch
E. C. 140—Vegetable Storage
E. C. 220—Tomatoes for Good Health
E. C. 226—A Food Supply Program
E. C. 175—Canning of Meats
E. C. 176—1,095 Meals a Year
E. C. 181—Cutting Food Costs
E. C. 185—Low-cost Meals for Health
E. C. 206—Quick-time Meals
S. B. 222—Can N. H. Produce More of What She Eats?
E. C. 234—Supper Dishes from N. H. Gardens

Miscellaneous

E. C. 147—Top-dressing Hay Lands
E. B. 45—Potato Growing in N. H.
S. C. 20—Storage of Potatoes
E. B. 55—Management of Farm Woodlands
P. B. 149—Control of Plant Lice
P. B. 178—Garden Insects and Insecticides
E. C. 240—Credit for N. H. Farmers
E. C. 241—The Milk Situation in N. H.