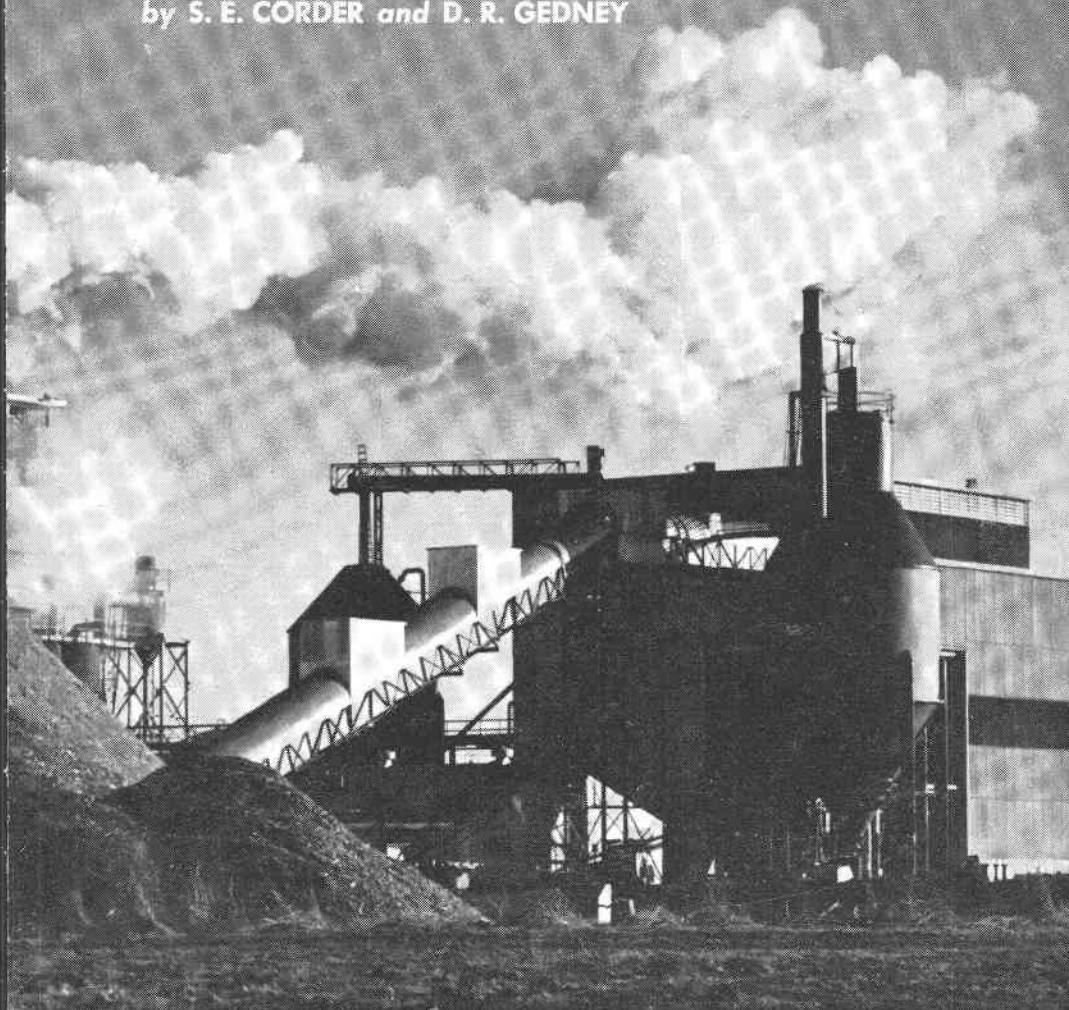


# Mill Residues in 3 Oregon Counties

by S. E. CORDER and D. R. GEDNEY



A JOINT SURVEY BY THE OREGON FOREST PRODUCTS LABORATORY and  
THE PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION

**Information Circular 8**

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# Mill Residues

## in 3 Oregon Counties

by

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### *Who Explain . . .*

**The purpose, procedure and scope, and results of a field survey  
of sawmills . . . . .**

5-8

### **Concerning—**

Lumber production

Coarse and fine residues

Forest resources

Lumber production trends

General notes

( With tables and figures )

### **For three Oregon counties:**

Linn . . . . .	11
Lincoln . . . . .	21
Jackson . . . . .	29

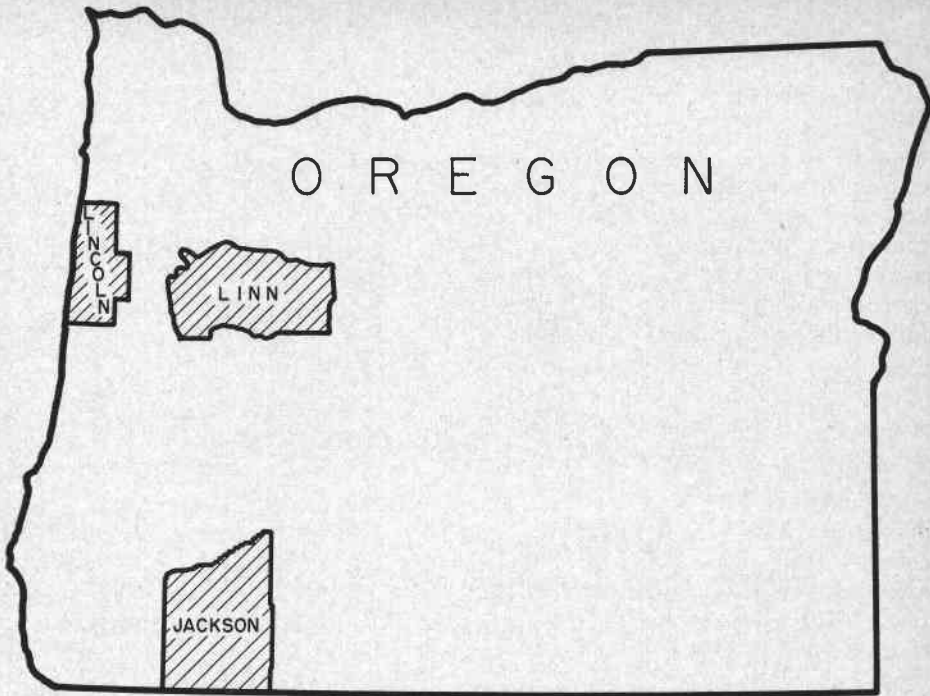


*U. S. Forest Service Photo*

**T**O MANUFACTURE LUMBER OR PLYWOOD, about half the log entering the mill is converted to finished products. Log volume in the other half is converted to either coarse residue — slabs, edgings, lumber or log trim, cores, and veneer trim; or fine residue — sawdust, shavings, and sander dust. Large volumes of mill residue are not used in some areas. They are burned for disposal.

These unused residues represent a large potential source of wood raw material that can be used to increase the output of wood-based products from Oregon without additional drain on the standing forests.

Using sawmill residues for pulp is not new in western Oregon. In the 1920's, limited use was made of residue from sawing spruce and hemlock to manufacture sulfite pulp. Since World War II ended, consumption of chips has been expanding rapidly. In 1952, pulp mills obtaining chips and other mill residue forms from western Oregon reported using 407,000 dry tons. In ~~1950~~, <sup>1955</sup> these same pulp mills reported total increases to 785,000 tons — nearly twice the 1952 use — with pulp and board manufacturers using some 860,000 dry tons. Increases occurred for both sulfite-pulp species and others. Of this total, 75,000 dry tons were utilized by fiberboard mills.



- ▶ **Oregon forests** cover 30,000,000 acres, or half the land area. The State's sawtimber volume, largest in the nation, is about 400,000,000,000 board feet—Scribner log rule.
- ▶ **Future harvest** of timber must be based on capacity of the forest land to grow trees. Unused wood residues represent a large potential source of raw material.
- ▶ **If used**, sawmill and plywood plant residues would increase the output of wood-based products without imposing additional drain on the standing forests.

## Purpose of the survey

Primary purpose of the study was to learn the quantity of mill residue potentially available for use in three counties of western Oregon. Particular emphasis was placed on coarse residue because of the immediate possibility of converting it to pulp or fiber. The coarse residue was reported in two classes: residue from species suitable for sulfite pulp, primarily hemlock,

spruce, and the true fir; and coarse residue from other species, mainly Douglas fir, with some ponderosa and sugar pine, incense cedar, and western red cedar. These latter species could be used for sulfate pulp in kraft paper or linerboard. All species could be used for fiberboard or particle board. Fine residue was reported as volumes of sawdust or shavings produced.

## Procedure and scope of the survey

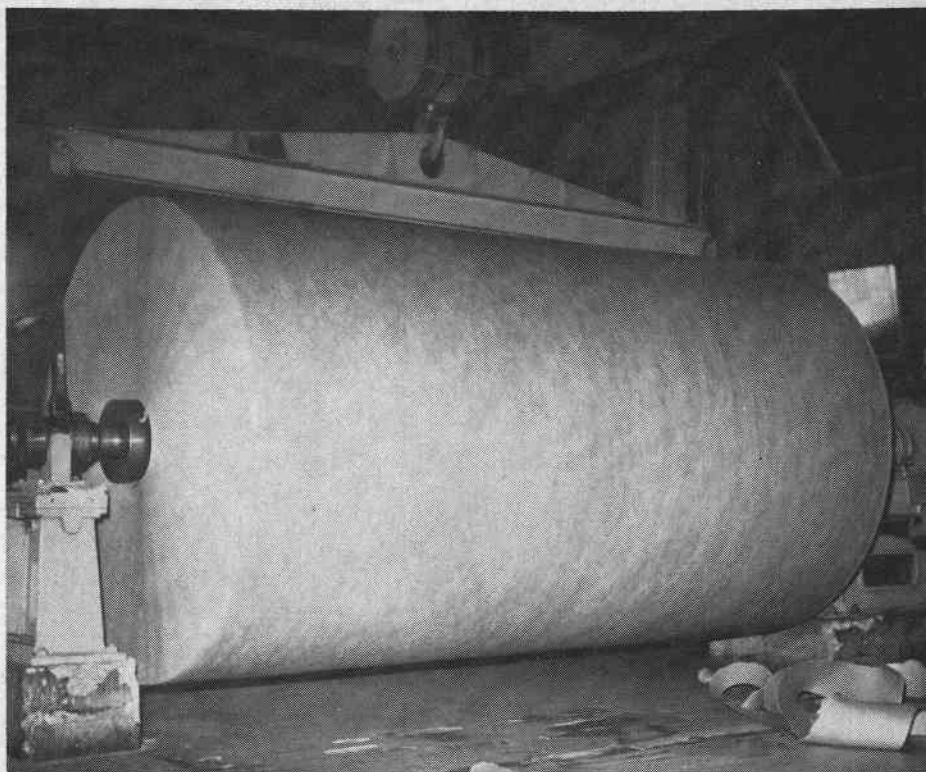
A field survey of sawmills was conducted in Linn, Lincoln, and Jackson counties in September 1955. All known sawmills with a capacity of over 40 M feet, board measure per 8-hour shift, were visited in each of the 3 counties. In addition, a list of mills cutting under 40 M fbm per shift was obtained from sawmill directories and from information obtained at the respective district fire wardens. About 15 per cent of the smaller mills were contacted for information to use in estimating data for the entire group of small mills.

Information was obtained by questionnaire at each mill visited. The information included mill capacity, annual lumber production, production by species, and current disposition of sawmill residues. The mill operator estimated the disposition of coarse and fine residues. Disposition included use of residue for pulp, fuel, remanufacturing, miscellaneous other uses, or material remaining unused and usually burned. Data on the quantity of residues used for pulp chips usually were known quite accurately by the mill operator. By applying factors relating the bonedry weight of residue developed per thousand board feet of lumber

sawn to the individual mill's annual lumber production, the total quantity of residues developed by each mill was determined. These factors are shown in Table 1 and are based on studies of Oregon sawmills by Voorhies\*, the Oregon Forest Products Laboratory, and the Pacific Northwest Forest and Range Experiment Station.

No field survey was made of the veneer and plywood plants. Instead, the location and capacities of the plants were determined from published data. Using conversion factors (Table 2) developed by the Oregon Forest Products Laboratory the volume of selected chippable residues was determined. Most of the plywood plant residues sold for pulp were developed from green veneer trim. Peeler cores could be used for pulp chips, but a different type chipper than used for veneer would be required. Since no field contacts were made, exact disposition of the residues was not known. Previous investigations indicated that only one plant in Linn County did not sell chips for pulp; in Lincoln County the one

\* Voorhies, Glenn, 1942, *An Inventory of Sawmill Waste in Oregon*, Oregon State College Bul. 17, 52 pp. Corvallis, Oregon.



# **KRAFT PAPER at Weyerhaeuser Timber Co., Springfield, Oregon.**

- Pulp production is expected to increase 65 per cent by 1975.
- Much of the increase must come from new wood supplies.
- Oregon mill residues could add 1,000,000 tons of pulp a year.

Table 1. WEIGHT OF WOOD RESIDUE DEVELOPED FROM THE SAWING OF 1 M  
BOARD FEET OF LUMBER BY SPECIES

	Coarse residue	Fine residue	
		Sawdust	Shavings
	<i>Tons (dry)</i> <i>/M fbm</i>	<i>Tons (dry)</i> <i>/M fbm</i>	<i>Tons (dry)</i> <i>/M fbm</i>
Douglas fir .....	0.449	0.286	0.210
True firs	.369	.235	.172
Sitka spruce			
Western hemlock			
Ponderosa and	.313	.264	.113
Jeffrey pine			

TABLE 2. WEIGHT OF SELECTED RESIDUE DEVELOPED FROM THE PRODUCTION OF 1M SQUARE FEET OF  $\frac{3}{8}$ -INCH PLYWOOD

Item	Residue
	<i>Tons (dry) /M sq ft</i>
Green veneer trim ....	0.134
Cores .....	.050

plywood plant sold chips; and in Jackson County none of the plants sold chips. The volumes of selected residues developed, both used and unused, are shown in Table 3.

Statistics shown for the timber resources of the three counties and west-

ern Oregon were developed by the Pacific Northwest Forest and Range Experiment Station. Data for Lincoln and Linn Counties are based on field surveys made in 1942 and 1943 adjusted to 1945. Data for Jackson County are based on a field survey made in 1947. Statistics for western Oregon are for 1952.

Information on lumber production shown in Figures 2, 4, and 6 was taken from yearly summaries prepared from 1925 to 1948 by the Bureau of the Census and the U. S. Forest Service and from 1949 to 1952 by the West Coast Lumbermen's Association. Summaries were not available for 1953 and 1954. Values shown for 1955 were obtained from mills contacted during the survey.

Table 3. WEIGHT OF SELECTED WOOD RESIDUE DEVELOPED IN 1955 IN PLYWOOD MILLS IN LINN, LINCOLN, AND JACKSON COUNTIES

Plywood plant	Annual capacity* <i>MM sq ft†</i>	Selected residue	
		Veneer trim <i>Tons (dry)</i>	Cores <i>Tons (dry)</i>
<b>Linn County</b>			
Cascade Plywood Corp. ....	150	20,000	7,500
Linn Plywood Corp. ....	60	8,000	3,000
M & M Woodworking Co. ....	65	8,700	3,200
M & M Woodworking Co. ....	75	10,000	3,700
Oregon Plywood Corp. ....	30	4,000	1,500
Western Veneer Co. ....	60	8,000	3,000
Hub City Plywood Corp. ....	36	No green end	.....
Total .....	476	58,700	21,900
<b>Lincoln County</b>			
C. D. Johnson Lbr. Corp. ....	50	6,700	2,500
<b>Jackson County</b>			
Medford Veneer & Plywood Corp. ....	40	5,300	2,000
Veneer Products Co. ....	34	4,600	1,700
Total .....	74	9,900	3,700

\* From *The Timberman*, January 1955.

† Millions of square feet on a  $\frac{3}{8}$ -inch basis.



## Results

Results for the three counties were summarized in Table 4. Mill operators did not know their total 1955 production at the time of the survey. If all the mills continued production at their given rates, however, the stated amounts would represent annual production.

Coarse wood residue was recorded as that from sulfite-pulp species and that from other species. Coarse residue was further classified as that used for pulp, all other uses, and unused. Other uses consisted mainly of use for fuel—both fuel used by the mill and residue sold for fuel. Residue sold for fuel gave the mill operators only a slight income of about \$1 per cord. If economics were favorable, the coarse residue used for fuel probably could be diverted to a higher income use. This possibility was particularly likely for hemlock, spruce, and the true firs since they were generally considered less desirable for fuel because of high moisture content.

Fine residue was listed as used or unused. Here the only significant use was fuel. A small quantity of fine material was used for agricultural purposes—mulch and bedding—but this amount was less than 1 per cent of the total residues in all 3 counties. The results from individual counties are presented separately.

Unused coarse sawmill residues developed in western Oregon represent a large potential supply of raw material. Based on factors developed during the survey, lumber production in 1955 was

about 7 billion fbm. An estimated 15 per cent of this total developed from the sawing of sulfite-pulp species—the remainder from Douglas fir and other species.

If all the coarse residue from sawing this lumber were available, the total volume developed would amount to 387,000 tons (dry) of residue from sulfite-pulp species and 2,671,000 tons (dry) from other species. At the estimated rate in 1955, 54,000 tons (dry) of residue from sulfite-pulp species and 805,000 tons (dry) from other species was being used for pulp or board manufacture. Potentially available material from coarse sawmill residues not used for pulp or board manufacture was estimated at 333,000 tons (dry) of sulfite-pulp species and 1,866,000 tons of other species. This volume of residue from sulfite-pulp species would support a pulp production of 476 tons of pulp a day. The volume of residue from other species could support an additional 2,670 tons of pulp per day. The area in 1955 of sulfite-pulp types in western Oregon was 10 per cent of the total commercial forest area and the saw-timber volume comprised 16 per cent of the total available volume. It would be reasonable to expect the production of sulfite-pulp species to stabilize at between 10 and 20 per cent. Production in any 1 year or over a limited period could vary considerably from this estimate, based on markets for lumber as well as location of the areas being logged.

**Over 3,000 tons of pulp daily could be produced from western Oregon mill residues not used for pulp or board manufacture.**



TABLE 4. ANNUAL RATE OF PRODUCTION AND DISPOSITION OF SAWMILL RESIDUES IN LINN, LINCOLN, AND JACKSON COUNTIES IN SEPTEMBER 1955

M fbm per shift  Mill capacity	Mills in county	Million fbm per year			Thousands of tons of wood residue per year, on a dry-weight basis										
		Lumber production			Coarse residue disposition						Fine residue disposition				
		Total	Sulfite-pulp species	Other species	Sulfite-pulp species			Other species							
					Pulp	Other uses	Unused	Pulp	Other uses	Unused	Sawdust		Shavings*		
											Used	Unused	Used	Unused	
<b>Linn County</b>															
over 80 .....	7	260	84	176	18.9	7.9	3.8	36.4	20.7	21.9	62	8	36	15	
40 to 80 .....	8	113	24	89	0.3	0.0	9.0	2.2	4.8	33.0	4	27	3	20	
under 40 .....	15	61	11	50	0.0	0.0	4.0	0.0	0.0	22.5	1	16	0	12	
Total .....	30	434	119	315	19.2	7.9	16.8	38.6	25.5	77.4	67	51	39	47	
<b>Lincoln County</b>															
over 80 .....	4	234	....†	.... †	....†	0.7	16.1	....†	3.5	36.7	38	26	24	23	
40 to 80 .....	8	93	22	71	0.0	0.0	8.0	0.0	1.9	30.0	5	21	1	18	
under 40 .....	36	173	63	110	0.0	0.0	23.5	0.0	0.0	49.4	0	46	0	34	
Total .....	48	500				0.7	47.6		5.4	116.1	43	93	25	75	
<b>Jackson County</b>															
over 80 .....	11	437	130	307	0.0	1.8	46.2	0.0	21.5	109.8	39	78	20	62	
40 to 80 .....	13	222	44	178	0.0	4.2	12.0	0.0	18.6	54.9	27	33	4	36	
under 40 .....	53	222	58	164	0.0	0.0	21.4	0.0	0.0	69.1	0	60	0	40	
Total .....	77	881	232	649	0.0	6.0	79.6	0.0	40.1	233.8	66	171	24	138	

\* Some mills, particularly mills cutting under 40M fbm per shift, had no planer. Shavings from lumber cut at such mills were found, not at the originating mill, but at custom planing mills or in-transit processors.

† Withheld to avoid disclosing production of individual mill.

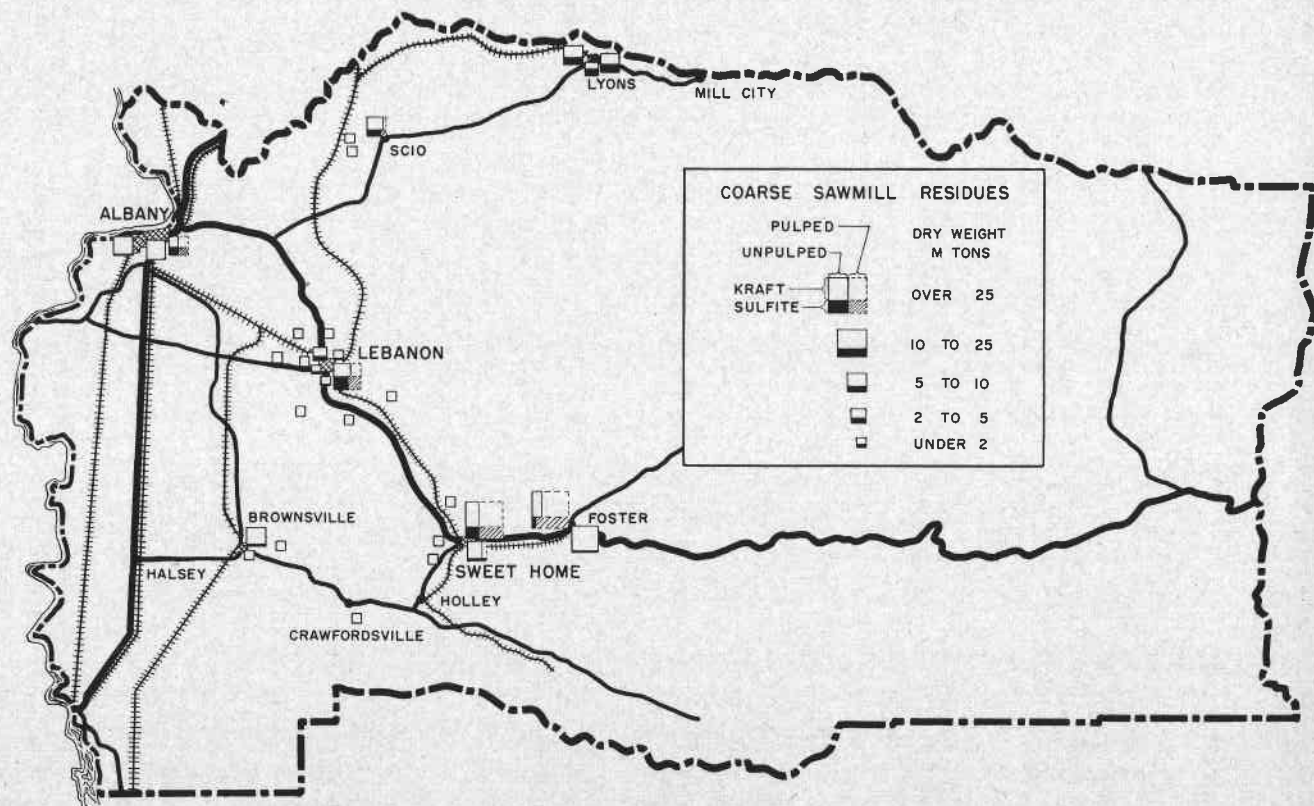


Figure 1. Location and annual production rate in 1955 of coarse sawmill residues in Linn County, Oregon.

# Linn County

## Lumber production

In Linn County there were 7 sawmills with capacities over 80 M fbm (thousands of feet, board measure) lumber per 8-hour shift, 8 mills with capacities of from 40 to 80 M fbm per shift, and 15 mills with capacities of under 40 M fbm per shift. Many of the smaller mills expressed difficulty in obtaining logs, which indicated there may be fewer small mills in the future, if present conditions prevail.

The rate of lumber production was 434 MM fbm per year. Sixty per cent of the total cut was from mills cutting more than 80 M fbm per shift, 26 per cent from mills cutting from 40 to 80 M fbm per shift, and 14 per cent from mills cutting less than 40 M fbm per shift. The species distribution showed 27 per cent of the lumber cut was from sulfite-pulp species, while 73 per cent was from other species.

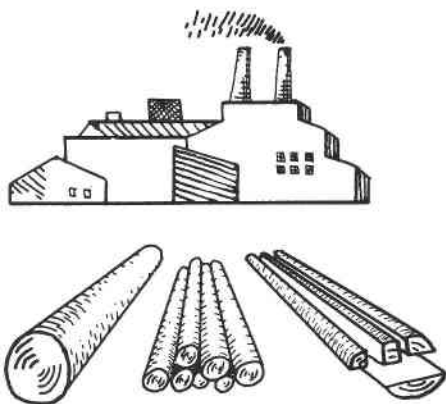
## Coarse residue

The status and location of coarse-residue production and disposition in Linn County are shown in Figures 1 and 2. Sawmills were selling 44 per cent of their coarse residue from sulfite-pulp species for pulp. This use varied with mill size; mills cutting over 80 M fbm per shift sold 62 per cent, while mills cutting under 40 M fbm sold no coarse residue for pulp. Twenty-five thousand tons per year of coarse wood residue from sulfite-pulp species were either not used or used for fuel. This quantity of residue could supply a pulp production of 35 tons of pulp per day, assuming a 350-operating-day year and a 50 per cent pulp yield).

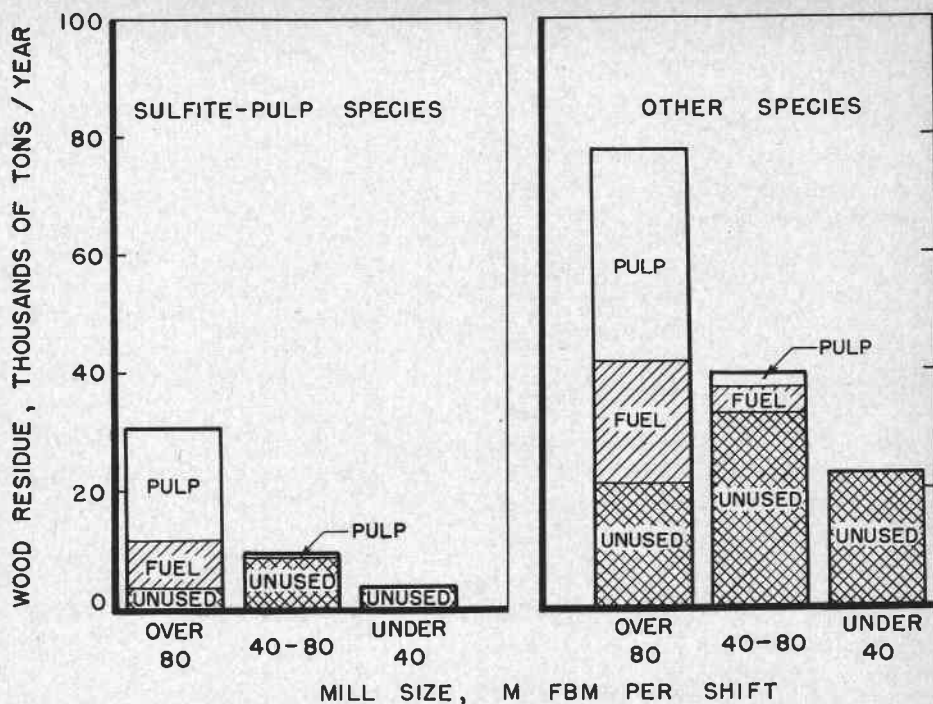
Twenty-seven per cent of the total coarse residue from other species was used for pulp. Here, again, the usage for pulp was in the larger mills. One hundred three thousand tons (dry) per year of coarse residue from other species were either not used, or used for fuel. If fully utilized, this quantity of residue could supply a pulp production of 146 tons of pulp per day (350-op-

erating-day year and 50 per cent pulp yield).

The 7 plywood plants in the county, with a combined annual capacity of 476 million square feet of  $\frac{3}{8}$ -inch plywood, when operating at rated capacity would produce about 59,000 tons (dry) of green veneer trim (Table 3). Most of this material was being sold for pulp chips.

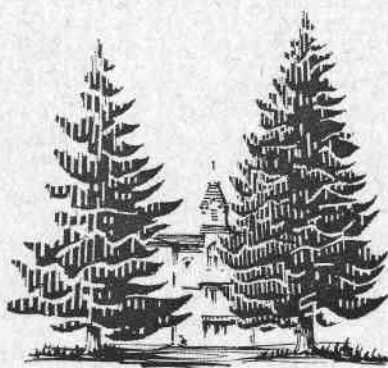


**More than half of Oregon's income is from wood products.**



**Figure 2. Disposition in 1955 of coarse sawmill residues in Linn County, Oregon, from computations on a dry-weight basis of analysis.**

Coarse sawmill residues not used for pulp in 1955 could supply 180 tons of pulp daily in Linn County.



## Fine residue

The survey indicated 118,000 tons (dry) of sawdust were produced per year. Fifty-seven per cent of the sawdust was used—mainly for fuel—while 42 per cent was not used.

Shavings amounting to 86,000 tons (dry) per year were developed, with 45 per cent used and 55 per cent not used.



**Sawdust for mulch.**

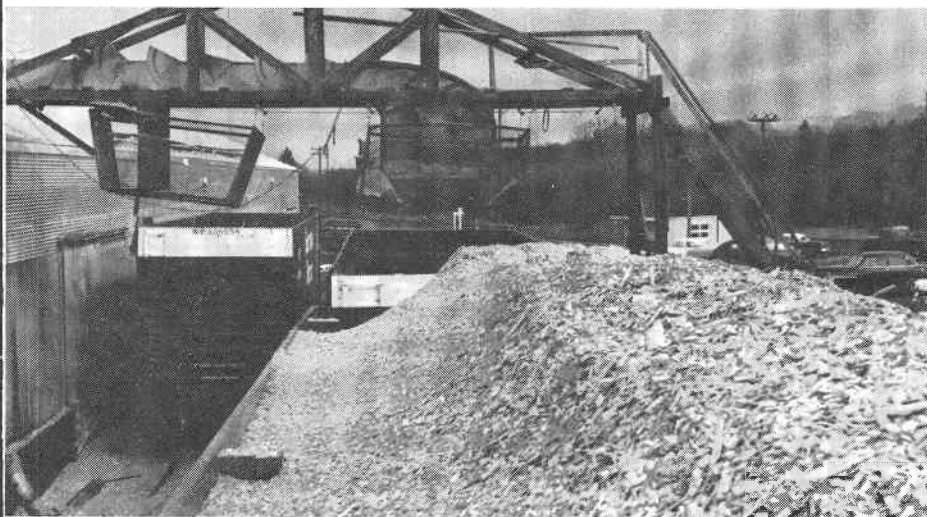
## General

About half the sawmills were cutting sulfite-pulp species separately from the other species. At most of the other mills such separation could be made if there were an incentive to do so.

Two sawmills had log-barking equipment, one mill had a barker on order, and two mill operators were considering installing barkers.

Four mills had shippers installed, one operator had a chipper ordered, and another operator was considering the purchase of a chipper.

Several factors in Linn County contributed to the relatively high proportion of coarse residue used for pulp. Within the county a market was provided by a sulfite pulp plant and a recently completed sulfate pulp mill. The nearby pulp mills on the Willamette and Columbia Rivers also provided a market for both sulfite and sulfate pulp chips. Rail transportation was available to most of the mills and truck transportation of chips was feasible to the nearby pulp plants.



**PULP CHIPS from Mary's Peak Veneer, Inc., Philomath, Oregon.**

## Forest resources

Forest resource data for Linn County are shown in the following tables:

Table 5. SAWTIMBER VOLUME OF COMMERCIAL FOREST LAND IN LINN COUNTY, 1945

Species	Sawtimber volume*					
	Total		Private		National forest	
	Volume	Distribution	Volume	Distribution	Volume	Distribution
	<i>MM fbm</i>	<i>Per cent</i>	<i>MM fbm</i>	<i>Per cent</i>	<i>MM fbm</i>	<i>Per cent</i>
Sulfite-pulp species	6,222	20	3,051	19	2,642	21
Other species .....	24,523	80	13,026	81	10,039	79
Total .....	30,745	100	16,077	100	12,681	100

\* Scribner log scale.

Table 6. AREA OF COMMERCIAL FOREST LAND IN LINN COUNTY, 1945

Ownership	Forest land		Sulfite-pulp types	
	Area	Distribution	Area	Distribution
	<i>Acres</i>	<i>Per cent</i>	<i>Acres</i>	<i>Per cent</i>
Private .....	511,000	52	23,000	4
National forest .....	382,000	39	66,000	17
Other .....	93,000	9	5,000	5
Total area .....	986,000	100	94,000	10

Generally, species suitable for making sulfite pulp grow at higher elevations in Linn County. At lower elevations, Douglas fir stands form the dominant forest cover and gradually, with increasing elevation, become interspersed with stands of hemlock and the true firs.

Ownership of forest land also generally followed an elevational distribution with private land concentrated at the lower elevations and public ownership, mainly the National forests, oc-

curing at higher elevations. Past cutting was concentrated on the lower elevations on private lands with the result that most of the cut has been of Douglas fir. As a consequence, although only 4 per cent of the private forest area was in hemlock and the true fir types, about 19 per cent of the volume of timber on private land was sulfite-pulp species in 1955. National forests had 17 per cent of their area in sulfite-pulp types and 21 per cent of the volume was in sulfite-pulp species.



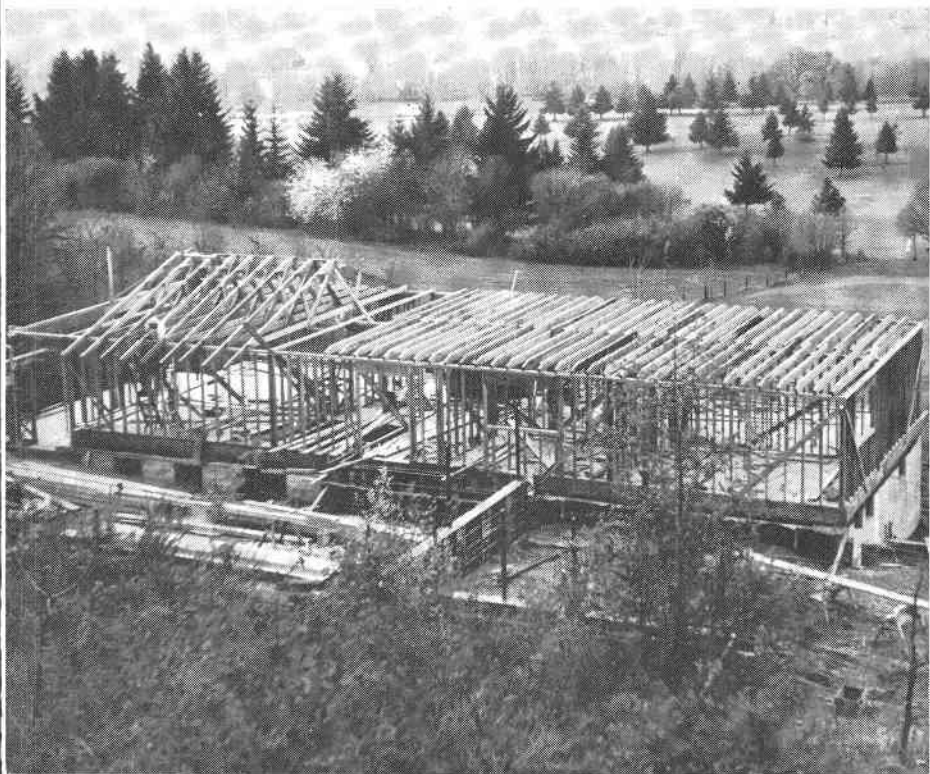
## Lumber production trends

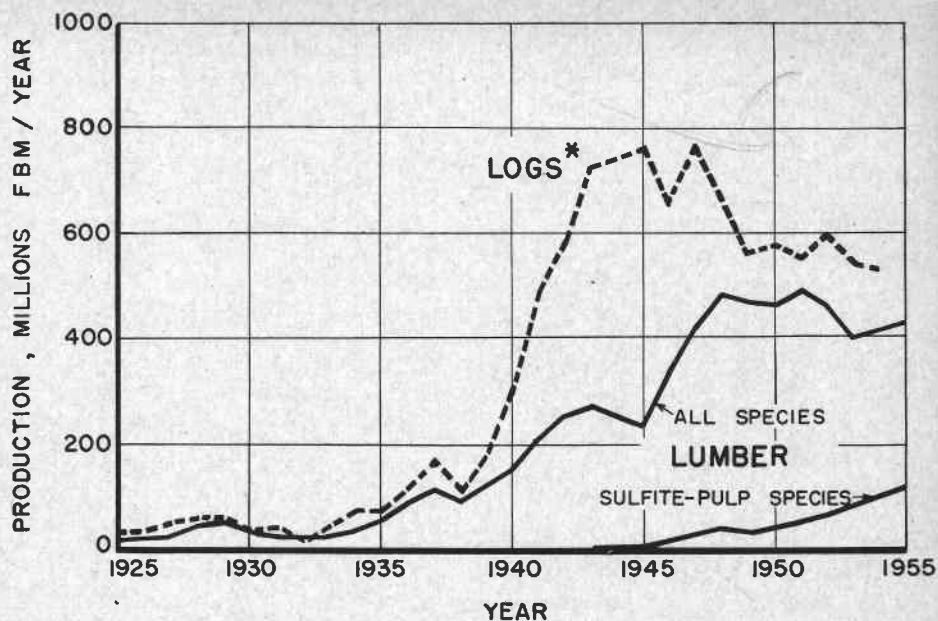
Trends in lumber production are illustrated in Figure 3. Lumber production was fairly steady from 1947 to 1955, and timber resource data indicated production might be sustained near or slightly below the level in 1955.

Lumber production from hemlock and the true firs was not of much significance before 1945, but since that year these species have become an increasing proportion of the total lumber production. Lumber cut from sulfite-pulp species was 27 per cent of the total lumber production in 1955. About 80 per cent of this cut came from logs

obtained from private forest land. In the future, more logs will be obtained from National forests as timber species on private lands become more limited and as National forest timber becomes available. The cut of sulfite-pulp species should continue to comprise from 20 to 30 per cent of the annual harvest as National forest timber becomes a greater part of the log harvest. Ultimately, as the entire county is cut over, and with a continuing market for all species, the cut will assume more nearly the proportions characteristic for the various forest types.

**NEW HOMES use 13,000,000 board feet of lumber a year.**



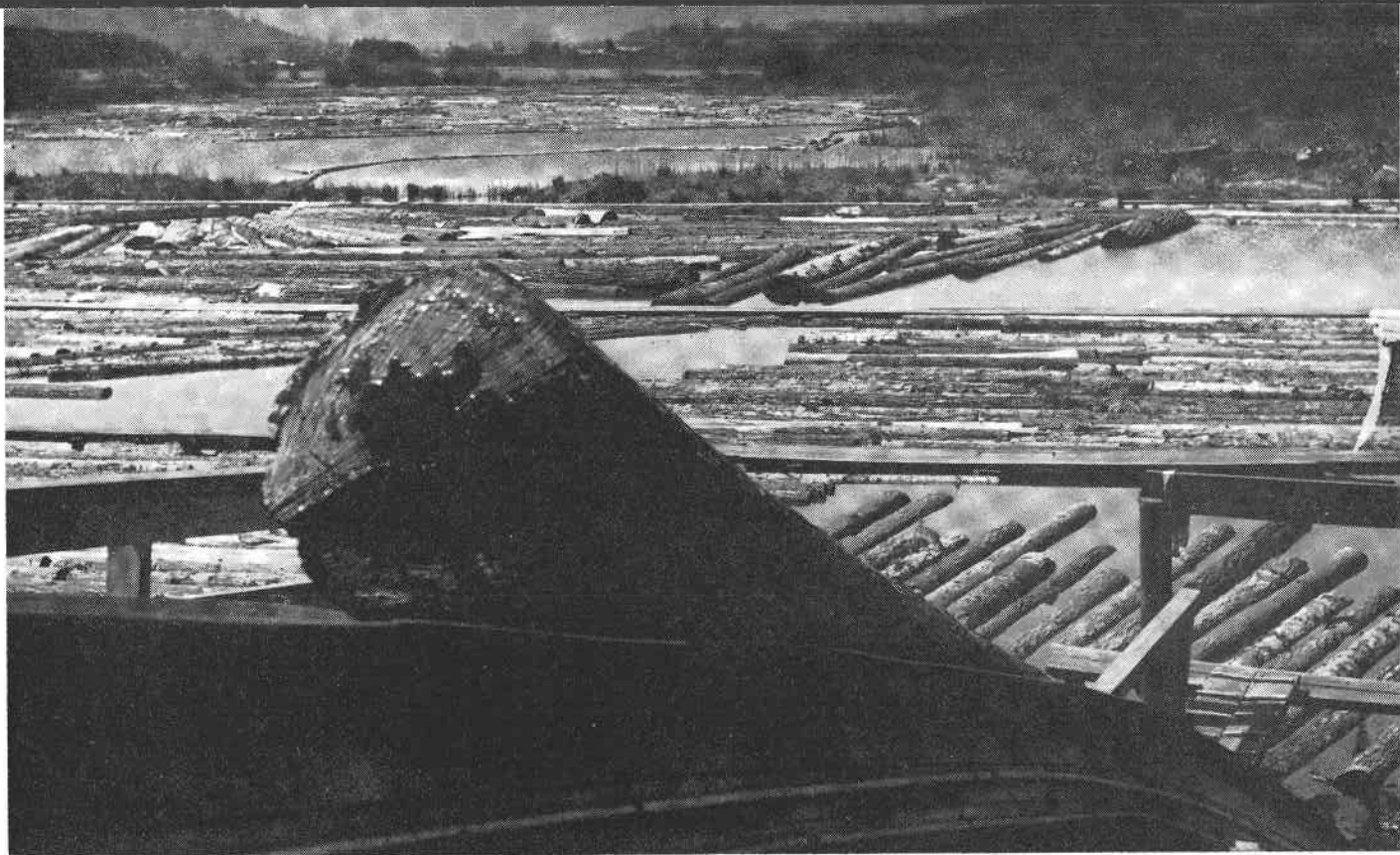


\* Scribner log rule.

**Figure 3. Lumber and log production in Linn County, Oregon.**

Production probably will be continued near the 1955 level.





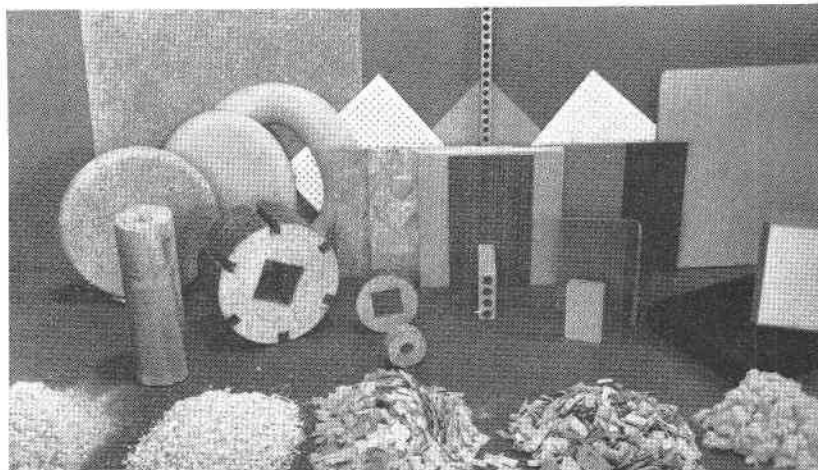
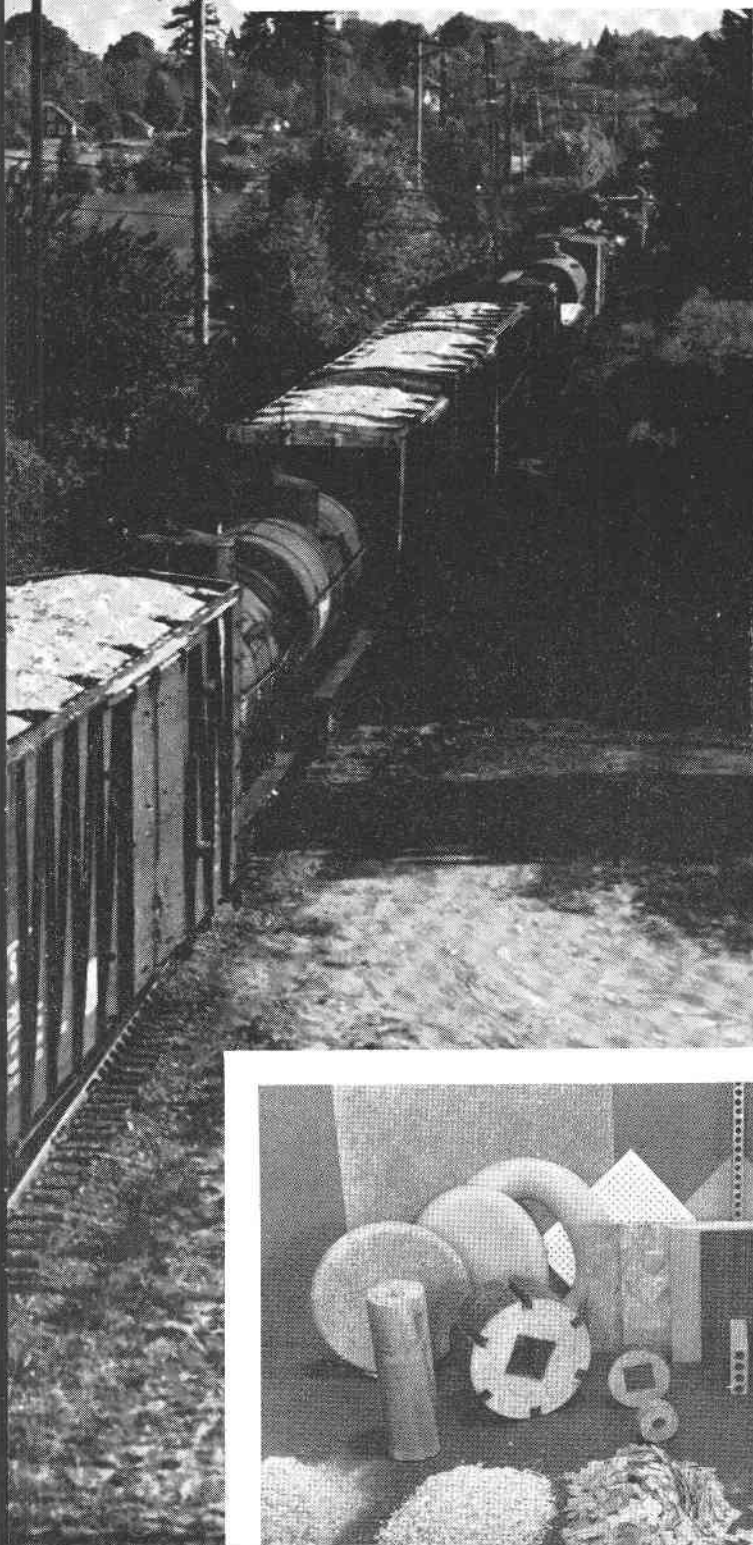
**WESTERN OREGON SAWMILLS** cut 7,000,000,000 board feet of lumber a year from logs such as these at Clemens Forest Products, Inc.

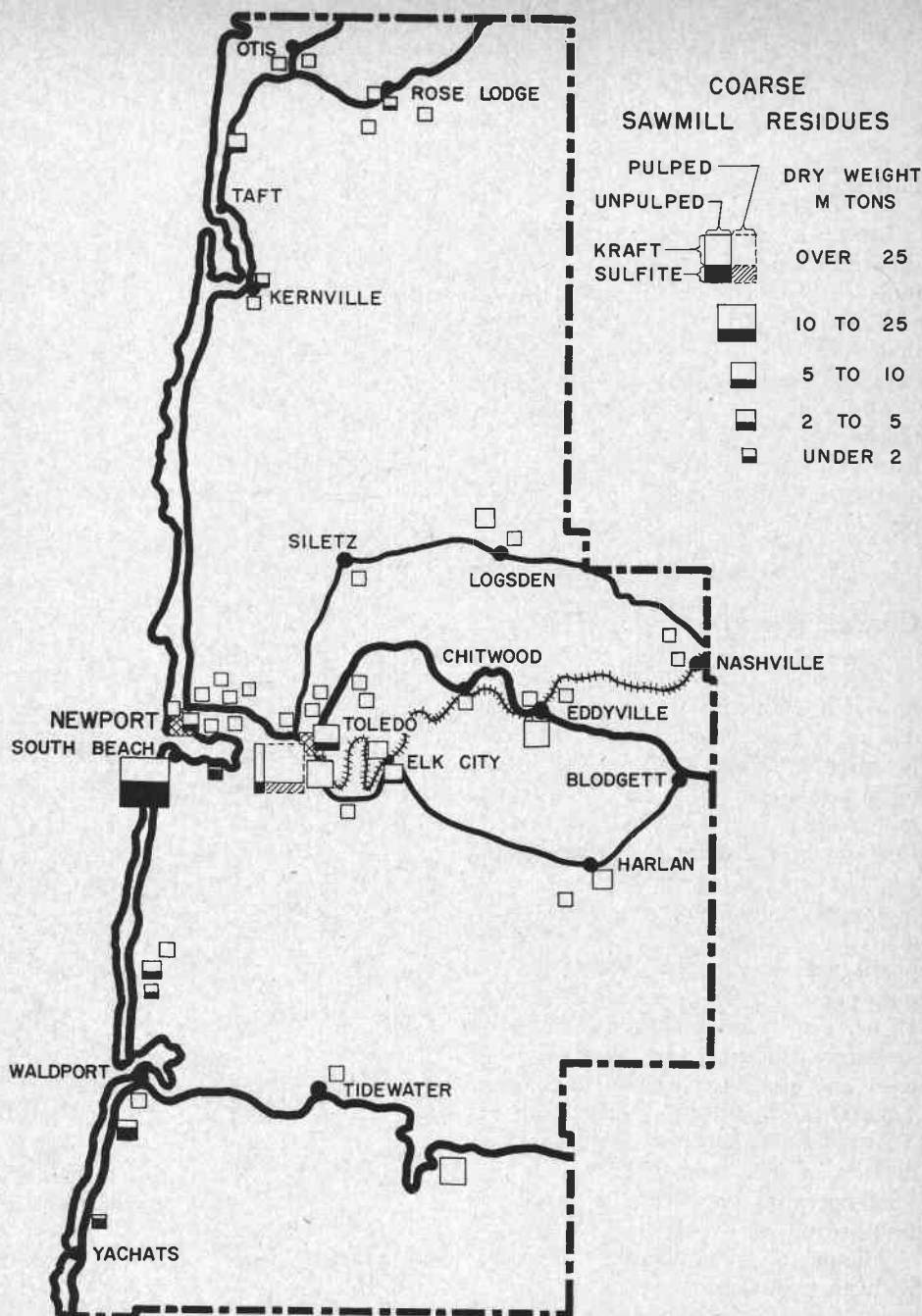




## CHIPS FROM MILL RESIDUES . . .

mean  
more  
paper  
and  
more  
board  
products





**Figure 4. Location and annual production rate in 1955 of coarse sawmill residues in Lincoln County, Oregon.**



# *Lincoln County*

## **Lumber production**

Lincoln County had 4 sawmills with capacities over 80 M fbm per shift, 8 mills of from 40 to 80 M fbm per shift, and 36 sawmills with capacities less than 40 M fbm per shift. Mills did not express difficulty in obtaining logs.

The annual rate of lumber production was 500 M fbm per year. This cut was divided into 47 per cent from the 4 mills with capacities over 80 M fbm per shift, 18 per cent from the 8 mills

with capacities from 40 to 80 M fbm per shift, and 35 per cent from the 36 mills with capacities less than 40 M fbm per shift. Seventy per cent of the lumber cut at the time of the survey was Douglas fir and 30 per cent was hemlock, spruce, and true firs. Mills in the coastal region of the county were sawing a greater proportion of spruce, hemlock, and true firs than were the mills located inland.

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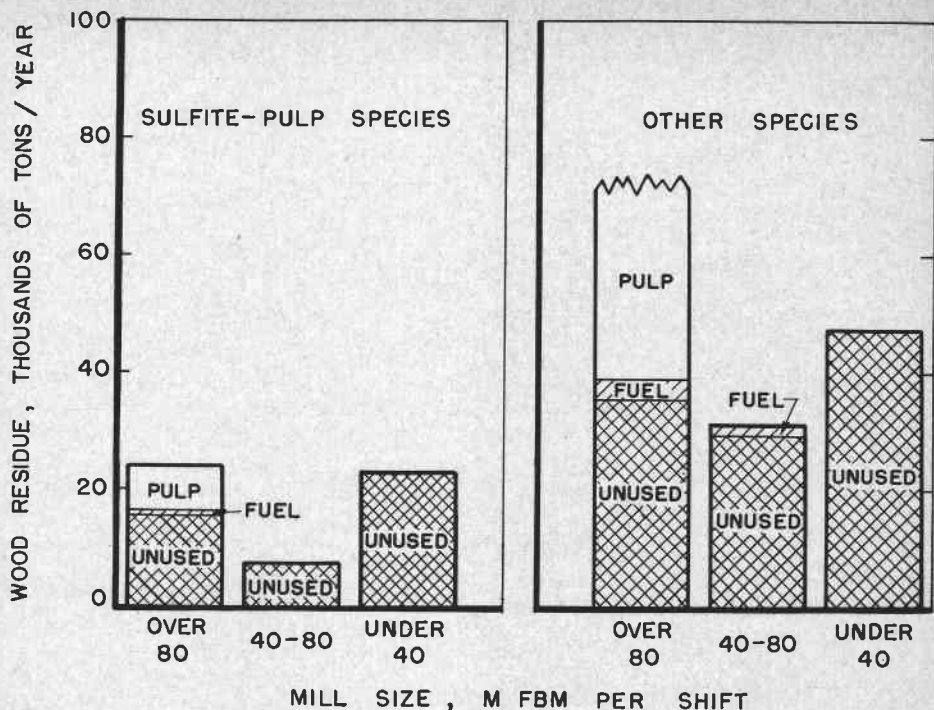
## **Coarse residue**

Production, disposition, and location of the mills producing coarse residue in Lincoln County in 1955 are illustrated in Figures 4 and 5. All material used for pulp came from one mill cutting over 80 M fbm per shift. Forty-eight thousand tons (dry) per year of coarse residue from sulfite-pulp species were not being used. This quantity of coarse residue could supply a pulp production of 69 tons of pulp per day (350-operating-day year, 50 per cent pulp yield).

Coarse residue from Douglas fir not used and used for fuel amounted to 121,000 tons (dry) of wood per year. This residue could support a pulp production of 172 tons of pulp per day (350-operating-day year; 50 per cent pulp yield).

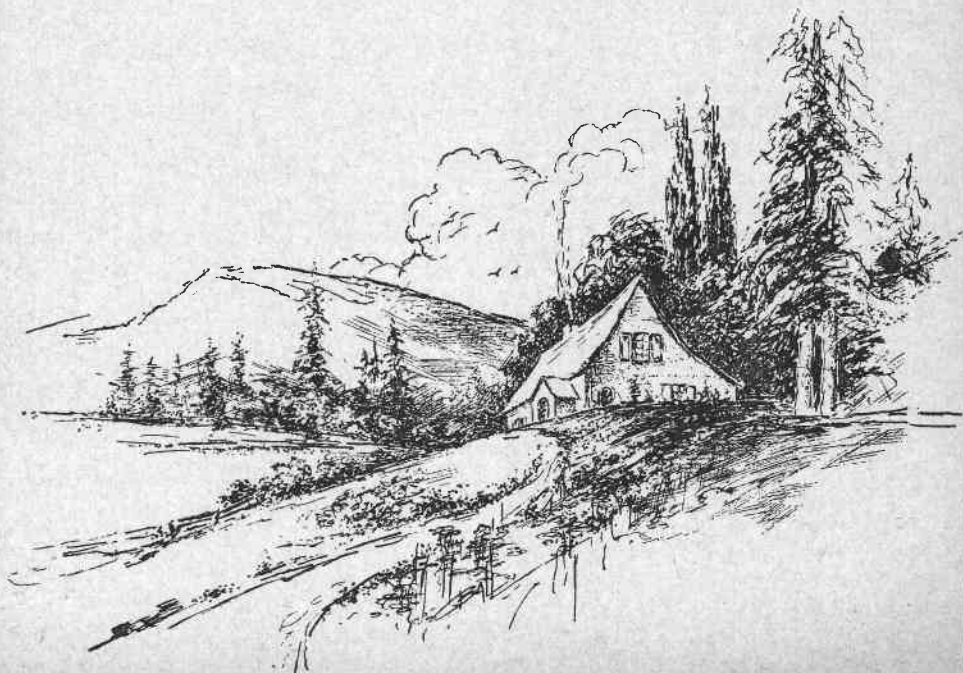
The one plywood plant in the county with an annual capacity of 50 million square feet of  $\frac{3}{8}$ -inch plywood when operating at rated capacity would produce 6,700 tons (dry) of green veneer trim a year.





**Figure 5. Disposition in 1955 of coarse sawmill residues in Lincoln County, Oregon, on a dry-weight basis.**

Coarse sawmill residues not used for pulp in 1955 could supply 240 tons of pulp daily in Lincoln County.





## Fine residue


Lincoln County mills were producing sawdust at the rate of 136,000 tons (dry) per year. Thirty-two per cent was being used while 68 per cent was not used.

Shavings were produced at the rate of 100,000 tons (dry) per year with 25 per cent used and 75 per cent unused. Shavings from mills without planers were concentrated at other mills or at custom planing mills.

## General

About 90 per cent of the mills were sawing sulfite-pulp species separately from Douglas fir. Only one mill had a log barker and chipper, but three operators were considering installation.

About two-thirds of the mills with capacities over 40 M fbm per shift and most of the smaller mills did not have rail transportation at the mill site. Water transportation, however, was available in the Yaquina Bay area.



## Forest resources

Forest resource data for Lincoln County are shown in the following tables:

Table 7. SAWTIMBER VOLUME OF COMMERCIAL FOREST LAND IN LINCOLN COUNTY, 1945

Species	Sawtimber volume*					
	Total		Private		National forest	
	Volume	Distribution	Volume	Distribution	Volume	Distribution
	<i>MM fbm</i>	<i>Per cent</i>	<i>MM fbm</i>	<i>Per cent</i>	<i>MM fbm</i>	<i>Per cent</i>
Sulfite-pulp species	2,038	15	1,425	22	613	9
Other species .....	11,491	85	5,142	78	6,349	91
Total .....	13,529	100	6,567	100	6,962	100

\* Scribner log scale.

Table 8. AREA OF COMMERCIAL FOREST LAND IN LINCOLN COUNTY, 1945

Ownership	Forest land		Sulfite-pulp types	
	Area	Distribution	Area	Distribution
	<i>Acres</i>	<i>Per cent</i>	<i>Acres</i>	<i>Per cent</i>
Private .....	292,000	50	49,000	17
Public .....	293,000	50	24,000	8
Total area .....	585,000	100	73,000	12

Private forest lands contained the great bulk of the sulfite-pulp species in Lincoln County. Almost 70 per cent of the total volume of hemlock, spruce, and the true firs was in private ownership with the remaining 30 per cent in public ownership. More than half of the volume in public ownership was on National forest lands, the remainder (in 1945) owned principally by the County, Bureau of Land Management, State, and Indian Service. Twenty-two per cent of the volume of timber on private forest land was in sulfite-pulp species while on public forest land

less than 10 per cent of the volume was in these species. Private ownership predominated along the Coast where the concentration of sulfite-pulp species was greatest. The areas of public ownership occurred further inland where Douglas fir dominated.

Ownership of forest land was divided almost equally between private and public holdings. On the private forest holdings, 17 per cent of the forest area was in sulfite pulp types while the public lands contained about half this amount. Much hemlock and spruce remained on private cut-over lands.

# Lumber production trends

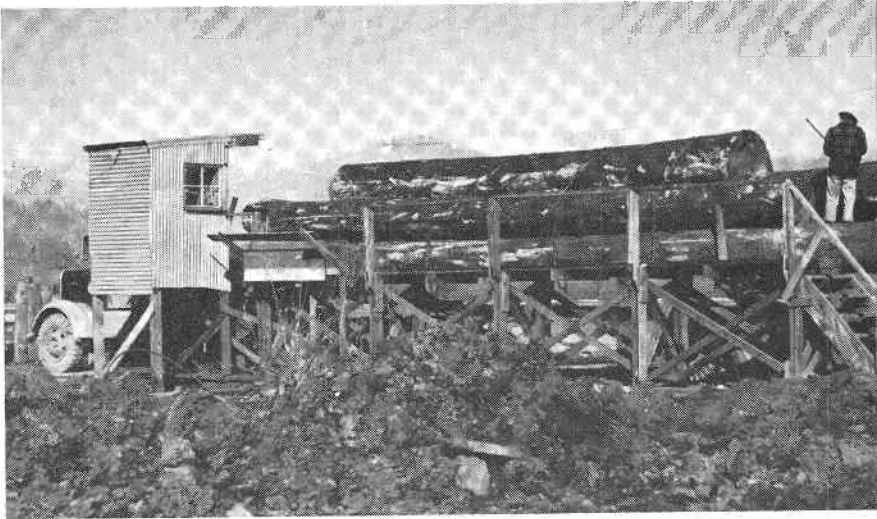
The trend of lumber production for Lincoln County is shown in Figure 6. There has been a continual increase in lumber production for the county since 1932. As the county becomes more dependent on young-growth timber, lumber production will probably decrease from the volume cut in 1955.

In Figure 6, it is shown that lumber production from sulfite-pulp species has been a significant portion of the total lumber cut. In the past, the major sulfite-pulp species cut has been Sitka spruce. With almost seven times as much hemlock in the county as spruce, it would be expected that hemlock will account for a greater proportion of the

lumber production from such trees.

The proportion at the time of the survey of lumber production from sulfite-pulp species was 30 percent. On the average, almost 90 per cent of the log harvest came from private lands. As public timber becomes ready for harvest a greater proportion of the log cut will come from public lands. When this occurs a greater volume of the cut will be Douglas fir with a corresponding percentage decrease in the sulfite-pulp species. It seemed likely, therefore, that the ratio of sulfite-pulp species should decrease from 30 per cent in 1955 to about 10 to 20 per cent of the total cut.

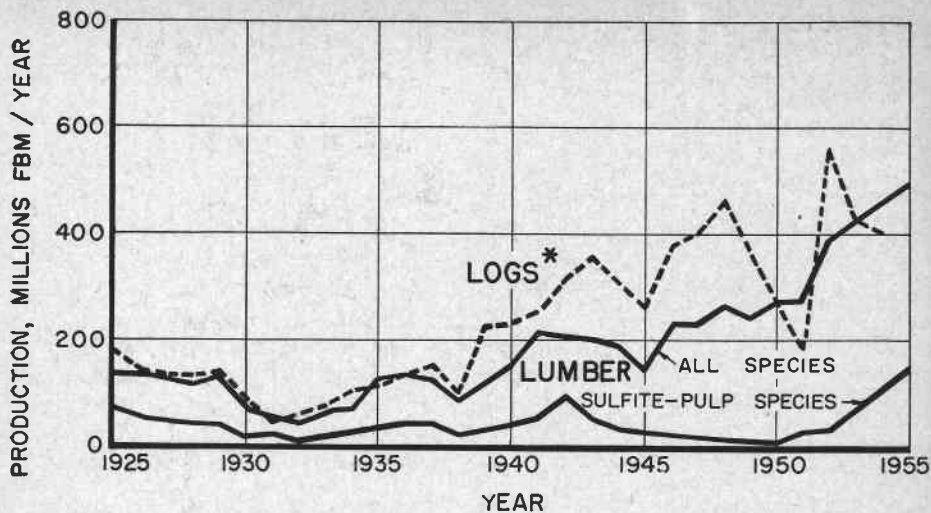
**From  
logs**



**To  
homes**







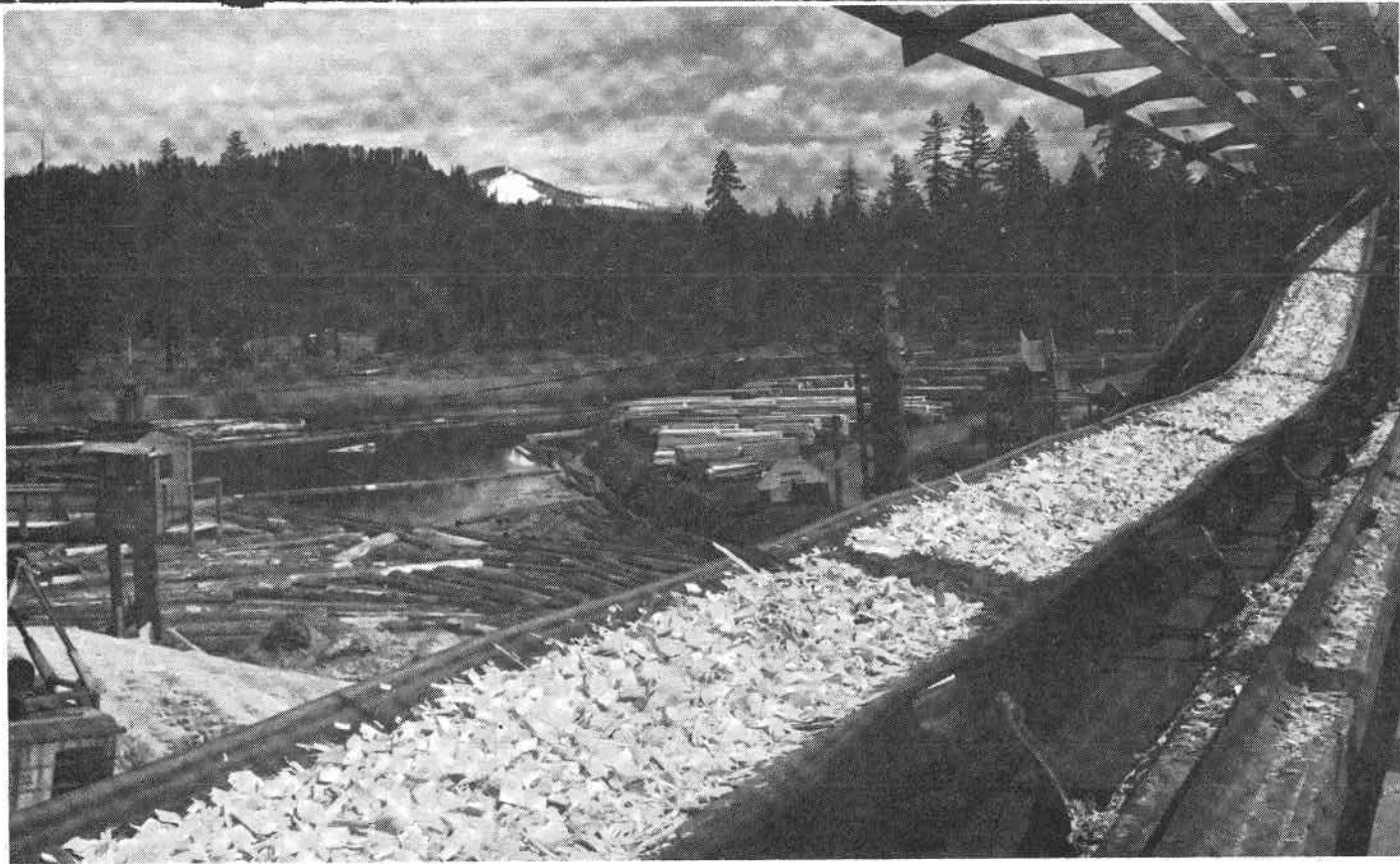
\* Scribner log rule.

**Figure 6. Lumber and log production in Lincoln County, Oregon.**

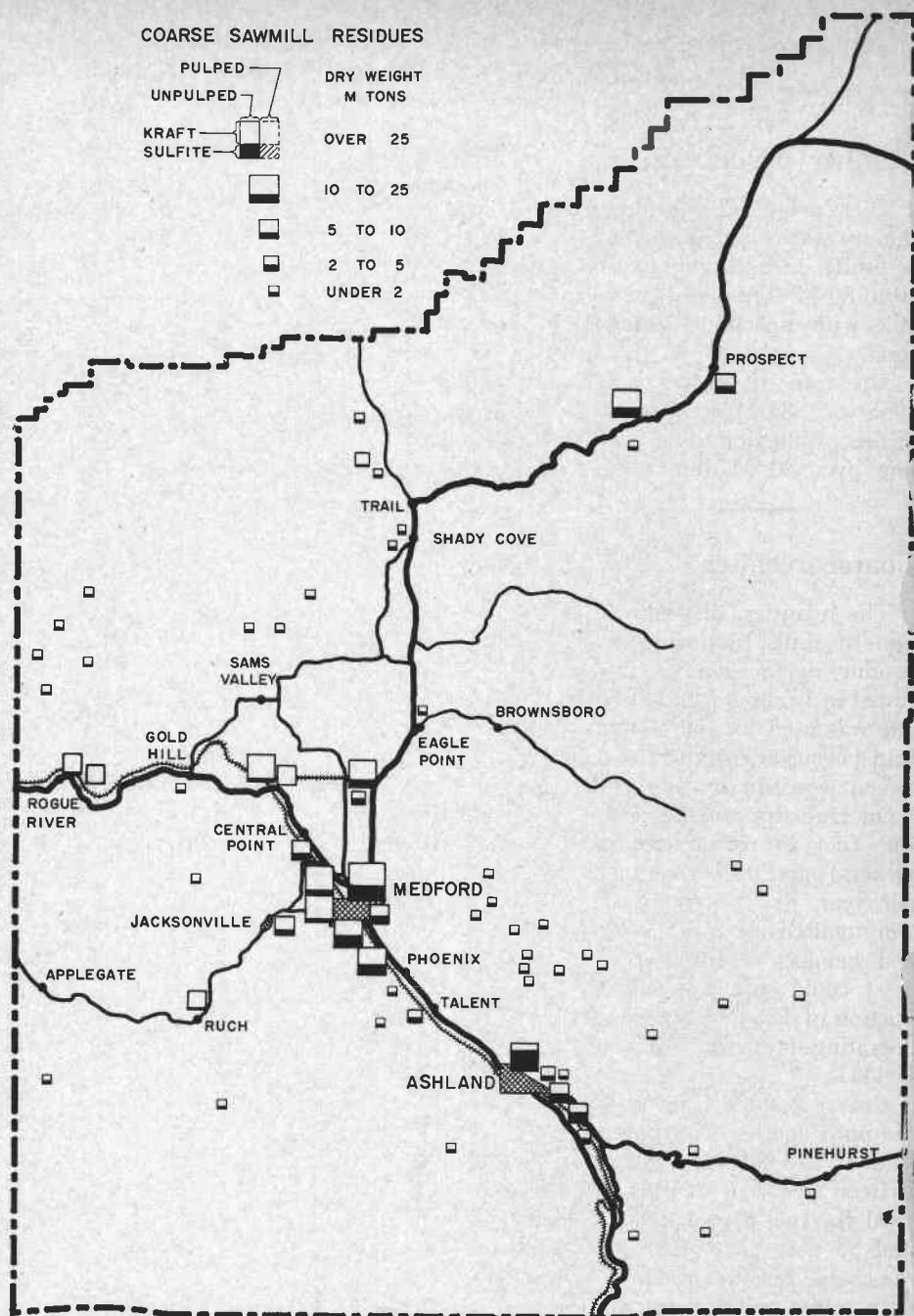
Lumber production may fall below the 1955 level as the county becomes more dependent on its increase in young-growth timber.







**PULP CHIPS from sawmill residues at the Santiam Lumber Co., Sweet Home, Oregon.**



**Figure 7. Location and annual production rate in 1955 of coarse sawmill residues in Jackson County, Oregon.**

# Jackson County

## Lumber production

There were 11 sawmills in Jackson County with capacities over 80 M fbm per shift, 13 mills with capacities from 40 to 80 M fbm per shift, and 53 sawmills with capacities less than 40 M per shift.

The rate of lumber production in 1955 was 881 MM fbm per year. Half of this production came from mills cutting over 80 M fbm per shift, one-

quarter from mills cutting from 40 to 80 M fbm per shift and one-quarter from mills cutting less than 40 M fbm per shift.

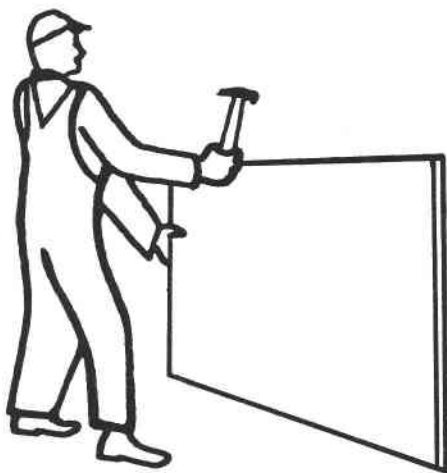
A breakdown of the lumber production by species showed 26 per cent of the total lumber cut was true firs and hemlock, 2 per cent was cedar, 13 per cent was pine, and 59 per cent was Douglas fir.

## Coarse residue

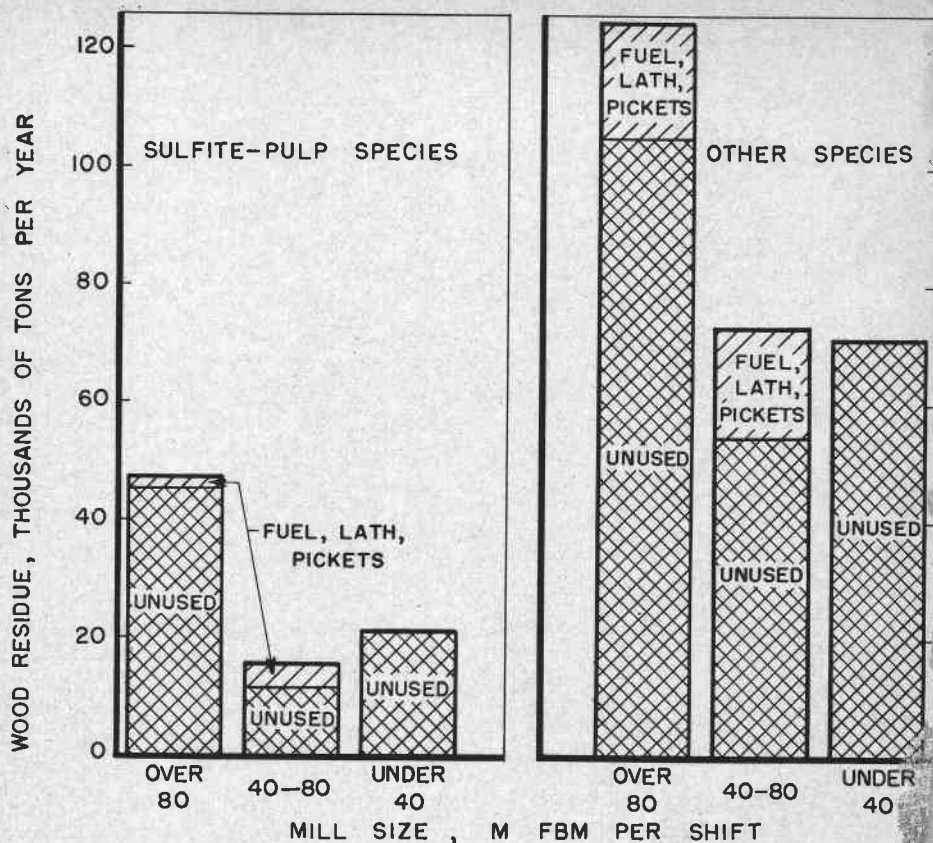
The quantity, disposition, and location of mills producing coarse wood residue in Jackson County are illustrated in Figures 7 and 8. No mill residue was used for pulp because of high transportation costs to the pulp plants. Seven per cent of the coarse residue from true firs and hemlock was used for fuel or remanufacturing (lath, pickets), and 93 per cent (78,000 tons per year, dry weight) was not used. The total coarse residue from true firs and hemlock (86,000 tons per year, dry) could supply a sulfite-pulp production of 123 tons pulp per day (350-operating-day year; 50 per cent pulp yield).

Coarse residue from other than sulfite-pulp species was produced at the rate of 273,000 tons (dry) per year. Fifteen per cent of this residue was used for fuel or remanufactured items and 85 per cent was not used. If all the coarse residue produced from other than sulfite-pulp species were used for pulp, it could give a pulp production of 390 tons of pulp per day (350-operating-day year; 50 per cent pulp yield).

The two plywood plants in Jackson County, having an annual capacity of 74 million square feet of  $\frac{3}{8}$ -inch plywood when operating at rated capacity, would produce almost 10,000 tons (dry) of green veneer trim per year. This material could be converted readily to pulp chips but was not chipped because of the distance to the nearest pulp plant.



Particle board.



**Figure 8. Disposition in 1955 of coarse sawmill residues in Jackson County, Oregon, on a dry-weight basis.**

Coarse mill residues produced in 1955 could supply over 500 tons of pulp daily in Jackson County.



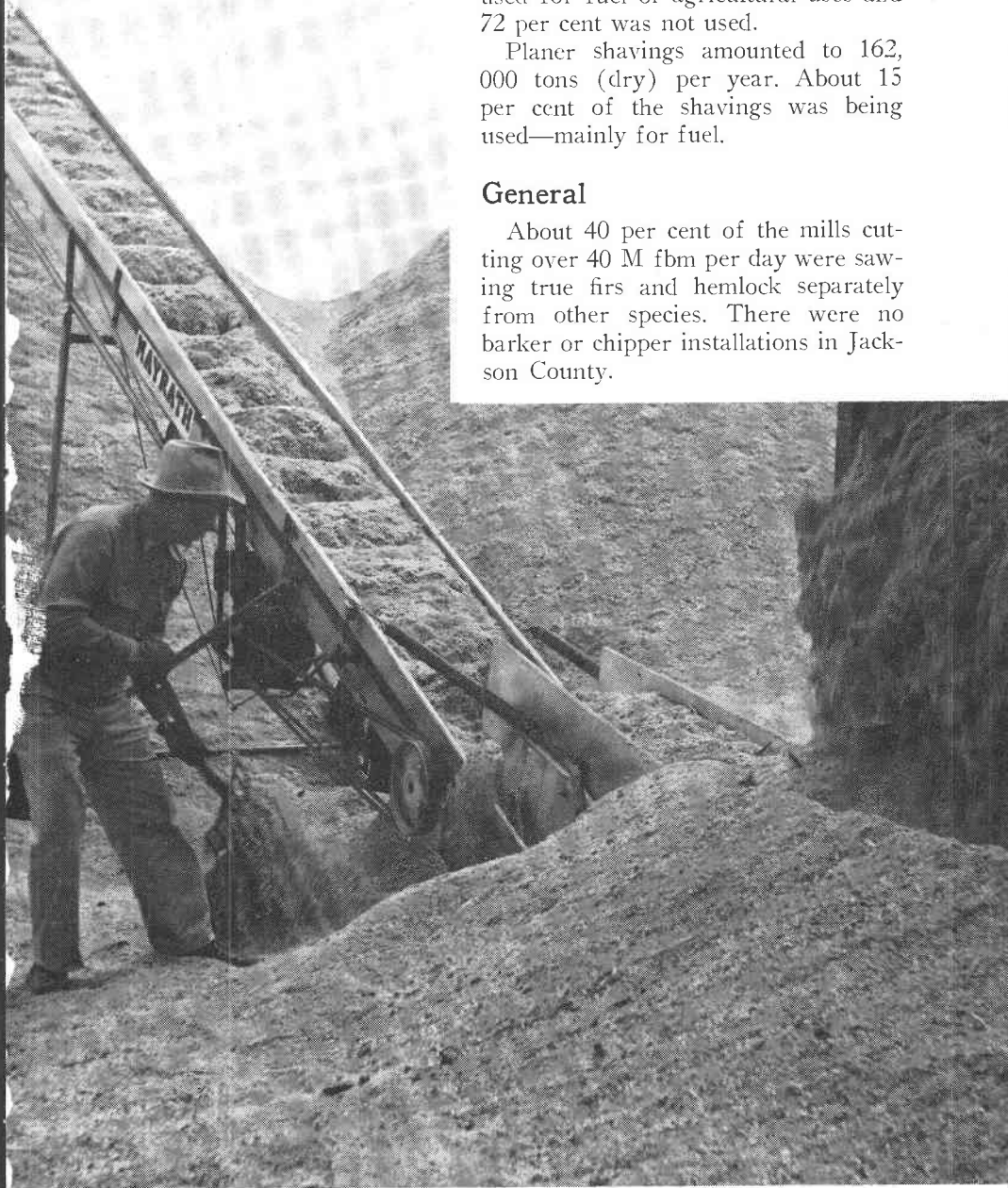
## Fine residue

Jackson County was producing sawdust at the rate of 237,000 tons (dry) per year. Twenty-eight per cent was used for fuel or agricultural uses and 72 per cent was not used.

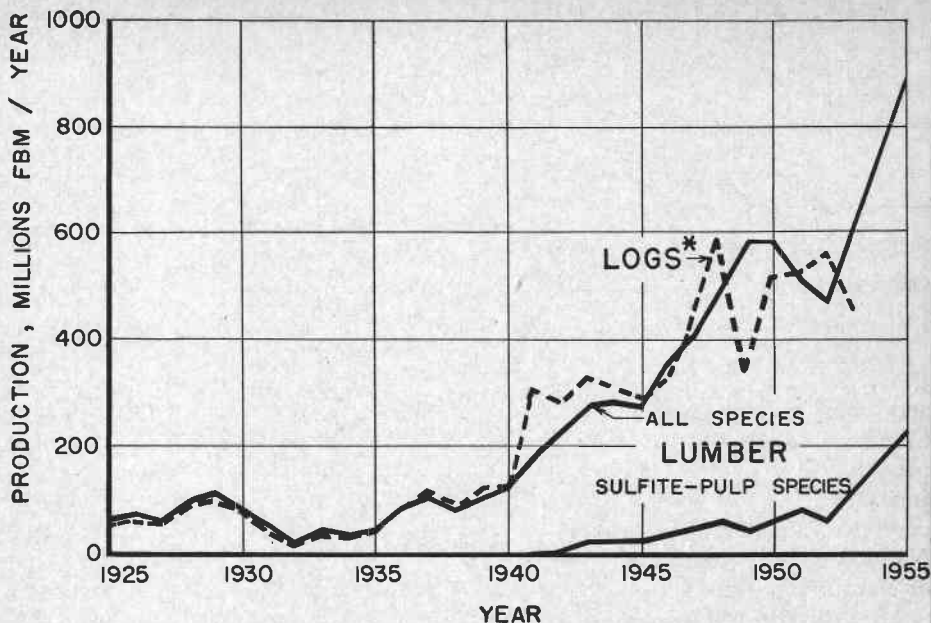
Planer shavings amounted to 162,000 tons (dry) per year. About 15 per cent of the shavings was being used—mainly for fuel.

## General

About 40 per cent of the mills cutting over 40 M fbm per day were sawing true firs and hemlock separately from other species. There were no barker or chipper installations in Jackson County.







\* Scribner log rule.

**Figure 9. Lumber and log production in Jackson County, Oregon.**

Lumber production may decrease somewhat from the 1955 level.

### Forest resources

In Jackson County the National forests contained the great bulk of the sulfite-pulp types. They contained almost twice the area of the sulfite-pulp types

that occurred in either the private or other public holdings. The other public holdings were made up principally of the O and C Revested Land Grants

**YOUNG-GROWTH TIMBER is increasingly important to Oregon.**

