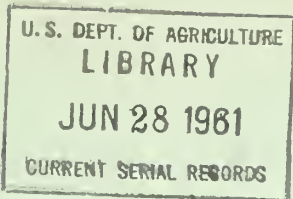


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TIMBER MARKETS AND MARKETING IN THE

Monocacy River Watershed

OF MARYLAND AND PENNSLVANIA

BY

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F O R E W O R D

The Maryland Department of State Forests and Parks, cooperating with the locally organized Monocacy River Watershed Council, has requested the Northeastern Forest Experiment Station to undertake a study of the forest resource of that watershed. The objective is to provide information that will be helpful in conserving watershed values and in promoting better management and utilization of the timber that now occupies 27 percent of the watershed area.

A report on the general condition of the forest resource in the Monocacy watershed and the measures needed to build it up and maintain it has been published as Station Paper No. 40. This second report is offered as an aid to farmers and other owners of small forests who have timber to sell. Efficient and profitable marketing of forest products is one of the keys to better management of forest lands. Improved management for timber production involves the protection and maintenance of a good cover of forest growing stock on the land. This in turn produces the conditions that help to regulate runoff, prevent soil erosion, and decrease sedimentation.

This report was made possible through the Station's project under the Research and Marketing Act of 1946, Title II. Field assistance in the marketing survey on which this report is based was provided by the Maryland Department of State Forests and Parks.



V. L. Harper
Director

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TIMBER MARKETS AND MARKETING
IN THE MONOCACY RIVER WATERSHED
OF MARYLAND AND PENNSYLVANIA

by

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T H E P R O B L E M
O F M A R K E T I N G T I M B E R

THE OWNER of a small forest who wishes to sell some timber often finds himself confronted with a series of baffling problems. There are many questions he wants to know the answers to.

He asks: What products is my timber best suited for? How can I get the best price for it? How many board feet of sawlogs or cords of pulpwood can I safely harvest from my forest? How do you make a harvest cut without wrecking the forest and destroying its watershed values? How important is quality in figuring out the value of my timber? Are there any standard forms of timber-sale contracts that will protect me--and prevent misunderstandings with the fellow I sell to? Who are the timber-product buyers I can get in touch with?

All these questions are important to every forest-land owner who has an interest in keeping his forest in good condition and in getting full value for his timber crop--consistent with good watershed practices.

In the Monocacy River watershed, the prevailing timber-marketing practice is to sell the timber as it stands on the land without paying much attention to any of these questions. Most timber sales are made on a lump-sum basis: the forest-land owner has no close estimate of the volume of timber he is selling, and the timber buyer takes all the trees he thinks can be cut at a profit to himself. Of course this is a poor way to sell timber, and one that would not be considered for a minute in selling any other farm product. It has the further disadvantage that there is no way of knowing--until the timber has been cut--just how much per thousand board feet or per cord has been paid for it. The buyer may not make such a determination. Even if he does, he is not likely to divulge it to the seller. Under such conditions there can be little exact knowledge of what is actually being paid for timber.

No brief report of the kind offered here can do much to change the existing conditions. That is a job that will require sustained local effort and understanding of the problems. Sound advice requires specific knowledge that can be obtained only through an examination of the particular forest property--the kind of personalized attention farmers expect from their county agricultural agent, their lawyer, or their veterinarian.

Recognizing that small forest-land owners have a real need for technical help in managing their lands and in marketing their timber products, the states of Maryland and Pennsylvania have both undertaken to provide this kind of assistance under supervision of their state foresters. District forester offices serving the Monocacy watershed area are located at Cumberland and at Bel Air in Maryland and at Caledonia in Pennsylvania. An assistant district forester works out of Frederick, Maryland. Small forest owners may get free management and marketing help by applying to these district foresters.

Normally the service consists of a preliminary examination of the forest property to determine its general condition. If the forester finds merchantable timber ready for harvesting, he will so inform the owner. If the owner decides to harvest this timber, the forester will mark the trees that should be cut. In doing this he keeps in mind the maintenance of a good cover of forest growing stock that will not only provide for future crops of timber but will also protect the soil and promote good infiltration of water. He will indicate which trees can presumably be sold

and which will have to be used for fuelwood, fence posts, or put to some other home use. He will make an estimate of the approximate volume in the trees marked for sale, and will advise the owner about the best market possibilities--whether for sawlogs, veneer logs, cooperage bolts, pulpwood, or other products. He will also suggest the names of possible buyers and the range of prices that would be within reason. To get the best prices for timber, the forest owner should usually get bids from two or more buyers before he makes a sale.¹

When the owner has decided which offer he is going to accept, the next step is working out a written sale contract with the buyer. The state forestry agencies have developed contract forms that are generally useful for this purpose. Verbal agreements often lead to misunderstandings and other difficulties.

The forester can also suggest the lay-out of the logging job--pointing out the best locations for skid roads and log decks. This is important in avoiding undue damage to the remaining stand of timber. It also is a safeguard against erosion that can readily be caused by poorly located skid trails and roads that channel the surface runoff. In addition, the forester can give the owner some idea about the period of time that should elapse before the next timber harvest. And he may suggest cultural treatments that should be applied in the interim--removal or girdling of wolf trees, weeding, release of desirable species from the competition of less valuable species, and so on.

Owners of larger blocks of timber, who want more service than can be given on a free basis by a publicly employed forester, may find it advantageous to hire a private consulting forester. He will provide similar services. The consulting forester, working directly for the timber owner, can take a more active role in negotiating sales than would be proper for the publicly employed forester. He can also, as the representative of his client, see that the cutting is done in conformity with the marking, and that the logging operations are carried out according to agreement.

¹A LIST OF INDIVIDUALS AND FIRMS IN THE MONOCACY RIVER WATERSHED WHO BUY TIMBER AND TIMBER PRODUCTS WILL BE FOUND AT THE END OF THIS REPORT.

R E C O G N I Z I N G Q U A L I T Y
I N H A R D W O O D T I M B E R

THE MARKET SURVEY on which this report is based disclosed that very little attention is given to the quality factor in the selling of hardwood timber in the Monocacy River watershed. This, of course, is one of the things that go along with the selling of timber on a lump-sum basis. Where there is no definite measurement or estimate of the volume sold, there can be no definite determination of the quality either.

This is bad for the seller because the price he gets may not reflect the actual value of his timber. It is bad for the buyer too because he cannot be very sure of the lumber values he can get from the logs. Recent tests carried on at several sawmills in the Northeast have shown that the lumber values obtainable from top-quality logs are several times those obtainable from the lowest-quality logs that sawmills will accept.

The quality of timber can be determined fairly well by grading the logs. Log-grading methods have been in use for a number of years now, and they provide a reasonably accurate guide to value. Actually the grading of hardwood timber--whether in the standing tree or in the log--is not a difficult thing to do. The grading criteria are closely related to quality specifications for the sawed products--standard factory lumber, ties and heavy structural timbers, and so on.

Log grading could become much more than a mere tool to be used in timber transactions by buyers and sellers. Better understanding of the various factors that determine log quality and value would be a great help in getting forest lands managed better. A poor tree occupies as much space as a good tree. The time may come when forest-land owners will no longer be content with stands of trees that are predominantly of poor-quality--no more than farmers would now be content with raising scrub cattle.

H O W L O G G R A D E S W O R K

IN GRADING standard factory lumber, the main consideration is the length and width of knot-free and sound cuttings that can be made from a given board. This method of grading has been modified to make it applicable to logs or log sections of the standing tree. The log is graded by dividing it into four equal faces and judging each face as though it were a board (figure 1).

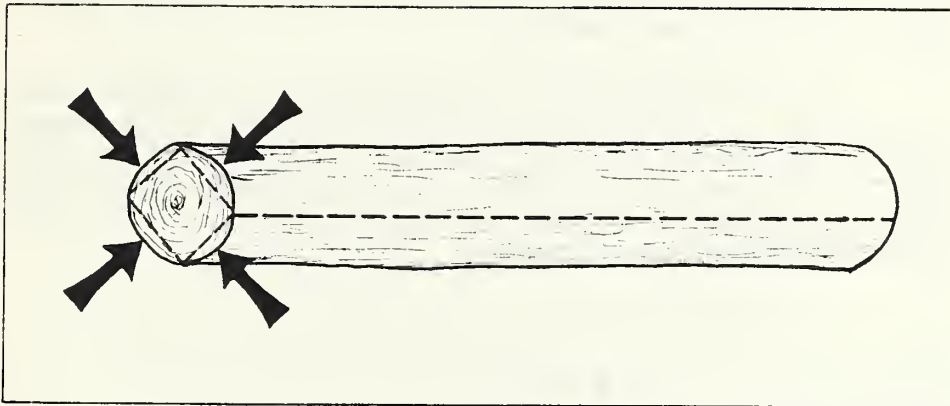


Figure 1.--The grading faces used in grading a hardwood saw-log. Each face is judged as though it were a board.

Experience has indicated that the poorest of the four faces can be disregarded. The grade determination is made from the poorest of the three remaining faces. We call this the "grading face." In general, the factors to be taken into account include anything that limits the clear sections of the grading face.

If the grader is evaluating log sections in a standing tree, he must rely solely on the exterior indicators. Knots are clearly evident, but he needs some practice before he can detect some of the other surface indicators of interior defect. If he is grading cut logs, the grader examines the ends of the logs for indications of internal defect such as mineral stain, shake, worm holes, and the like. Minimum diameter, minimum length, and maximum allowable sweep must also be taken into account. The grader must also make a

reasonably accurate estimate of the fraction of gross volume that will be lost in cutting out the defective (cull) material.

In determining whether logs are suitable for ties or heavy construction timbers, it is necessary to consider only size, strength, and soundness. The face-grading procedure is not used in grading this material.

The detailed rules for log grading are few and rather easily learned. Experience has shown that persons of normal intelligence can become reliable log-graders with 4 or 5 days of special training. Those who have technical training can learn it even faster.

The descriptions and illustrations of log grades that follow will not serve to teach anyone to become a log-grader. They are presented to give some idea of the kinds of logs that fall in each of the three grades suitable for factory lumber and of the lower limits of material suitable for ties and heavy construction timbers.

G R A D E F - 1

THIS IS THE BEST grade of hardwood logs for factory lumber (fig. 2). Usually it will yield more than two-thirds of its volume in the higher grades of standard factory lumber (No. 1 Common or better).²

A butt log may have a diameter as small as 13 inches inside the bark at the small end of the log and still qualify for this grade. Other logs must be at least 16 inches in diameter inside the bark at the small end. All logs must be 10 feet or longer to qualify, and must have at least five sixths of their grading-face length clear of defect or indicators of defect.

This clear length must occur in not more than two sections. The minimum length of these sections varies according to the diameter of the log: For logs 13 to 15 inch-

²GRADED ACCORDING TO THE RULES OF THE NATIONAL HARDWOOD LUMBER ASSOCIATION.

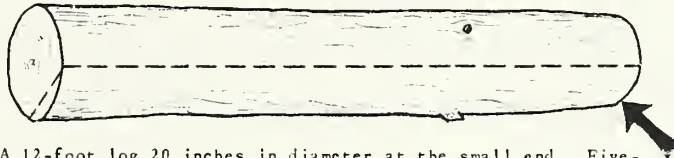
GRADE F - 1



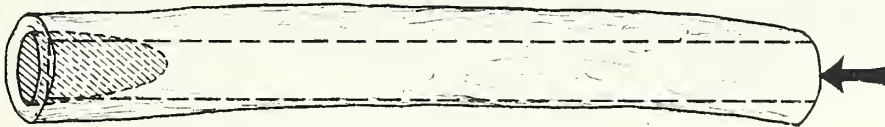
A 16-foot butt log 13 inches in diameter at the small end. More than $\frac{5}{6}$ of its grading-face length is clear in two sections 7 and 8 feet long. Less than 40 percent deduction for cull or sweep.



A 10-foot log 16 inches in diameter at the small end. More than $\frac{5}{6}$ of its grading-face length is clear in one section 8 feet long. Less than 15 percent deduction for sweep; total cull deduction is less than 40 percent.



A 12-foot log 20 inches in diameter at the small end. Five-sixths of its grading-face length is clear in two sections 8 and 3 feet long. Deduction for cull and sweep is less than 40 percent.



A 16-foot log 20 inches in diameter at the small end. Less than 15 percent deduction for sweep. Total deduction for sweep and rot is less than 40 percent. There are no surface indications of defect.

Figure 2.--Four examples of Grade F-1 hardwood logs.

es in diameter, the minimum clear length is 7 feet; for logs 16 to 19 inches, 5 feet; for logs 20 inches and larger, 3 feet. Logs in this grade may have up to 15 percent deduction for sweep but not more than 40 percent total deduction for sweep and cull.

Four different kinds of logs that meet the requirements of Grade F-1 are illustrated in Figure 2. Of course these are only examples of the many kinds of logs that fall in this grade.

G R A D E F - 2

THIS IS THE SECOND-best grade of hardwood logs for factory lumber (fig. 3). Normally it will yield about one-half of the log volume in the higher grades of standard factory lumber.

A log more than 10 feet long may have a diameter as small as 11 inches inside the bark at the small end and still qualify for this grade. Logs as short as 8 feet with a diameter of 12 inches or more are acceptable, provided at least three-fourths of the grading-face length is clear of defects or indicators of defects. Logs 10 feet or longer must have at least two-thirds of their grading-face length free of defect. Logs 8 to 11 feet long must have their clear length in not more than two sections, each at least 3 feet long. Longer logs may have their clear length in not more than three sections, each at least 3 feet long.

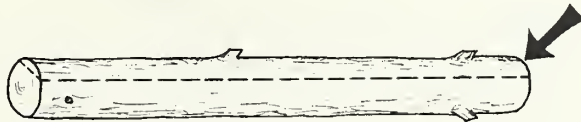
Logs in Grade F-2 may have up to 30 percent deduction for sweep, but not more than 50 percent total deduction for sweep and cull.

G R A D E F - 3

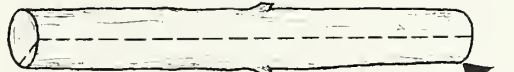
THIS IS THE POOREST grade of hardwood logs suitable for standard factory lumber (fig. 4). About one-third of the lumber yield will be in the higher grades.

Logs in this grade may have a diameter inside bark as small as 8 inches. The minimum length is 8 feet. One-half

GRADE F-2



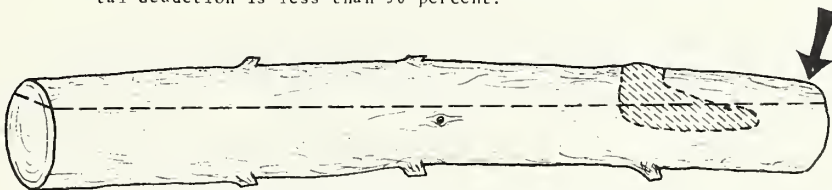
A 10-foot log 11 inches in diameter at the small end. More than $\frac{2}{3}$ of its grading-face length is clear in two sections each 4 feet long. Less than 50 percent deduction for cull and sweep.



A 9-foot log 12 inches in diameter at the small end. More than $\frac{3}{4}$ of its grading-face length is clear in two sections 4 and 3 feet long. Less than 50 percent deduction for cull and sweep.



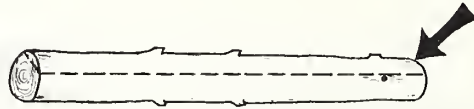
An 11-foot log 18 inches in diameter at the small end. More than $\frac{2}{3}$ of its grading-face length is clear in two sections 5 and 4 feet long. Deduction for sweep is 30 percent. Total deduction is less than 50 percent.



A 16-foot log 22 inches in diameter at the small end. More than $\frac{2}{3}$ of its grading-face length is clear in three sections 4, 3, and 4 feet long. Less than 30 percent deduction for sweep. Total deduction is less than 50 percent.

Figure 3.--Four examples of Grade F-2 hardwood logs.

GRADE F-3



An 8-foot log 8 inches in diameter at the small end. More than $1/2$ of its grading-face length is clear in two sections of 2 feet or longer. Less than 50 percent deduction for cull and sweep.



A 12-foot log 14 inches in diameter at the small end. More than $1/2$ of its grading-face length is clear in two sections 4 and 2 feet long. Less than 50 percent deduction for sweep and rot.



A 14-foot log 22 inches in diameter at the small end. More than $1/2$ of its grading-face length is clear in three sections 3, 3, and 4 feet long. Less than 50 percent deduction for sweep and rot.



A 16-foot log 22 inches in diameter at the small end. One-half of its grading-face length is clear in three sections at least 2 feet long. Less than 50 percent deduction for sweep and rot.

Figure 4.--Four examples of Grade F-3 hardwood logs.

of the grading-face length of the log must be clear of defect or indicators of defect. This clear length may be in any number of 2-foot sections. A deduction of up to 50 percent for sweep alone or for a combination of sweep and cull is permissible.

T I E A N D S T R U C T U R A L

THIS CLASS INCLUDES logs that do not meet the requirements for factory lumber, but are usable for ties and heavy structural timbers (fig.5). Such logs are sound but have not enough clear length to qualify for grades F-1, F-2, or F-3.

This class of log must be sound and have no weakening defects such as large knots, split, or shake. A tie and timber log may be as small as 8 inches inside bark at the small end, and as short as 8 feet. Sound knots are permitted if the diameter of the knot collar is not more than one-third of the log diameter at the point where the knot is. Any number of whorled knots occurring within 6 inches vertical distance are permitted if the aggregate of knot-collar diameters does not exceed one-third of the log diameter at the point where they occur. Sweep is permitted, provided it does not exceed one-fourth of the diameter of the small end of the log.

G E N E R A L S P E C I F I C A T I O N S

F O R O T H E R P R O D U C T S

Veneer Logs

LOGS SUITABLE FOR veneer are the cream of the timber crop. As a rule they bring prices that are well above the prices paid for the highest-quality sawlogs.

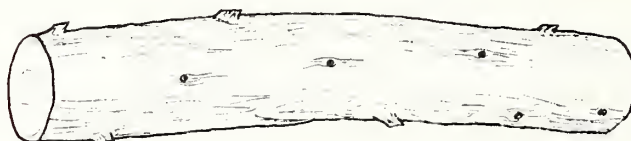
In the Monocacy River watershed area, the veneer-log buyers have various specifications as to minimum diameter and length. One buyer, for example, wants white oak veneer logs to be no less than 18 inches in diameter and 6 feet in length. Some buyers require that the average diameter of

the logs they buy shall be considerably greater than the minimum required for any one log. Some require that the bulk of the logs in any one purchase shall be butt logs. Some insist on straight logs with no visible defect; others will accept logs with a limited number of surface defects.

T I E A N D S T R U C T U R A L G R A D E



A 10-foot log 18 inches in diameter at the small end. It has numerous knots, but none with a knot collar exceeding $\frac{1}{3}$ of the log diameter at the point where it occurs. No unsound defect. The log is straight; so there is no problem of sweep.



A 12-foot log 22 inches in diameter at the small end. This is a rough log with numerous knots and some sweep. However, the knots are within permissible limits and sweep does not exceed $\frac{1}{4}$ of the diameter of the small end of the log.

Figure 5.--Two examples of logs graded as Tie and Structural logs. These are sound, but not clear enough to qualify in factory grades.

The sale of veneer-quality timber should be made with much care. Only a part of a forest stand is of such quality. If the owner first makes a separate cut for veneer logs, he may find that the remaining timber can be sold only at a price below the average that is being paid

for sawlog material. Most sawmill men do not like to come in after a veneer-log cutting and pay top prices for the leavings.

A sale arrangement that has worked is one in which the buyer has arranged to segregate the veneer material and dispose of it on his own account. In other cases, the veneer buyer and the sawlog buyer have had definite understandings about how the cutting shall be done. This way it is possible for the sawlog buyer to be sure that parts of trees not suitable for veneer will be cut to sizes that he can use.

The owner of high-quality white oak timber has a choice of three different markets--veneer, cooperage, or sawlog buyers. He should consider each in order to decide which one will give him the highest return. Most woodland owners will find it best to get professional advice before making such a decision.

Cooperage Bolts

The tight-cooperage market is a good outlet for white oak. Bourbon stave bolts are usually wanted 36, 37, or 38 inches long; bolts for headings, 24 inches long. Before cutting, however, the woodland owner should check with cooperage buyers to get detailed specifications on length and diameter of bolts, clear face requirements, manner of splitting, and units of measure. Cooperage bolts are purchased by the cord, by the board foot, or by the piece. The selling problem is about the same as with veneer material.

Pulpwood

An important requirement laid down by pulpwood buyers is that there be no indiscriminate mixing of species. The reason for this requirement is the difficulty of pulping any mixture of coniferous and broadleaf species, or any mixture of dense hardwoods and softer hardwoods.

The acceptable mixtures of species vary somewhat from company to company. In general, however, a mixture of pines and hemlock is acceptable. Another acceptable mixture of species included poplar, basswood, maple, birch, and beech. A third mixture is the oaks. Species not acceptable for pulpwood include hickory, locust, walnut, and cedar.

Further requirements of at least one pulpwood buyer are as follows: All wood must be cut from sound, live trees. Wood having fire char, embedded metal, or decay is

not acceptable. Wood must be cut in 5-foot lengths. Sticks must be reasonably straight, with limbs and stubs trimmed close. Hollow and gnarled logs and unsplit crotches are not acceptable. Wood less than 3 inches in diameter at the small end is not acceptable. Wood that is more than 18 inches in diameter is not acceptable; it must be split. But sticks less than 10 inches in diameter should not be split. Wood must be completely peeled, both inner and outer bark removed. All deliveries are subject to measurement, inspection, and shipping instructions of the company.

Feltwood

Feltwood (defiberization) plants have lower quality specifications than most of the other wood-using industries. The specifications of one such plant are as follows: All wood must be green and unpeeled. Sticks must be 5 feet long and at least 3 inches in diameter; those more than 8 inches in diameter must be split. Sweep or crook must not exceed 8 inches from a straight line. The wood may be either sawed or chopped. Oak, maple, ash, beech, birch, elm, gum, basswood, apple, and walnut are acceptable. Feltwood is measured in cords of 5-foot wood, 160 cubic feet to the cord.

Fence Posts And Fuelwood

Black locust, a very durable species, is much sought after as a material for fence posts. These may be sold as split posts to neighboring farmers or as stumpage or round material to sawmills, where they are usually sawed into fence posts.

Although markets are limited, some fuelwood can usually be sold. Markets are most often found in and around the numerous rural villages in the watershed. Woodland owners often can sell tops and limbs from saw-timber trees for fuel.

D I R E C T O R Y O F T I M B E R B U Y E R S

ONE OF THE FIRST things the owner of a forest wants to know before he tries to sell timber is who he can sell it to. In an attempt to answer this kind of question, a list

of individuals and companies who buy and process various kinds of timber products was compiled during the market survey of the Monocacy River watershed. This list was compiled during the late summer of 1950.

Of course inclusion of a buyer's name in this list does not constitute a recommendation or endorsement. And, on the other hand, omission of a buyer's name from the list means only that he was not located during the survey.

Stumpage And Sawlogs

Carroll County, Maryland

Arnold, William L. Westminster.
*Barnes, Walter N. Sykesville.
*Barnes, Leslie. R.D.2, Sykesville.
*Wentz, H. E. and C. L. Harvey.
*Wentz, Walter N. R.D.3, Westminster.

Frederick County, Maryland

*Brown, Clyde W. Lantz.
*Carpenter, R. Eldred. R.D.1, Frederick.
*Delauter Brothers. Myersville.
*Fogle, Samuel C. New Midway.
McCleaf, Albert W. Emmitsburg.
Miller, Ralph W. Thurmont.
*Morgan, Jasper. Myersville.
Pool, George W. Libertytown.
*Shaff, James V. R.D.4, Frederick.
*Smith, Charles E. Thurmont.
*Tressler, Walter. Emmitsburg.
*Wade, Paul R. and Theodore. Cascade.
*Watkins, C. H. New Market.

Adams County, Pennsylvania

*Green, Fred. R.D.2, Gettysburg.
*Lightner, H. W. R.D.1, Fairfield.
McLeaf, E. L. Fairfield.
*Metz, Luther. Fairfield.
Sharrah, John. Cashtown.
*Taylor, Charles L. R.D.1, Fairfield.
Witherow, Burton. R.D.1, Gettysburg.

* ALSO DOES CUSTOM SAWING.

Veneer Logs

Woodsboro Veneer & Lumber Company. Woodsboro, Md.

(Note: This is the only veneer plant located within the Monocacy River watershed. The following plants and buyers, located elsewhere, also buy veneer in the watershed.)

Jersey Package Company. Bridgeton, N. J.

Lennit Wood, Inc. 12 E. Lexington Street, Baltimore, Md.

Penn Veneer Company. Summer Street & Pennsylvania Railroad, York, Pa.

Van Hessen, G. A. 15 W. 29th Street, Baltimore, Md.

The Veneer Manufacturing Company (Williamson Veneer Company) Cockeyville, Md.

Pulpwood

The Glatfelter Pulp Wood Company.

Offices at Spring Grove, Pa.

Murphy Building, Gettysburg, Pa.

LaPlata, Maryland.

Pierce, John. Monkton, Md.

Feltwood

Apex Wood Products Company. Baltimore, Md.

Certain-teed Products Corporation. Lock Box 959, York, Pa.

Pierce, John. Monkton, Md.

Cooperage Stock

Maple Grove Mills. Maple Grove, Md.

Sawmill Operators Who Do Custom Sawing Only

Carroll County, Maryland

Barnes, A. William. R.D.5, Westminster.

Brehm, J. Elwood. R.D.4, Westminster.

Dubs, Robert. Lineboro.

Devilbiss, Wilbur. Uniontown.

Frock, John W. R.D.2, Westminster.

Gartrell, Alvin E. R.D.6, Westminster.

Gilbert, N. Roger. R.D.5, Westminster.

Shaffer, Dolton M. R.D.1, Lineboro.

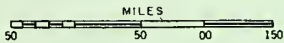
Stud, Paul. R.D.2, Westminster.

Frederick County, Maryland

Boyer, Lester W. R.D.5, Frederick.
Brown, Clyde W. Lantz.
Davis, Wilbur. R.D.2, Mt. Airy.
Haugh, Harry. Blue Ridge Summit.
Hays, Samuel C. Emmitsburg.
Keeney, R. A. & Son. R.D.1, Woodsboro.
Lawson, J. V. R.D.2, Frederick.
Nash, Grover. Libertytown.
Ramsburg, Harry W. Walkersville.
Ramsburg, Henry. R.D.3, Frederick.
Rice, S. P. R.D.1, Thurmont.
Royer, Samuel, Sr. R.D.1, Emmitsburg.
Sears, Ira. R.D.2, Frederick.
Sharp, Gerald B. Thurmont.
Stouter, Martin B. Emmitsburg.
Stull, C. B. & Son. R.D.3, Frederick.
Turner, Stanley. Emmitsburg.
Williard, Glen K. Sabillasville.

Adams County, Pennsylvania

Hoke, Henry. R.D.1, Fairfield.
Kluck, Oliver. R.D.1, Littlestown.
Lott, R. D. R.D., Aspers.
Pecher, J. Harry. R.D.1, Fairfield.



TERRITORY SERVED
by the
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EXPERIMENT STATION**



UPPER DARBY, PA.

