V I R G I N I A

EXTENSION FORESTER..... 1932

Index		Page
1 c 3,7¼.....	Forestry Products.....	8
6 h 2,Hill...	Forestry Feature Story...	6 - 7
10 f 3.....	Selective cutting.....	6 - 7

FOL.

3

ANNUAL REPORT

EXTENSION WORK IN FORESTRY

DECEMBER 1, 1931 to NOVEMBER 30, 1932.

By

Wilbur O'Byrne Extension Forester

To

John R. Hutcheson, Director Extension Division

Virginia Polytechnic Institute

(1) Organization:

The organization of the Forestry Department remains unchanged. Under a joint agreement participated in by the United States Department of Agriculture, the Virginia Forest Service and the Extension Division of V. P. I., one full time specialist is employed. He reports to the State Forester as regards subject matter and to the Extension Director as regards methods of presentation.

(2) Economic Background:

Approximately three fifths of the land area of Virginia is either occupied by tree growth or is lying idle for lack of such cover. Of these fifteen million acres of actual or potential forest land, approximately half is included in what is usually regarded as farms. There are no records to show how much of this area is being handled by its owners for a continuous yield, or according to any conscious plan, but certainly it is a very small part. The majority of it is looked upon by its owners as potential farm-land rather than productive forest and has, therefore, been cut whenever the owner thought he saw an opportunity for an operating profit without thought for its future as a forest. The result is that the majority of farm woods have degenerated to little better than weed patches, yielding a mere fraction of which they are capable. Nor is there much hope for improvement until the individual farmer comes to think of his woods as a permanent and integral part of his farm and plan his work accordingly.

The increase in the amount of idle or waste land on farms appears to be, at least temporarily, checked. Lack of employment in the industrial centers have driven many families and individuals to the country where fuel and shelter are avail-

ship at a more moderate figure, and where there is a chance to produce something to eat. There are no figures to show the extent of this movement but it is resulting in the clearing up of a considerable area which had been abandoned as farm-land during the period of industrial expansion. Unfortunately, the tendency is to clear up land which has gone back to forest rather than to improved areas which are still open. (Or perhaps it was the areas which had been abused least which have come up to pines. Which ever it is, the result is the same.) The permanence of this "back to the farm" movement will probably depend upon the rapidity with which industry recovers. For the time being, however, it has an unsettling effect.

The financial situation has become worse rather than better. Farm prices, which showed a tendency to improve, have slumped to new lows and prices of forest products have declined steadily. On top of this, 1938 saw a drouth throughout a large portion of southside and central Virginia which in many places was more disastrous than that of 1930. The actual deficiency in rainfall was not as great as in 1930, but coming on top of former deficiencies the cumulative effect was worse. Streams, springs and wells that never faltered in 1930 went completely dry in 1938. Gardens and small fruits as well as field crops failed so that food and feed supplies are generally low. Many of the 1930 seed loans could not be repaid and present indications are that an even smaller percentage of those made in the spring of 1938 will be paid. The call for outside help has been insistent and the Red Cross and similar organizations have been active since late summer. Altogether the outlook for the coming winter is the worst we have had to face.

(3) Changes in relation of extension work in forestry to allied projects.

The only changes worthy of note during the past year in the relation

between forestry work and that of allied projects are the growing realization of the necessity for a planned use of land and a closer correlation between the terracing work in the Agricultural Engineering Department and reforestation.

At the suggestion of the director of the Virginia Soil Survey, the director of the Experiment Station has designated a committee consisting of these two, together with the director of Agricultural Extension, head of the agronomy department and the extension forester to formulate plans looking to a comprehensive land classification program for the entire state. The forester's interest is two fold. As a citizen and member of the faculty of an agricultural college, he is interested in promoting the best permanent use of the soil resources of the state. As a forester, he is interested in the stabilizing influence of a definite land classification, to the end that he may formulate and help put into effect the type of plans called for by a slow maturing and continuing crop like trees. This committee has had two meetings, has organized and gone to work on the development of a program.

The specialist in charge of terracing work in the Agricultural Engineering Department and several of the county agents who are most interested in terracing have cooperated with the writer in anticipating some of the findings of land classification. There are degrees of slope and degrees of soil poverty or depletion beyond which terracing, while possible, is not economically feasible. No arbitrary point for such a classification can be established but one point is being stressed by both agencies; that either terracing or tree growth is necessary on such areas if excessive wastage through erosion is to be avoided.

It has not yet seemed expedient to place a forester and wood technologist

in the faculty to resume the work so well started by Dr. Lodewick. No forestry instruction is therefore being given to agricultural students.

(4) Phases emphasized in 1938.

The Extension Forester has considered that his responsibility consists of the problems connected with the development as productive forests, of those portions of the farm which promise greater ultimate profit in timber growth than when used for cultivation or pasturage. There remains outside of farms, a large area of forest land which at present is without supervision and which must ultimately be organized into either commercial or public forests. It is highly important that the public be educated to the desirability of such organization but the extension forester is interested in this only as a citizen. Commercial forests must support their own technical staff. Public forests will be the responsibility of the administrative branch of the government concerned. The farm forest presents an entirely different set of problems in that its management must be correlated with the activities and the material requirements of the farm of which it is a portion. Its function must be to:

1. Put to productive use all land which cannot be farmed profitably and without excessive deterioration.
2. Supply the forest products necessary to the operation of the farm.
3. Supplement the farm income through the sale of surplus products.
4. Round out the farm labor year by furnishing slack season employment for farm labor, work stock and equipment.

The farm forestry program is the development of a system of handling the farm forest which will enable it to meet these responsibilities and so contribute its full share to the farm income. In general the program consists of -

1. Rebuilding the forest capital to a point where growth (interest) can be counted in for a substantial income.

2. Regulating the harvesting of the crop so that only the growth be taken; leaving the capital intact. Thus is achieved the objective of all forestry - a sustained yield.

3. Harvesting the matured crop in such a manner as to insure prompt and complete renewal of the forest.

4. A constant study of the market for forest products in order to develop better correlation between the requirements of those markets and the products that would be available from the farm forests when handled according to steps 1, 2 and 3.

Rebuilding the Forest Capital:

The two greatest obstacles in the way of interesting the average "dirt" farmer in better care of the farm forest seems to be: 1st. the hereditary instinct that all land is inherently farm land, and 2nd, the notion that forestry is a fine-spun theory which calls for an outlay of labor and money. Many agricultural leaders show this innate antagonism to trees; even when their reason tells them that timber growing offers the only chance to make certain areas return a profit. One of the most vociferous of these recently stated through the medium of a magazine of national circulation that none of the timberlands of the south need be given over to tree growth. It was merely a question of finding and introducing the proper forage plants. And since this advice is along the lines the average farmer prefers to be convinced, it is given undue credence. The forester, because he "has an axe to grind", is at a distinct disadvantage in correcting such misguided optomism except as he finds it possible to work through economic, farm planning and land classification agencies. It is for this reason, as well as because of its own importance that the writer has thought it worthwhile to prepare forestry sections for each soil and industrial survey as it has been prepared and has encouraged in every way possible all movements looking toward a land classification and a planned use of our soils

The second obstacles is easier to overcome as it merely calls for selecting projects which are so simple that all that is necessary is to get the farmer to give the proposition a trial and show him that it is not so much a question of WHAT he does as it is one of HOW he does those miscellaneous pieces of work which he is going to do in the woods every year in any event. If he once sees it as "common sense applied to the farm woods" his mind is open to most any practical suggestion.

Mr. John Hastings is one of the leading farmers in Halifax county and a man of action rather than words. The county agent was anxious to sell him on the forestry idea,as he is a man to whom other farmers look for good practical guidance. We found him clear cutting a rather steep slope for "flue wood". (The slope had gullied in the past and would gully again if plowed in cultivation). He asked "Are you clearing that land to cultivate?"

"No, I'll just let it grow up again."

"Why are you leaving those rough, limby spruce pines?"

"Because they're so mean to handle?"

"Well, Mr. Hastings if you cut all of the short leaf pines and leave those limby spruce pines to scatter seed, what are you going to have on that slope when it does grow up?"

A pause then Huh! I never thought of that. Say Mr. Hall do you know where I can get a good rooster? etc. etc."

We never got back to trees again, but six or eight months later when we visited Mr. Hasting's farm again, if there was a spruce pine as large as a man's leg on the farm it was because Mr. Hastings had failed to locate it. He had enough

flue wood and stove wood cut to last him for two or three years. He had cut some trees which I would have left standing, for the time being at least, but he didn't have any spruce pines scattering seed to make more of their kind. As a direct result of that visit, we put on two forest improvement demonstrations and one planting demonstration in that community during the following winter and spring.

The three most obvious steps in rebuilding depleted farm forests are:

(a) Thinning, weeding and culling existing forest growth in the process of cutting out fuel wood, pulpwood, stake bolts, fish poles and such other products as can be made from small or low grade trees, either for sale or for use on the farm.

(b) Protecting the forest from fire, insects, grazing, indiscriminate cutting and unwise clearing.

(c) Reforesting idle and unprofitable farm land or areas of forest land which have been so badly abused that natural recovery would be too slow.

Thinning, weeding and culling is applicable on every farm which contains woodland, but was pushed as a project principally in the bright tobacco growing section because of the steady demand for considerable quantities of fuel and flue wood on almost every farm. Twenty two demonstrations were conducted in this territory where either flue wood alone or pulpwood from the trunk and flue wood from the tops were the products of the operation. Unfortunately the drouth and resultant short crop of tobacco left so much of last year's wood unused that several projects planned for this fall and winter were postponed until the wood now on hand has been used.

The Halifax pulpwood project was particularly disappointing for two reasons: 1st. Several of those who were given contracts on the promise that they would use the thinning and weeding principle, turned the work over to negro employees or tenants and went off to the closest store to play checkers. The rest of the

story is too obvious to need telling. As closely as we could estimate, however, about half or a little more of those who were given contracts conscientiously endeavored to use the business as a means of improving the quality and growing capacity of their forest and I suppose that was really a very good showing.

The Pulp company fell down badly on their contract. The farmers turned out as fine a lot of pulpwood as ever reached the plant. (doubtful sticks were kept back for flue wood). However, the market for paper got so bad that after four or five brief shutdowns during the spring months, the plant closed early in July and did not reopen until November 15th. When they did open it was on the basis of using $4.00 wood rather than $6.00 wood as contracted for. Their position is virtually this, "We acknowledge our obligation to take your wood at $6.00 but we cannot do it now. If you are willing to sell it at $4.00 now rather than hold it until we can pay $6.00 we will take it. We can give no assurance as to when we can take it at $6.00." Naturally there is some hard feeling and to date those who hold the $6.00 contracts have not been able to get together on what they want to hold out for. The county agent and the writer are extremely anxious to keep relations harmonious as we count on pulpwood sales by this particular company as forming the backbone of our annual harvest idea in the county.

Use of the thinning idea in getting out stave bolts and piling has made little progress. Fish poles from thinnings has made some progress, with three demonstrations, but the low prices received for fish has made the fish pole business poor, with payments uncertain. Fuelwood for the farm from thinning and weeding operations is in more or less general use, but is usually so lacking in system that the owner does not realize that he is accomplishing anything. The most common form is to pick around over the entire woods for dead trees. This is expensive

tedious and really accomplishes little as the dead trees are no longer [illegible] to the forest. The effort here has been to get the farmer to start at some definite point and work systematically, completing progressive areas each year. In this way he can see what he has accomplished and so encourage himself and stimulate a neighbor to do likewise.

Fire, insects, browsing stock, fungus diseases and reckless cutting constitute the destructive agencies against which the forest must be guarded. The State Forest Service is charged with the general fire protection work. This organization, however, does not as yet cover the entire state and even where it is active, the extension forester can supplement its activities with educational work on individual farms and so support the work of the Forest Service.

This year witnessed the third consecutive year of activity on the part of the forest tent caterpillar. No practical means of fighting this insect in the forest has been developed, but the extension forester has kept his eye on the situation. Fortunately, this epidemic appears to be on the wane. Although the number of caterpillars and the amount of defoliation over most of the area involved seemed to be as severe as ever, the number of moths emerging was noticably lower than heretofore. There is reason to believe that the natural enemies of this forest pest are now about to take command of the situation. Much indirect damage has, however, already been done. As a combined result of the work of the forest tent caterpillar and three consecutive years of drouth, forest trees have been seriously weakened so that they fall an easy prey to other insects. There have been a number of calls for assistance to check attacks of the southern pine beetle. These calls, however, have been much less frequent than had been anticipated. A new insect, the "Two-lined - chestnut borer", made its appearance this year and resulted in a great deal of emergency work. Oak trees throughout central Virginia

suffered most. Efforts here were along two lines - salvaging the dead and dying trees and reducing the numbers of the over-wintering brood. Lack of markets for the material was a serious handicap in these efforts.

A project in fencing out browsing stock was well started in Rockbridge county but had to be dropped when the county was lost to extension work. No fungus diseases (except chestnut blight) has assumed serious enough proportions to warrant special consideration beyond bearing it in mind whenever improvement cuttings are in progress. Reckless cutting and unwise clearing are always to be guarded against but do not lend themselves to project form. In the past year or so there has been an unusual amount of clearing up patches of pine for cultivation. Most of this is due to the unemployment situation in the industrial centers and can not be influenced. Some of it will probably remain in cultivation but much will go back to trees again as soon as industrial conditions improve for the same reason it was abandoned ten or fifteen years ago.

Reforestation has not been pushed as an adult project; 1st. because, given a reasonable chance, natural reseeding takes care of most cases; not ideally perhaps but quite well. 2nd. Ten years of low prices and three years of drouth have reduced the amount of cash that the average farmer has to work with to such a low point that it is the exceptional farmer who can buy the trees, even at the low price at which they are offered.

Whenever we contact a cutting operation before it is done, whether it be for pulpwood or some other product, we try to get it done on a thinning and weeding basis. If that is not practical we next try for a partial cutting and if that does not suit the case, we try to have seed trees left. Commercial cutting is so

scattered, however, that this is carried on a service basis rather than as a project.

Last spring the State Forest Service announced that they would give, free of charge, up to 1000 seedling trees to each 4-H club member electing reforestation as a project. This announcement came so late that most members were already at work on their projects and only half a dozen or so took advantage of the offer. This next spring it is planned to push this project throughout the tobacco section (where it is most urgently needed) and steps in this direction have already been taken.

Regulation of the harvest for a sustained yield:

Our primary project under this head, that in Halifax county was severely interferred with by demoralization of the pulpwood market. However, the idea was pretty well accepted by most of those taking part and there is reason to believe we can resume where we left off, once the market improves. Over two thousand copies of Farm Forestry - "A Concrete Example" were distributed, mostly at meetings and demonstrations, and some work has been done in several sections where pulpwood is being cut. This however is slow work, especially where most of those who are cutting wood are doing so from sheer necessity and are so concerned with getting by the present emergency that they have little left with which to consider the future.

Renewing the forest after harvest:

This portion of the program, while important, presupposes a better market than there is at present if it is to be handled as a project. Like many other important pieces of work it is not being pushed at present. When an opportunity presents itself it is taken advantage of, but more on a service basis than as a project.

11

Market Study:

Seventeen new industries have been contacted and their cooperation secured through the past year. Those interviewed are generally sympathetic to what we are attempting to do but are caught in the whirl of circumstances that make them unwilling to undertake anything new. Rock bottom prices, wages and profits make a discouraging point from which to start an untried scheme.

The reports on Timber Market Conditions have been continued and seem to be serving a real purpose. The burden of most summaries still is "Sell if you must and can but sell before you cut the trees."

(5) Outlook:

The outlook for forestry as a farm enterprise is distinctly encouraging. The long period of high wages and industrial expansion took many of the young people from farm to city. When agricultural prices slumped a full 6 years before manufactured commodities fell, the movement was accelerated and the future of farming seemed to hold little promise. The attitude of many farmers seemed to be "get out of the place what you can and leave the mess for some one else to straighten out." But with the industrial debacle and the actual want which the unemployed industrial worker is experiencing, there seems to be a growing feeling that the old farm isn't such a bad place after all and is worth hanging on to as an anchor to windward if nothing else. The result is that in spite of their present predicament many farmers who had thrown up their hands and quit two or three years ago are now thinking and planning for the future. And a man in that frame of mind can be talked to about his forest land even though you cannot show him an immediate income.

Another favorable sign is the increased recognition on the part of

17

agricultural leaders, including the county agents, that there must be a more discriminating use of land; there must be a greater stability in that use and that there can be no future worth considering unless the awful waste from erosion is checked. Again we have a frame of mind which is favorable to a proper consideration of forestry as a permanent land use. Without the support of agricultural leaders the forester can accomplish little in the way of putting the farm forest in order. He is after all an outsider, so far as the conventional workings of the average farmers mind is concerned. His approach must be through the avenues to which the farmers look for guidance.

For the coming year it is planned to follow much the same plan as that outlined for the past year. It will consist largely of

A. Forest Improvement.

(1) Use of the thinning, weeding and culling principle in the removal of such products as fuelwood, pulpwood, state bolts, etc.
(2) Fencing out livestock.

B. Systematic harvesting of the natural crop.

(1) Securing a regular income from the farm woods.
(2) Profitable occupation for slack season labor.
(3) Provision for future crops through natural agencies.

C. Planting where it is financially possible.

(1) Reclamation of idle or unprofitable land.
(2) Control of erosion.
(3) Locust for home supply of fence posts.

D. 4-H Club Work.

(1) Study of trees.
(2) Improvement cutting.
(3) Planting.
(4) Estimating timber (a new project for boys who have completed 1 and 2.

E. Market Study.

(1) Continue market reports (adjust supply to demand)
(2) New outlets for farm forest products.

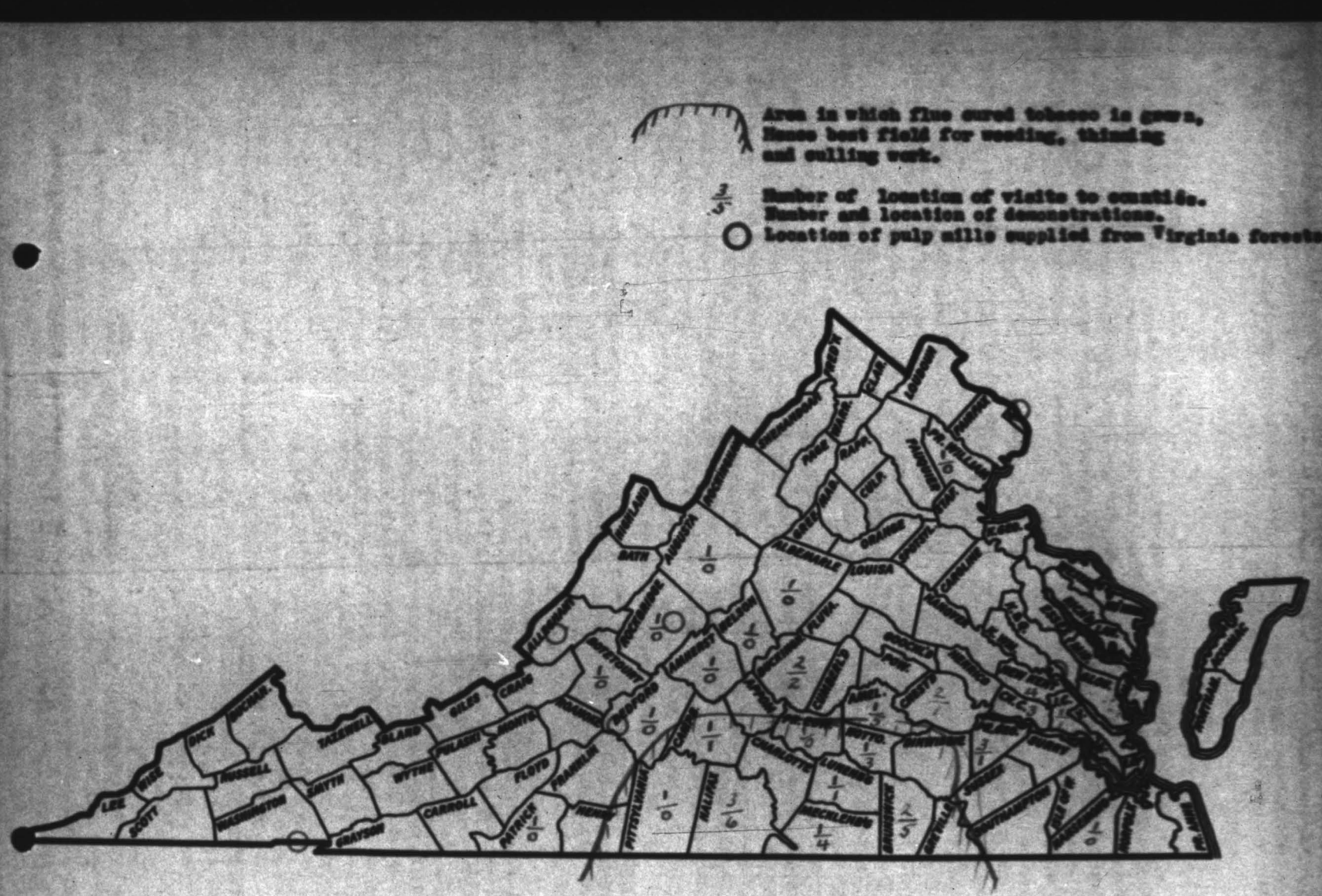
The amount of improvement work that can be undertaken in connection with the removal of salable products will, of course, depend upon market conditions. Just now it is not particularly encouraging. Plans are being worked upon in cooperation with the farm management specialist whereby better forest products records will be provided for in farm account records. It is hoped that a definite program for land classification may be worked out during the coming year and be ready for presentation to the next general assembly.

Calendar of Field Work.

Month	Agents Visited	Days.	Meetings Addressed	Attendance	4-H Clubs
Dec. 31					
Jan. 28	4	11	17	1450	8
Feb.	5	14	8	220	2
Mar.	3		4	90	
Apr.	2	2	2	35	1
May	5	8			
June	3	1			1
July	5	1			1
Aug.	6		1	20	
Sept.		Mostly sick leave.			
Oct.	2	2			
Nov.	3	1			2
	38	54	33	1815	6

Distribution of Field Work

County	No. Visits	Days.	County	No. Visits	Days.	County	No. Visits	Days.
Albemarle	1	0	Campbell	1	1	New Kent	4	5
Amelia	1	3	Chesterfield	2	1	Nottoway	1	4
Amherst	1	0	Halifax	3	6	Patrick	1	0
Augusta	1	0	James City	1	1	Pr. Edward	1	0
Bedford	1	0	Lunenburg	1	1	Pr. Geo.	3	1
Botetourt	1	0	Mecklenburg	1	4	Pr. Wm.	1	0
Brunswick	2	5	Nansemond	1	0	Rockbridge	1	0
Buckingham	2	2	Nelson	1	0			


Area in which flue cured tobacco is grown. Hence best field for weeding, thinning and culling work.
Number of location of visits to counties.
Number and location of demonstrations.
Location of pulp mills supplied from Virginia forests.
LEE
WISE
DICK
RUSSELL
WASHINGTON
SCOTT
SMYTH
GRAYSON
TAZEWELL
BLAND
WYTHE
CARROLL
GILES
PULASKI
FLOYD
CRAIG
MONTG.
FRANKLIN
PATRICK
ALLEGHANY
BOTETOURT
ROANOKE
BEDFORD
CAMPBELL
PITTSYLVANIA
HENRY
BATH
AUGUSTA
ROCKBRIDGE
AMHERST
NELSON
ALBEMARLE
LOUISA
FLUVA
GREENE
ORANGE
MADISON
CULP.
CLARKE
FREDERICK
SHENANDOAH
PAGE
WARREN
FAUQUIER
LOUDOUN
PR. WILLIAM
PRINCE WM.
STAFFORD
KING GEO.
ESSEX
KING WM.
KING & QUEEN
CAROLINE
SPOTSYLVANIA
HANOVER
GOOCHLAND
POWHATAN
CHESTERFIELD
CHARLOTTE
LUNENBURG
MECKLENBURG
BRUNSWICK
DINWIDDIE
PRINCE GEORGE
SURRY
SUSSEX
NORTHAMPTON
ACCOMAC
NORFOLK
ELIZ. CITY
NEW KENT
JAMES CITY
YORK
WARWICK
NEWPORT NEWS
HAMPTON
CHESAPEAKE
PORTSMOUTH
SOUTHAMPTON
ISLE OF WIGHT
GLOUCESTER
MATHEWS
MIDDLESEX
LANCASTER
NORTHUMBERLAND
RICHMOND
WESTMORELAND
KING GEORGE
STAFFORD
PRINCE WILLIAM
FAIRFAX
ARLINGTON
ALEXANDRIA
LOUDOUN
FAUQUIER
CULPEPER
RAPPAHANNOCK
MADISON
GREENE
ORANGE
ALBEMARLE
FLUVANNA
GOOCHLAND
POWHATAN
CHESTERFIELD
AMELIA
NOTTOWAY
PRINCE EDWARD
CUMBERLAND
BUCKINGHAM
APPOMATTOX
CAMPBELL
BEDFORD
BOTETOURT
ROANOKE
FRANKLIN
PITTSYLVANIA
HENRY
CHARLOTTE
LUNENBURG
MECKLENBURG
HALIFAX
PATRICK
FLOYD
CARROLL
GRAYSON
SMYTH
WASHINGTON
WYTHE
BLAND
TAZEWELL
RUSSELL
SCOTT
LEE
WISE
DICK
MCDOWELL
MERCER
SUMMERS
MONROE
GILES
CRAIG
ALLEGHANY
BATH
HIGHLAND
PENDLETON
HARDY
HAMPSHIRE
MORGAN
BERKELEY
JEFFERSON
CLARKE
FREDERICK
SHENANDOAH
PAGE
WARREN
FAUQUIER
LOUDOUN
PR. WILLIAM
PRINCE WM.
STAFFORD
KING GEO.
ESSEX
KING WM.
KING & QUEEN
CAROLINE
SPOTSYLVANIA
HANOVER
GOOCHLAND
POWHATAN
CHESTERFIELD
CHARLOTTE
LUNENBURG
MECKLENBURG
BRUNSWICK
DINWIDDIE
PRINCE GEORGE
SURRY
SUSSEX
NORTHAMPTON
ACCOMAC
NORFOLK
ELIZ. CITY
NEW KENT
JAMES CITY
YORK
WARWICK
NEWPORT NEWS
HAMPTON
CHESAPEAKE
PORTSMOUTH
SOUTHAMPTON
ISLE OF WIGHT
GLOUCESTER
MATHEWS
MIDDLESEX
LANCASTER
NORTHUMBERLAND
RICHMOND
WESTMORELAND
KING GEORGE
STAFFORD
PRINCE WILLIAM
FAIRFAX
ARLINGTON
ALEXANDRIA
LOUDOUN
FAUQUIER
CULPEPER
RAPPAHANNOCK
MADISON
GREENE
ORANGE
ALBEMARLE
FLUVANNA
GOOCHLAND
POWHATAN
CHESTERFIELD
AMELIA
NOTTOWAY
PRINCE EDWARD
CUMBERLAND
BUCKINGHAM
APPOMATTOX
CAMPBELL
BEDFORD
BOTETOURT
ROANOKE
FRANKLIN
PITTSYLVANIA
HENRY
CHARLOTTE
LUNENBURG
MECKLENBURG
HALIFAX
PATRICK
FLOYD
CARROLL
GRAYSON
SMYTH
WASHINGTON
WYTHE
BLAND
TAZEWELL
RUSSELL
SCOTT
LEE
WISE
DICK
MCDOWELL
MERCER
SUMMERS
MONROE
GILES
CRAIG
ALLEGHANY
BATH
HIGHLAND
PENDLETON
HARDY
HAMPSHIRE
MORGAN
BERKELEY
JEFFERSON

12,982

4-H FORESTRY RECORD.

Name of Member - - - - - - - - - - - Address - - - - - - - - - - - -

Name of Club - - - - - - - - - - - - County - - - - - - - - - - - - -

PROJECT: Hand planting a Forest

SOIL: (Type, slope, exposure, condition, etc.) - - - - - - - - - -

- -

HISTORY OF AREA -

REASON FOR REFORESTING -

VALUE OF LAND -

KIND OF PLANTING STOCK USED - - - - - - - - - - - - - - - - - - -

SOURCE OF PLANTING STOCK -

METHOD OF PLANTING -

DATE OF PLANTING -

NUMBER OF ACRES - - - - - - - - - - COST PER ACRE - - - - - - - - -

FINANCIAL STATEMENT

Cost of planting stock - - - - - - - - - - - -

_____ Hours labor @ 15¢ per hour - - - - - - - - - - -

Hired help (actual cost) - - - - - - - - - - - -

Total cost - - - - - - - - - - - - - - - - - -

Number of trees living and record of growth

	July 1	Oct. 1	end of 2nd. year	end of 3rd. year
% living				
Avr. growth				
Damage				

4-H Forestry Record Planting Forest Improvement

12,982

4-H FORESTRY CLUB.

Membership - Open to boys and girls of club age (10 to 20 years)

Purpose - To instruct boys and girls in the practice of tree planting as it is used to reforest unprofitable farm land.

Why? (1) Put to its best use all land which cannot be profitably farmed.
(2) To provide fuel, fence posts and lumber for use about the farm.
(3) To furnish shade in the summer and a wind break in the winter.
(4) To save uplands from washing and bottomlands from being covered up with debris washed down from the hills.
(5) To beautify the farm and make it a better place to live.

Where? Good farm management calls for wise use of all land on the farm. Land which will grow profitable field crops is agricultural land. There remains on almost every farm land which is non-agricultural (rough, rocky, and steep land) and this should be growing timber.

What? All dry land in Virginia will grow some kind of useful tree. Soils which have been depleted by bad farming and erosion will not grow any of the worth while hardwoods except locust. Pines will thrive where most hardwoods would starve. The following is offered as a general guide in selecting the proper species:
(1) Where erosion has reached the gully stage, or where fence posts are desired plant black (or yellow) locust.
(2) On loose soils in the eastern part of the state plant loblolly pine and in the western part of the state plant white pine.
(3) On clay soils plant short leaf pine.

How? Planting stock is furnished by the Virginia Forest Service from its Forest Nursery near Charlottesville. To order trees secure an application blank from your County Agent. Fill out this blank carefully and return it to the County Agent. He will see that your order is taken care of. Instructions for planting are supplied with all seedlings secured from the State Forest Nursery. A spacing of 6½ feet each way calls for 1000 trees per acre and gives good average results.

Club Requirements - Each member will be required to do the following work:-
(1) Plant not less than 1000 trees in forest formation.
(2) Keep records of cost, survival and growth rate.
(3) Submit a report to the County Agent by November 1st. according to the form on the other side of this sheet.
(4) Submit a story telling how you enjoyed the project, what other people thought of it, whether it turned out as you expected or any other item of interest which came up in connection with the project.

12,993

4-H FORESTRY RECORD

Name of Member _____ Address _____

Name of Club _____ County _____

PROJECT: Forest Improvement - By common sense use of the axe.

SOIL: (Type, slope, exposure, condition, etc.) _____

_____

HISTORY OF AREA: _____

_____

VALUE OF LAND: _____

CHARACTER OF PRESENT STAND: _____

AMOUNT AND KIND OF MATERIAL REMOVED _____

DISPOSITION OF MATERIAL REMOVED: _____

RANGE IN SIZE OF TREES CUT: _____ TREES LEFT: _____

DATE WORK ON PROJECT STARTS: _____ DATE COMPLETED _____

NUMBER OF HOURS WORKED: _____

FINANCIAL STATEMENT

Material removed _____

Value of material removed _____

Total cost (Team and hired help, if any) _____

Labor income or profit _____

4-H Forestry Record
Forest Serv.

12,993

4-H FOREST CLUB

(Forest Improvement Project)

Membership - Open to boys of club age (10 to 20 years)

Purpose: To demonstrate two forestry principles.
(1) Thinning and weeding the forest crop.
(2) How a partial harvest may be taken in such a way as to leave the forest better for the cutting.

Why? We thin trees for the same reason we thin corn; so the better plants may have room to develop to the best advantage.
We weed forests for the same reason we weed other crops; so that all of the plant food and moisture available may go to the crop plants.
We thin and weed the forest in order to utilize material which would otherwise be lost through decay, as well as to improve the forest.
Most cut-over forests have been "topped" until they contain little but cull material. These culls must be "weeded out" to give better trees a chance to grow.

There? The farm woods can be thinned and weeded at a profit, whereas a commercial forest can seldom make the operation pay.
In the farm woods the work can be done by farm labor during slack seasons and the material used on the farm.
The farm woods should be thinned and weeded regularly so that the final crop may consist of a full stand of quality trees.

How? By using your head as well as your arms when you swing an axe.
Where two trees are trying to grow in a space large enough for only one, remove the least promising. The inferiority may consist of -
(1) The wrong kind of a tree (gum, black jack, oak, beech, etc).
(2) Injury that has left a wound, or allowed rot and insects to enter.
(3) Being so long stunted that there is small chance of recovery.
(4) Poor form:- limby, crooked, forked or short and full of knots.
(5) It may be that there are merely too many trees and some of them must go. In that case leave the ones which look best.

Requirements - Each member will be required to:

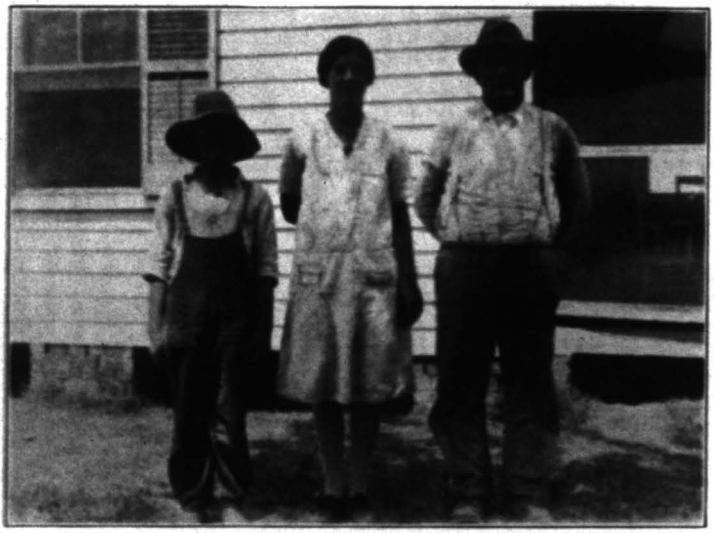
(1) Thin and weed not less than one quarter acre of woodland (A quarter is 35 yards square).
(2) Stack and measure (or count) the material removed.
(3) Submit a report to the County Agent by November 1st. in accordance with the form on the other side of this sheet.
(4) Measure plot and prepare a sketch showing its size, shape and location.
(5) Submit a story of your project - how you liked it, what other people said about it, whether it turned out as you expected, or any other item of interest.

Bulletin No. 124 September, 1931

Farm Forestry: A Concrete Example

BY

WILBUR O'BYRNE, *Extension Forester*



A Virginia farmer who makes a living on his farm and uses his woods to get ahead

VIRGINIA AGRICULTURAL AND MECHANICAL COLLEGE AND POLYTECHNIC INSTITUTE
AND THE UNITED STATES DEPARTMENT OF AGRICULTURE, COOPERATING
EXTENSION DIVISION, JNO. R. HUTCHESON, DIRECTOR
BLACKSBURG, VIRGINIA
DISTRIBUTED IN FURTHERANCE OF THE ACTS OF CONGRESS OF MAY 8 AND JUNE 30, 1914

Assistance That Can Be Rendered by the Extension Division of The Virginia Polytechnic Institute

The Extension Division carries the Agricultural College and United States Department of Agriculture to the farmer and farm home. It endeavors to meet their problems in soils and crops, horticulture, dairying, live stock, poultry, agricultural engineering, home economics, agricultural economics, and community development. This is done by personal visits, meetings, and correspondence of County Farm and Home Demonstration Agents and Specialists, through boys' and girls' and women's club work, cow testing and purebred live stock and other associations and organizations, and the distribution of bulletins, circulars, newspaper articles, etc.

Application for information or assistance with any farm or home problem should be made to the Director of the Extension Division, Blacksburg, Virginia.

Extension Division Staff

Julian A. Burruss	*President*
John R. Hutcheson	*Director*
W. P. Moore	*Assistant Director*
Miss Maude E. Wallace	*State Agent*
L. C. Beamer	*Asst. Garden Specialist*
W. H. Byrne	*Agronomist*
Miss Janet Cameron	*Food Specialist*
R. G. Connelly	*Dairy Husbandman*
W. H. Daughtrey	*Asst. Agronomist*
A. L. Dean	*Asst. Poultry Husbandman*
R. W. Dickson	*Assistant Dairy Specialist*
L. B. Dietrick	*Vegetable Garden Specialist*
G. A. Elcan	*Asst. State Boys Club Agent*
K. N. Ellis, Petersburg, Va.	*Asst. Agricultural Economist*
P. L. Fletcher	*Asst. Agricultural Economist*
James Godkin	*Plant Pathologist*
H. H. Gordon	*Asst. Agricultural Engineer*
G. C. Herring	*Animal Husbandman*
Miss Bessie Hodsden	*Asst. Poultry Husbandman*
Miss Hallie Hughes	*State Girls Club Agent*
B. L. Hummel	*Community Organization Specialist*
Kenneth Litton	*Asst. Animal Husbandman*
J. L. Maxton	*Asst. Agricultural Economist*
Mrs. Mary McBryde	*Landscape Garden Specialist*
H. L. Moore	*Poultry Husbandman*
C. A. Montgomery	*State Boys Club Agent*
W. J. Nuckolls, Jr.	*Farm Management Demonstrator*
J. W. O'Byrne	*Forestry Specialist*
G. W. Patteson	*Soil Specialist*
C. W. Pegram	*Dairy Manufacturing Specialist*
E. R. Price	*Editor*
W. P. Sadler	*Asst. Dairy Specialist*
W. D. Saunders	*Cheese Specialist*
C. E. Seitz	*Agricultural Engineer*
Miss Mary B. Settle	*Home Improvement Specialist*
A. C. Seymour	*Asst. Rural Sociologist*
L. E. Starr	*Asst. Animal Pathologist*
Miss Cymbel Taylor	*Clothing Specialist*
A. H. Teske	*Asst. Horticulturist*
D. A. Tucker	*Assistant Horticulturist*
J. A. Waller	*Asst. Agricultural Engineer*
G. H. Ward	*Assistant Agricultural Economist*
J. F. Watson	*Asst. Horticulturist*
H. W. Weatherford, Vernon Hill, Va.	*Bee Specialist*
H. N. Young	*Agricultural Economist*

THE man who has a piece of woodland where during the winter months he cuts his firewood and fencing and a few logs for the repair of buildings and implements, and during certain years when prices are high cuts some logs for the neighboring sawmill, but at the same time looks after the piece of woods, clears it of dead timber and other rubbish, thus keeping out fire and insects, and otherwise makes an effort to keep the land covered with forest — SUCH A MAN PRACTICES FORESTRY.

His forest may be small or large, his ways of doing may be simple and imperfect, the trees may not be the best kind for the particular locality and soil, they may not be as thrifty as they should and could be; but nevertheless here is a man who does not merely destroy the woods nor content himself with cutting down whatever he can sell, but one who cares for the woods as well as uses them, one who sows as well as harvests. HE IS A FORESTER, and his work in the woods is FORESTRY.

FILIBERT ROTH

Farm Forestry: A Concrete Example

By WILBUR O'BYRNE, *Extension Forester*

The Best Poor Land Crop

Approximately half of the land on Virginia farms is either occupied by tree growth or is lying idle because of the lack of such growth. Each census report since 1900 has shown a smaller acreage, both in farms and in the area under cultivation. In 1925 there were 17,210,174 acres included in what the census bureau classes as farms, of which 5,368,188 acres were listed as crop land. In 1930 the corresponding figures were 16,728,620 acres and 5,058,317 acres. Thus, in five years there was recorded a decrease of 481,554 acres in Virginia farm land and a decrease of 309,871 acres in the area under cultivation. And the same thing is taking place in other states.

This gradual but steady decrease in the area under cultivation is easy to understand. Crops that were once regarded as suited only to Virginia and adjoining states are now grown from Canada to Florida and west to Texas.

Improved varieties, modern farm machinery and better cultural methods have increased yields, while automobiles, trucks and tractors, by replacing horses, have forced the production of food and fabric crops on millions of acres

Fig. 1.—A farming section in Eastern Virginia from the air. Notice how the farms are made up of woods and fields intermingled. Each is made more valuable by the presence of the other. Photo by the State Conservation and Development Commission

where horse feed was formerly grown. The result has been an overproduction of many farm crops and correspondingly low prices.

Thoughtful farmers recognize this situation and realize that the only solution is to concentrate farming operations on the more productive lands and to devote the remainder to some crop which makes fewer demands in the way of seed, soil, fertilizer and labor. And in most instances that crop is timber.

A Regular Income from the Farm Woods

A constantly increasing number of farmers are getting a considerable portion of their yearly income from the sale of timber grown on their farms. Others would like to do this but they are at a loss to know just how to go about putting their timber on a crop basis. It is for the benefit of these that this account of the operations of Mr. W. H. Walker down in Gloucester county is presented.

Mr. Walker's problem was similar to that of thousands of farmers. The soil on his open land was shallow and poor; his woods had been stripped of everything for which the former owner could find sale, and he was forced to make a living for his family while he was rebuilding his property. By deep plowing, suitable crop rotations and proper fertilization he has built a productive soil. By good salesmanship he has located and developed a market for the class of material of which he wished to dispose. By good management and hard work he has made the farm yield a good living while he was building it up. This story deals with his woods operations only.

Mr. Walker has had certain markets that are not available to farmers living in all sections of the state, but he has lacked other markets that would have enabled him to carry on his improvement work much more rapidly. It is not the purpose of this publication to suggest that others do the *same things* but that they do the *same kind of thing* he has done. Where his operation has differed from the usual is in the fact that he has given first consideration to the future productive capacity of his forest and has made current income secondary. He has harvested his own timber; first in order to be certain that it was properly done, and second to utilize slack season labor. Finally, he has taken advantage of such markets as there were at hand to dispose of the low grade material that had accumulated in his woods through years of neglect. In brief, he has given to his woods the same kind of careful attention he has given to the cultivated portion of his farm, and he has found it profitable.

Judged by his farming operations alone, Mr. Walker would rank anywhere as a good farmer. Judged by Professor Roth's definition, as it appears at the beginning of this bulletin, he is also a good forester.

How It Was Done

This is the very simple story of how one Virginia farmer has made the timbered portion of his farm contribute its full share to the farm income and at the same time increase in value. There is nothing spectacular about it, nor is it a get-rich-quick scheme, but it may be considered as a splendid example of practical FARM FORESTRY, as contrasted with *commercial forestry, public forestry* or *luxury forestry.*

The farm forest should supply the forest products that are needed on the farm; supplement the farm income through the sale of surplus products; and round out the farm labor year by supplying profitable employment for labor, livestock and equipment during slack seasons. This operation does all three.

The farm as it now stands consists of 58 acres in cultivation (mostly the original homestead) and four woodland areas acquired over a period of eighteen years. For the sake of convenience in describing them and showing how each one has been handled these areas have been designated:

Block "A" —	48	acres of woodland acquired in 1900
Block "B" —	34	acres of woodland acquired in 1905
Block "C" —	26	acres of woodland acquired in 1918
Block "D" —	74	acres of woodland acquired in 1918
	182	acres of woodland
	58	acres of cultivated land
	240	acres, total area of farm

Locating a Market

In considering the possibilities for profit in connection with any crop, the first concern is markets. In this case, most of the trees that were suitable for lumber had been stripped from the land before it came into the hands of the present owner. About all there was left was young growth too small to market in conventional ways, cull trees which were diseased or of poor form, and weed species which the former owners had regarded as valueless. It was necessary, therefore, to locate or develop markets which would take such products as could be made from these inferior trees; trees that could never make good individuals themselves and were interfering with promising young growth.

Products That Could Be Sold Locally

Pound Poles.—Throughout Tidewater Virginia there is a steady and active demand for what are usually termed "pound poles." These poles are cut from tall, slender trees found growing in the familiar pine thickets, and are used by commercial fishermen to support their nets. (Figure 2.) They vary in length according to the depth of the water where the net is to be placed, and in diameter with the kind of bottom in which they are to be set. A pole that is to be *stuck* in the mud need not be as heavy as one that must be *driven* into a hard bottom. The majority of pound poles vary from twenty-five to seventy-five feet in length and from one and one-half to four inches in diameter at the top. Prices range from fifty cents apiece delivered at the water front up to four or five dollars, depending upon the size of the pole and the trading ability of the seller.

Pound poles are gotten out in various ways. Many fishermen cut their own poles during the off season and get out a few for sale. They usually pay the timberland owner so much apiece on the stump and cut what they want. Having no interest in the future productivity of the land, they are apt to cut only the choicest trees, and to cut them without regard to the resulting stand. Many land owners, with the short sighted policy of Americans toward their forests, do little if any better. A few cuttings of this type are apt to leave the woods in such poor condition that it will take years of careful management to return the forest to normal.

On this farm a different system is followed. The poles are sold by the piece delivered to the water front. The owner does the cutting and delivering. Only those trees which can be spared from the stand are cut. Whereas the

Fig. 2.—A pound net in Chesapeake Bay. Pound poles make an excellent market for the slender trees which are removed when pine thickets are thinned. Photo by Virginia State Chamber of Commerce

professional pole cutter is interested in good poles, this land owner is interested primarily in what is left to grow. He wants a full stand of high grade trees, spaced for best growth. Excess trees, inferior species and poorly formed individuals are cut wherever their removal will favor more valuable growth. Those that will make pound poles are sold as such. Those that are too crooked or otherwise defective can always be made into fuel.

Records have not been kept in such a manner as to show the exact number of poles sold each year. The owner states, however, that the smallest number disposed of in any one season was 300, while the greatest was 1,500; that the price range has been from 60 cents to $1.50 per pole; and that he has averaged well over $250.00 per year, cash income, from the sale of pound poles.

Fuel Wood.—Gloucester county has no railroad. Coal must come in by boat and is expensive. Most people, therefore, burn wood. Many of those living in town (especially the fishing communities) own no timberland so must purchase their wood. Some prefer pine, some oak, but the rank and file care little what species they buy just so it is cut to the size they want and is thoroughly seasoned.

With this market at hand and a forest full of weed trees and culls (the result of generations of abuse), Mr. Walker provided himself with a good gasoline driven wood saw (Figure 3) and went after the cordwood business in his community. Whenever a lull came in the farm work, he took such labor

as could be spared and went to the woods. Beech, gum, sourwood, sycamore, maple, birch, hornbean, defective dogwood, oak, and hickory, and injured, diseased, and excess trees of all species, were turned into cordwood and ricked

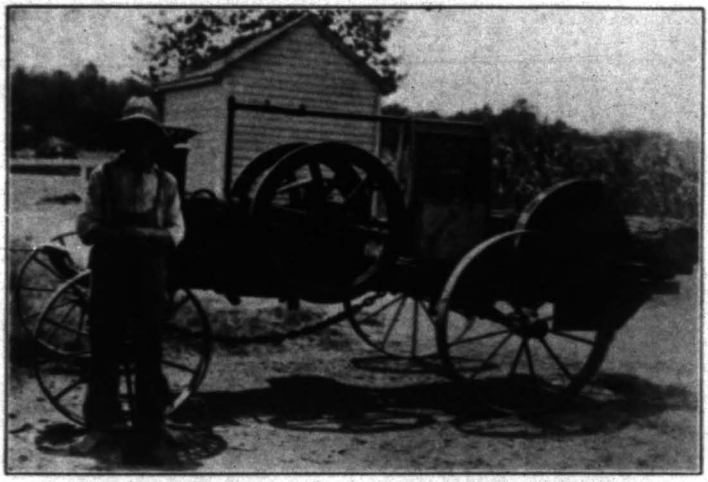


Fig. 3.—A power saw that can be taken into the woods saves handling the wood one time. This outfit has been in use for twenty-two years. Aside from sawing wood, the engine has driven a thresher, ground feed, and supplied power for other jobs. A good outfit that has been well cared for

up along the woods roads to season. When fall and winter came, that wood was sawed to stove length and delivered. At $3.25 per load, fuel wood has brought in an average of over $325.00 per year in addition to what was used on the farm.

Lumber.—Because of the depleted condition of the woods, little saw-timber has been cut except that needed for building and repairs on the farm. This was invariably cut by the owner and hauled by him to a nearby sawmill. Every building on the place (and there is an ample supply of them) is a strictly "home grown" building. In 1901 approximately thirty thousand feet of lumber and timbers were cut for the present residence. In 1903 another thirty thousand was cut for a barn and approximately fifty thousand to sell. Each year since then from two to four thousand feet have been cut for repairs and small construction jobs. This lumber, totaling well over 165 thousand feet, was worth (after allowing $6.00 per thousand for sawing) at least $14.00 per thousand feet board measure, or an average of $77.00 per year for the entire period of thirty years since the forestry operations started. In addition

to this, a sale of $250.00 worth of timber was made in 1930, bringing the average up to approximately $80.00 per year from lumber.

It is interesting to note that this sale of $250.00 worth is the only timber that has been sold on the stump during the entire period of thirty years.

Fig. 4.—This truck delivers cordwood, brings lumber from the sawmill, and does all manner of odd hauling

Railroad Ties.—Five hundred ties were sold one season but did not net enough to warrant further tie operations. Since then a few ties and hardwood logs of tie length have been cut from time to time and traded to sawmill men in payment for sawing the lumber that was needed about the farm. No records have been kept of the tie operations since the first one.

Pulpwood.—For a few years during and immediately following the war poplar and gum pulpwood brought good prices. This offered the first opportunity to get rid of the cull poplar, gum and other bottomland hardwoods that had accumulated in the hardwood portion of the forest. No record was kept of the quantity of pulpwood disposed of, but all the time that could be spared for three or four years went to getting out this type of pulpwood. This operation pretty thoroughly cleared the woods of the cull trees of those species that were salable.

A pulp and paper mill located at West Point consumes large quantities of pine pulpwood. Up to the present this plant has not extended its purchase area to that portion of Gloucester county in which this farm is located, but it is only a question of time until it does. Those pine trees which are too

Fig. 5.—Pulpwood from thinnings. This is a profitable operation where there is a market for pulpwood. It is not yet possible on the Walker farm. Photo by United States Forest Service

large or ill formed for pound poles, but whose removal would benefit the stand, can then be cut and marketed as pulpwood.

The Story of How the Farm Was Built

With this understanding of available markets, let us see how Mr. Walker built up his farm from an original homestead of 60 acres with inadequate buildings to a well rounded farm of 240 acres with all necessary equipment.

The accompanying sketch map (Figure 6) shows how one piece of timberland after another has been added and worked into the regular scheme of farm management.

The fifty-eight acres of cultivated land are made up of a large portion of the original homestead and suitable areas from the various tracts that have been acquired from time to time. It is all in a high state of cultivation, producing crops which compare favorably with the best in the county. To cultivate this land there is a full line of up-to-date and well-cared-for machinery, including a truck, tractor, thrasher, gasoline driven wood saw, feed grinder,

manure spreader, riding cultivator, etc. All equipment is in good repair and protected from the weather by implement sheds, built by the owner from lumber cut on the farm and sawn at nearby sawmills.

Block A.—This tract of 48 acres was acquired in 1900. Two years previously it had been cut over in a sawmilling operation which took all of the

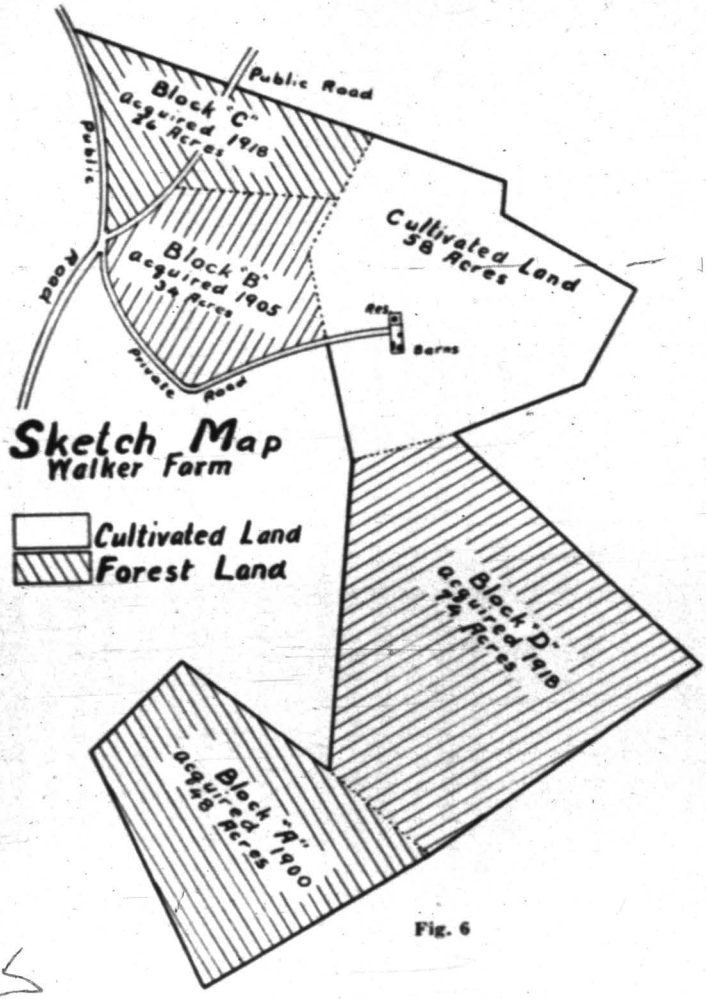


Fig. 6

larger trees, both pine and hardwood. Fortunately, sawmills at that time did not cut such small logs as they did a little later, so that in 1901 when lumber for a new home was needed, there was no difficulty in cutting between thirty and forty thousand board feet for that purpose. In 1903, when a new barn was to be built, eighty thousand feet more of sawlogs were cut and taken to the sawmill. Thirty thousand feet went into the barn; the other fifty thousand were sold to pay for sawing the lumber and for labor employed to build the barn. During 1902 and 1903 something over 500 railroad ties were cut and sold. The returns from these were unsatisfactory, so no further general sales of ties have been made. In addition to the above operations, a few sawlogs have been removed from time to time as lumber was needed about the farm. A few pound poles have been removed almost every year as crowding developed among the young pines, while the laps from these operations together with culls and weed trees of all descriptions have given a steady supply of cordwood for home use and for sale.

Block A is about one-sixth bottomland, where hardwoods are favored and five-sixths uplands, where every effort is made to encourage pines to make up the major portion of the stand. Most of the sawlogs and railroad ties, and a fair share of the pound poles and cordwood listed under financial returns, have come from this block.

In 1906 a severe fire came from the outside and burned about half of this block, but abundant seed trees soon reset the burned areas to pines. Since then no fires have occurred on the entire place. Today the block is well set with young, fast-growing pines, with a considerable amount of larger timber ready to meet any emergency. Each year cordwood and pound poles are cut from some part of this block in the course of thinning and weeding operations.

Block B.—This tract consists of twenty-five acres acquired in 1905 and nine acres of the original homestead. Fifteen acres were in corn 30 years ago but seeded in to a dense stand of pine soon after. This old field pine (Figure 7) now makes up some of the most promising young growth on the farm. It is just coming into sawlog size. Pound poles were first cut 13 years ago and some have been taken out each year since. Pines which were too crooked to make pound poles were taken out, along with undesirable hardwood growth, and marketed as stove wood.

The other 19 acres of this block were typical of the cut-over upland pine forests of eastern Virginia. A few old growth pines escaped the first operation because of poor form or some defect. These scattering veterans reseeded the area and were then removed from time to time as lumber was needed. Some pound poles and a considerable amount of firewood has been taken from this tract; the firewood coming from laps, weed trees (mostly undesirable oaks) and "doty" spruce pines.

Today the entire block is well set to young pines that are kept in a thrifty, fast growing condition by periodic thinning and weeding operations.

Block C.—This block consists of the uncleared portion of a 37-acre tract acquired in 1918. A sawmill, operating in 1906-7, had removed every-

Fig. 7.—The road to market. Block B, to the right, was in corn thirty years ago. Pound poles and cordwood have been sold from this block for the past thirteen years. Note the pile of seasoned cordwood ready to be sawn and delivered

thing that was considered to have value. Defective trees left by the sawmill operator and trees on adjoining land supplied plenty of pine seed so the area is well set with young growth, mostly pine. Pound poles and cordwood have been cut from some portion almost every year since 1918.

Block D.—This tract of 74 acres was acquired in 1918 immediately after having been closely cut. The tract is about one-third bottomland, where hardwoods make up the stand, and two-thirds upland, where pine is the preferred species. In 1906 a severe fire burned about half of this tract, but pine reproduction soon became established on most of the burned area. These young pines are now yielding some pound poles.

When this tract was cut in 1917 beech (of which there was a great deal) was regarded as valueless and left behind. The characteristic form of beech in that section is a short, limby tree with a tremendous spread of very dense crown. Of little or no value themselves, they occupy a great deal of space and shade the ground so heavily that nothing else can grow. On this tract, therefore, the urgent problem has been to get rid of these beech "weed-trees"

Fig. 8a.—Rough, limby beech trees have been cut primarily to encourage the more valuable pine. At the time this picture was taken pine seedlings were already present and growing nicely

Fig. 8b.—Nine years after such a beech tree had been removed. Note the decaying stump entirely surrounded by thrifty young pines. There are hundreds of examples similar to this in Block D

so that young pines could take their place and make better use of the ground. (See Figures 8a and 8b.)

Beech wood, although difficult to work, makes excellent fuel so fuel wood has been the principal product from this block. A few sawlogs and pound poles have been removed from time to time, but each year large quantities of fuel wood have been taken out. Laps, dead stuff, misshapen oaks and other weed trees have made up part of the cut, but beech (cut primarily to favor the more valuable pine) has furnished the bulk of the wood cut from this block. Along wood roads (which are kept open by frequent use) are ricks and piles of body wood and lap wood, cut whenever someone had a little slack time. When fall and winter come the gasoline saw (Figure 3) will be taken to those piles and that wood, now thoroughly seasoned, will be sawn to convenient lengths, loaded directly into a wagon or truck, and delivered to a regular and satisfied customer. Fuel wood coming from this farm is good wood; thoroughly seasoned and cut to a convenient size for stove, fireplace or heater as ordered.

The Story Briefly Told

This record of Mr. Walker's forestry operations is presented in the hope that it may contain suggestions that will help other farmer-timberland owners in their efforts to better fit their woods operations to their farm operations and to make the wooded portions of their farms contribute more fully and more regularly to the farm income.

In discussing what he has been doing, Mr. Walker stated that his idea has always been to make a living on his farm and to use his woods to get ahead. He is succeeding in this to a remarkable degree. That he is a good farmer, his neighbors will all agree. They understand his farming operations. That he is a good forester, this record abundantly shows.

What he has done other farmers can do to a greater or less degree if they will but think of their timber as a crop, and give to it the thought and attention they give to the other crops on their farms.

Financial Returns

In considering the financial returns from these operations it should be remembered that all of the wood sold from this farm, with the exception of a few sawlogs, came from trees which former owners considered worthless. They were trees that might be compared to the weeds and thinnings removed from a corn field when it is hoed. Yet these trees (the weeds, culls and thinnings of the forest crop) have not only paid for the operation but have brought in a gratifying income. The real crop trees remain, to be harvested when they reach maturity. Averaged for the entire thirty-year life of the

operation, the actual cash income from the forested portion of the farm has amounted to:

Product Sold	Average Annual Income	Total Income
Pound poles	$250.00	$7,500
Fuel wood sold (does not include that used at home)	325.00	9,750
Lumber	80.00	2,400
Ties	12.00	350
Pulpwood—no definite records of amount		
	$667.00	$20,000

Forestry Facts Frequently Overlooked

THE greatest value of a forest is not in the accumulation of timber but that it is forever renewable.

There are on almost every farm areas of poor, worn or rough land which can be neither cultivated nor pastured profitably.

Growing timber is the only way to make most of those areas pay taxes; properly handled these areas will contribute regularly to the farm income.

Every farmer finds it necessary to do some work in his woods each year; cutting fuelwood if nothing more.

If, when he is doing that work, he will keep the crop idea in mind and use the same culling principle he applies to his livestock, he can gradually and steadily build it into a valuable and productive property. And if he does this "he is a *forester* and his work in the woods is *forestry*."

13,174

TIMBER MARKET CONDITIONS IN VIRGINIA

June 1932.

The following notes on prices and market trends for various woodland products are intended to supplement and bring up-to-date the information contained in V.P.I. Bulletin No. 276 on Marketing Woodland Products in Virginia. They have been summarized from questionnaires received from representative wood users and dealers by the Virginia Agriculture Extension Division at Blacksburg, Virginia. These reports are issued every four months (Feb., June, Oct.). Copies of the reports and of Bulletin 276, etc. will be sent to any citizen of the state requesting them.

The much talked of and hoped for revival of business remains "around the corner". Prices of most items have suffered still further declines, with no immediate indication of improvement. Most items are now too low to pay even good wages, and the owner who sells under such conditions is merely giving his timber away in order to get an opportunity to work. The men who buy the timber realize this and regret it, but are powerless to change matters. One of the largest operators in the state expressed the general feeling when he said, "We are purchasing logs for less than we can cut them from our own land. I always advise a man to let his timber stand rather than sell it at present prices, but if he will or must sell, we will buy it and pay the best price we can."

This is not the first period of readjustment into which we have boomed ourselves and, after each slump, timber prices have not only come back but have gone to new heights. There is every reason to believe they will do so again. The lumber industry is holding production below sales. Stocks of lumber on hand in the yards of producers, dealers and users are getting low. Railroads have been practicing the strictest economy until their stocks of ties, posts, lumber and timbers are very low and must soon be replenished. The stage is all set for improvement just as soon as there is an increase in business activity.

The farmer who limits his cutting to an amount sufficient only for his most urgent cash needs will be thankful at some future date that he reserved the bulk and the best of his timber for a better market. And the farmer who cuts his choicest trees to be used for a purpose for which inferior trees would serve, is selling his birthright for a mess of pottage.

Again, the timberland owner is urged to cut no trees for sale until he has a definite contract covering sale of the material.

Timber Market Conditions
Issued 3 times year.

EXCELSIOR WOOD. Most of the excelsior plants are running on a part time schedule. Prices reported range from $6.00 at the plant down to $4.50 f.o.b. cars at point of shipment, with indications that the top price may be dropped to $5.00. The above prices are all for peeled pine in long cords of 180 cubic feet. Winter cut and peeled wood of fast growth and soft texture is preferred by the excelsior industry.

STAVE WOOD. Pine stave wood has held its own at $3.00 per cord delivered at the mill for 160 cubic feet of unpeeled wood.

PULPWOOD. Peeled pine is being bought at prices ranging from $4.50 to $5.50 per cord of 160 cubic feet of stacked wood. Price range indicated variation in quality of wood as well as location. Unpeeled pine is quoted at prices ranging from $3.75 to $4.25 at the mill for cords of 160 cubic feet and from $2.75 to $3.50 per cord at railroad or landing. Some poplar is being purchased at $7.00 per cord at the plant for 160 cu. ft. of peeled wood.

Most pulp and paper plants prefer winter cut wood of slow growth. This makes pulpwood an ideal side line crop for most farms. Cutting can be done in the winter when farm work is slack, while the slow growing and stunted trees can be taken out in the process of thinning crowded stands; leaving the better ones to grow into some more valuable product to be sold at a later date when the market is better.

TANNING MATERIALS. Most plants are carrying excessive stocks and restrict buying to the territory close to the plant. No sumac will be purchased this year unless there is an unexpected improvement in the market for extract. Chestnut Wood is quoted at prices ranging from $3.60 per cord of 160 cu. ft. f.o.b. cars to $4.40 delivered at the plant. Bark is not being purchased at present.

HANDLE STOCK. Hickory is quoted at prices ranging from $7.00 to $10.00 per cord of 128 cubic feet, or from $15.00 to $25.00 per M. feet log scale in the log, depending on grade. Ash is quoted at $8.00 per cord, or $20.00 per M. feet in the log. Oak is quoted at $7.00 to $8.00 per cord, or $15.00 to $18.00 per M. feet.

INSULATOR PIN STOCK. Locust is quoted at from $12.00 per cord of 152 cubic feet to $12.00 for 128 cubic feet. When purchased by the board foot, the price quoted is $26.00 per M. feet. Oak is quoted at $15.00 per M. feet.

SAWLOGS. Sawlogs are usually purchased on grade. Pine, gum, oak, and ash bring about the same and range from $8.00 to $16.00 per M. feet log scale, with most of them falling within the $9.00 to $10.00 grades. Maple and poplar are quoted approximately $2.00 higher. Pine intended for crating furniture is usually purchased by the cord at about $3.50 per cord of 128 cubic feet.

VENEER LOGS. There are two veneer log markets, one for fancy and finish veneers such as are used in furniture, cabinets and paneling, the other for plywood and containers such as berry boxes, vegetable crates, hampers, and veneer boxes and barrels. One plant in Southwest Virginia has been paying as high as $40.00 per M. feet log scale for selected oak logs; $25.00 per M. feet for poplar and birch; and $22.50 for maple and chestnut. In the furniture territory, poplar, oak and gum are quoted at prices ranging from $8.00 per M. feet for #2 logs to $20.00 for best grade #1 logs. Most of the package veneer is made in the eastern part of the state and uses poplar, gum and pine at prices ranging from $8.00 to $15.00 per M. feet log scale for poplar and gum and $10.00 to $13.00 for pine. One plant which manufactures specialties from high grade Bowl Gum quotes a price of $21.00 per M.

LUMBER. Lumber is usually purchased on grade, though some purchasers buy mill run at a figure which is expected to come to about the same thing. Wide widths and thick stock usually bring from $2.00 to $4.00 per M. over inch lumber and narrow widths. Oak is quoted at from $11.00 to $15.00 for #2 common and $20.00 to $25.00 for #1 common. One large dealer quotes $15.00 average. Poplar ranges from $10.00 for #2 common to $18.00 for #1 common. Hickory and Sycamore lumber have a limited market but are quoted at $18.00 for #1 common. Walnut in small quantities ranges from $25.00 to $50.00 per M. feet.

TIES. Ties are still very slow sale with the railroads purchasing their absolute needs from dealers. Since most of these handle treated ties only, mixed oak is moving better than white oak. There is no demand for switch ties and very little for the smaller size railroad ties. Eighty cents is the top price quoted for number five white oak ties with seventy cents more nearly the average.

MINE TIMBERS. Mine timbers hold steady with split props quoted at 2¢ to 3¢ per foot, ties at 14¢ to 20¢ each and brattice lumber at $20.00 per M. ft. b.m.

A tree which is left standing (if it is a good tree) will grow and increase in value. One which is cut down commences to deteriorate immediately.

During periods of slow sale weather stained and defective forest products are a drug on the market. Buyers want fresh cut bright wood.

Sell your timber if you can and must, but sell it before you cut it and sell only enough to meet your most urgent cash needs. Not only will it be worth more in a few years but surpluses help to keep prices down.

13,640

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Va. A. & M. College & Poly. Inst. Virginia Forest Service & U.S.D.A. Coop.
EXTENSION SERVICE

December, 1932.

A Helping Hand to the Less Fortunate!

In these days of distress the cry for assistance goes up from all quarters, but what to do is the question. If it were a simple problem, it would have been solved long ago. Perhaps one difficulty has been that we have all expected some one else to perform a miracle, rather than that each one look around and see what he could do to help himself, or a less fortunate neighbor.

We, of the Agricultural Extension Service, are most concerned with the farmers' problems, and heaven knows they are bad enough, but are we, and the farmers we work with, doing our bit to help out an even less fortunate neighbor? I refer to the town or city man or the transient laborer who is without a job.

There are in almost every town, families which are without adequate fuel and in which there are able-bodied men who are without regular work. And there are, in the vicinity of those same towns, farmers who own woods which would be benefited by thinning and culling, but who have no money with which to employ labor. If these two groups could be brought together in a spirit of cooperation, both would benefit. The town man would get his fuel, and pay for it by cutting on shares. The farmer would get his own wood cut for nothing, and at the same time have a portion of his woodland put into good, productive condition.

Details should not be difficult to work out. Relief organizations are in contact with those needing aid. County agents are in contact with the farmers. And in most cases they are already working together. When an able-bodied man appeals for help, instead of ordering a ton of coal the welfare worker could supply him with an axe and send him to the closest cooperating farmer. The wood can be divided in any manner that seems fair. As a starter it is suggested that it be divided three ways: one part going to the landowner, one part to the man who cuts it, and the third part to whoever hauls it to the place it will be used. The county agent, in addition to arranging for the cooperation, must provide instruction for the farmer in order that the cutting may be done properly. Such instruction is available through the forestry department.

Comparative Fuel Value of Wood and Coal

Pound for pound, coal is superior to wood as a fuel, but:
One cord of Hickory weighing 4500 lbs. is equivalent to 1 ton of coal
One cord of White oak weighing 4300 lbs. is equivalent to 1 ton of coal
One cord of Pine wood weighing 3500 lbs. is equivalent to 3/4 ton of coal and so on. The heavier the wood the greater its fuel value.

Prepared by
Wilbur O'Byrne,
Extension Forester,
Blacksburg, Va.

Sample of Sheet Issued monthly.

13,330

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Va. A. & M. College & Poly. Inst. Virginia Forest Service & U.S.D.A. Cooperating
EXTENSION SERVICE

Farm Forestry Work
Sept. 1932.

Dying Oak Trees

Oak timber throughout a large portion of Virginia is seriously menaced by an insect known as the two-lined chestnut borer. Thousands of oak trees of all ages have already been killed, especially in those sections where the forest tent caterpillar has been active. This insect normally works under the bark of chestnut trees but extends its activities to oak trees when they have been weakened. The last three years have been dry. On top of this, the forest tent caterpillar has defoliated most of the trees over extensive areas, and oaks have been the greatest sufferers. In their weakened condition these oaks fall an easy victim.

The adult form of the insect is a slender, almost black, beetle about three-eights of an inch long. These fly in May and June and deposit their eggs in crevices of the bark. The grubs which hatch from these eggs work under the bark, grow to about half an inch in length, are quite slender, and have flattened heads. They excavate long, twisting galleries which, when sufficiently numerous, girdle the tree, killing everything beyond that point. The grubs spend the winter in the bark, change into the beetle form in the spring, and come out to start another brood in May or June.

So far as known, nothing can be done to save a tree after it starts to die. Valuable shade trees, which are still alive, should be fed and watered, where this is possible; to increase their vigor, but it is impractical to do anything for forest trees except to guard them against all forms of injury. As a precaution against further damage next year, this treatment is recommended: Select and mark all trees that die during the summer and fall so they may be readily located after the leaves have fallen. Cut all marked trees and turn them into lumber or cordwood. Burn all slabs, large limbs, and those sticks of wood containing bark, by the first of May. Lumber and sticks of wood containing no bark may be kept indefinitely; they contain none of the insects. If no remedial measures are taken, all oak timber in the stricken area is in grave danger.

Tree Labels

J. B. Lewis, cooperating with the County Garden Club, has just completed labeling the different species of trees growing in the Amelia county court house yard. The labels proper consist of narrow strips of aluminum on which the names of the trees are embossed in raised letters. These strips are mounted on small boards by means of light brads and the boards are nailed to the trees. By nailing the board at top and bottom, the tree can grow without tearing the labels loose at one end. Painting or staining the boards a suitable color increases visibility and adds to the life of the board.

Most of the work in such a project might well be done by the agricultural high school students as a part of their shop work. It would familiarize them with the accepted name of local trees, teach them something of the way a tree grows, and leave something of value in the community.

Prepared by
Wilbur O'Byrne,
Extension Service,
Blacksburg, Va.

13,562

Stokes

TENTATIVE OUTLINE OF EXTENSION ACTIVITIES
FOR THE
DEPARTMENT OF FORESTRY
1933

A. <u>Forest Improvement</u>

1. By use of the thinning, weeding and culling principle <u>whenever cutting operations are in progress;</u> especially when taking out:

a. Pulpwood, stave bolts, etc.
By taking a given amount of pulpwood from two or more acres, in the form of a thinning and culling operation, instead of clear cutting 1 acre, the same amount of income may be secured, but instead of 1 acre of ruined forest land the owner has two or more acres thinned and culled and in shape for maximum production. This project is suitable only where pulpwood or similar products can be sold.

b. Fuelwood - both for home use and for sale.
Every natural forest contains trees which will make perfectly acceptable fuelwood now but which will make nothing better if they are left standing a hundred years. Fuelwood is cut every year and on almost every farm. If these thinnings, weeds and culls are utilized to make that fuelwood, not only is nothing sacrificed but the area is left in shape for increased production. This project is applicable on every farm where wood is used as a fuel.

c. Fluewood -
Like stove wood, getting out flue wood offers an exceptional opportunity to clear the forest of unprofitable growth in order that more promising individuals may have a better chance to develop into a salable product. And the best part of it is that doing so involves little or no additional labor, merely a little thought. This project is applicable to the bright tobacco section only.

2. By fencing out live stock and giving the woods a chance. It is out of the question to grow grass and trees on the same area. Usually both are failures. This project is applicable in Valley, live stock and dairying sections.

3. As a 4-H project.

B. <u>Planned harvesting</u>

1. Making provision for future crops through natural agencies.
   a. Leaving suitable seed trees.
   b. Partial cuttings (overlapping with A - 1 - a)
2. Securing a regular or periodic income in place of the old feast and famine system.
3. Supplying profitable occupation for farm labor, work stock and equipment during seasons of slack work on the farm.

C. <u>Planting</u> where natural reseeding fails to give a satisfactory stand.

1. To return to production lands now lying idle - a burden on the owner and the county, and usually washing away.

Plantation with this next year each...

2. To control or prevent erosion.
3. To insure a home supply of high class fence posts.
4. For windbreaks in trucking section.
5. As a 4-H project. The Virginia Forest Service will supply free of charge up to 1,000 seedling trees each to 4-H club members selecting this project.

D. Marketing.

1. Continue market reports.
2. Work for cooperation of purchasers in making their timber supply policy encourage good forest practice.
3. New outlets for farm forest products.