Code of Ethics

The purpose of these canons is to formulate guiding principles of professional conduct for foresters in their relations with each other, with their employers, and with the public. Their observance of these canons secures decent and honorable professional and human relationships, establishes enduring mutual confidence and respect, and enables the profession to give its maximum service.

Professional Life

1. The professional forester will utilize his knowledge and skill for the benefit of society. He will co-operate in extending the effectiveness of the forestry profession by interchanging information and experience with other foresters, and by contributing to the work of forestry societies, associations, schools and publications.

2. He will advertise only in a dignified manner, setting forth in truthful and fair language the services he is prepared to render for his prospective clients and for the public.

Relations With the Public

3. He will strive for correct and increasing knowledge of forestry and the dissemination of this knowledge, and will discourage and condemn the spreading of untrue or exaggerated statements concerning forestry.

4. He will not issue statements, criticism, or arguments on matters connected with public forestry policies, without indicating at the same time, on whose behalf he is acting.

5. When serving as an expert witness or acting as an expert in court, he will scrupulously give full credit to others, and will not misrepresent or distort their statements.

6. He will refrain from expressing publicly an opinion on a technical subject, unless he is informed as to the facts relating thereto, and will not distort or withhold data of a substantial or other nature for the purpose of substantiating a point of view.

Relations With Clients, Principals and Employers

7. He will be loyal to his client or to the organization in which he is employed and will faithfully perform his work and assignments.

8. He will present clearly the consequences to be expected from deviations proposed if his professional forestry judgment is overruled by nontechnical authority. In cases where he is responsible for the technical adequacy of forestry or related work.

9. He will not voluntarily disclose information concerning the business affairs of his employers, principals or clients, which they desire to keep confidential, unless express permission is first obtained.

10. He will not, without the full knowledge and consent of his client or employer, have an interest in any business which may influence his judgment in regard to the work for which he is engaged.

11. He will not, for the same service, accept compensation of any kind, other than from his client, principal, or employer, without full disclosure, knowledge and consent of all parties concerned.

12. He will engage, or advise his client or employer to engage, other experts and specialists in forestry and related fields whenever the client's or employer's interest would be best served by such actions, and will co-operate freely with them in their work.

Relations With Professional Foresters

13. He will at all times strive to protect the forestry profession collectively and individually from misrepresentation and misunderstanding.

14. He will aid in safeguarding the profession against the admission to its ranks of persons disqualified because of lack of good moral character or of adequate training.

15. In writing or in speech he will be scrupulous to give full credit to others, in so far as his knowledge goes, for procedures and methods devised, discovered and ideas advanced or aid given.

16. He will not intentionally and without just cause, directly or indirectly injure the reputation or business of another forester.

17. If he has substantial and convincing evidence of unprofessional conduct of a forester, he will present the information to the proper authority for action.

18. He will not compete with another forester on the basis of charges for work by underbidding through reduction of his quoted fee after being informed of the fee quoted by a competitor.

19. He will not use the advantages of a salaried position to compete unfairly with another forester.

20. He will not attempt to supplant another forester in a particular employment, after becoming aware that the latter has been definitely engaged.

21. He will not review the work of another forester, for the latter's employer, without the other's knowledge, unless the latter's connection with the work has been terminated.

22. He will base all letters of reference or oral recommendation on a fair and unbiased evaluation of the party concerned.

23. To the best of his ability he will support, work for, and adhere to the principles of the merit system of employment.

24. He will not participate in soliciting or collecting financial contributions from subordinates or employees for political purposes.

25. He will uphold the principle of appropriate and adequate compensation for those engaged in forestry work, including those in subordinate positions, as being in the public interest and maintaining the standards of the profession.

(ADOPTED BY THE SOCIETY OF AMERICAN FORESTERS) 1948
The
Ames Forester

1950
VOLUME 37

Published Annually
by
THE FORESTRY CLUB
at
IOWA STATE COLLEGE
ACKNOWLEDGEMENT

We, the staff of the AMES FORESTER of 1950, wish to express our sincere appreciation to the students, faculty and alumni whose cooperation made the preparation of this issue a pleasure.

The Purpose of this annual is to provide a medium of contact between our school, other forestry schools, our alumni, and all those interested in the profession of forestry.
Dedication

The Ames Forester Salutes Its Alumni

This year forestry is in the ascendant. Our alumni, who
are in the field carrying on under the new order of things,
have for us a special significance: They represent the ability
to rise to emergency, to master difficulty. This ability is
reflected upon us, the undergraduates. It is our potential
heritage, for we and our alumni are both descending from
the same Institution.

The Ames Forester dedicates this publication to all
its alumni—who have founded and maintained our traditions.
# Table of Contents

Frontispiece—Code of Ethics .......................... 1
Acknowledgement ........................................... 4
Dedication .................................................. 5
Fifty Years of Forestry on Private Lands in New England—
  V. PIZZANO ................................................. 9
The Gum Naval Stores Industry of Dixie—E. GRENEKER .... 18
Private Forest Management in the Lower South—
  W. A. DUERR & W. E. BOND ............................ 32
Woodlots in the Tall Corn State—R. GETTY .................. 48
Fifty Years Progress in Managing Ponderosa Pine
  in the Pacific Northwest—C. O. BORSTING ................. 58

Department
  Faculty .................................................. 68
  Seniors ................................................... 71
  Juniors ................................................... 88
  Sophomores .............................................. 90
  Freshmen ................................................ 92
  Summer Camp ............................................ 95
  Forestry Club .......................................... 107
  Ames Forester Staff .................................... 117
  Honors Day ............................................. 118
  Holst Tract Activities .................................. 119

Alumni
  Prof. Hartman Speaks .................................. 120
  Afield with the Alumni .................................. 123
  Alumni Directory ...................................... 125
Patrons

J. M. Aikman  Ralph H. Hughes
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The financial success of this publication is due largely to the
above persons. We thank them for their generous support.
Fifty Years of Forestry on Private Lands in New England

By VINCENT PIZZANO

NEW ENGLAND, to most people in the United States, means a section of the country rich in the early history of our country and an area that is heavily populated, with many industrial cities. Little thought is given to its forests. They may be surprised to find that the major portion of New England land area is forest (Table 1). Seventy-seven per cent is forest land compared to 33 per cent in the United States as a whole.

The forests are characterized by complex and diverse conditions of tree cover, soil and topography. Four major forest types are found in New England. In the southern part is found the central hardwoods, the oak-hickory type mostly second growth, and used chiefly for ties and fuelwood. White pine is the chief saw timber in the central region, interspersed with the spruce-fir, and the northern hardwoods, the birch, beech, maple. Northern New England is largely spruce-balsam fir, used in the main for the vast paper and pulp industry.

Ninety-five per cent of the forest land is privately owned, compared to 75 per cent in the rest of the country. The ownership of these forests is characterized chiefly by a large number of small owners and residents of the smaller communities. Twenty-two per cent of the forest lands is in farm woodlots, 38 per cent is owned by non-farmer owners, and 40 per cent by industrial holders. (Tables 2 and 3).

At the turn of the century timber was still being "mined." With the exception of land clearing, cuttings were more or less "selective" with the removal of the large sawlogs of the species desired. As the demand for lumber increased the forests were cut over and over again utilizing smaller trees and more species so that logging operations tended to become clear cuttings. The peak of lumber production was reached in 1907. There was practically no fire protection and forest fires were almost uncontrolled. Disease was on the rampage. There was a large exodus from the sub-marginal farms and pastures, resulting in a reversion back to forest land. A large share of the land was springing up into weeds or undesirable species. Taxes in most cases were excessive so that the forest land was stripped and let go for taxes.

There were no public or private agencies to bring the serious
forest problem "out of the woods" and into the light of public scrutiny.

Assistance in the management of private forest land dates well back to the beginning of the century in New England.

The Massachusetts Forest and Park Association, founded in 1898, was among the first important private organizations formed to attempt to give the forests better care. This organization was instrumental in getting an office of State Forester in Massachusetts in 1904, and in re-establishing control work on gypsy moth control.

As more and more public-spirited people began to see the immediate need for pressing forestry reforms, public and quasi-public agencies were established. They attempted to assure a continuous and ample supply of forest products, promote sustained yield management, stabilize communities, forest industries, employment and taxable wealth. To make the "neglected acres" productive acres was their common goal.

Now each New England state maintains a forestry department which is charged with administration of the state-owned forest lands and forest fire protection. There is an extension forester in each state to give advice to farm woodlot owners. However, in recent years a large number of county or farm foresters have been employed to closer and more detailed service to all woodlot owners. New Hampshire and Vermont are both fortunate in having a forester in each county of the state. The most important service rendered by these county foresters is in presenting an intensive educational program with the purpose of attempting to get progressive thinking among the many forest woodlot owners. Several of the states have associations of timberland owners whose primary aim is fire protection.

A number of agencies cover all of New England as a whole. Among these is the U. S. Forest Service, Northeastern Forest Experiment Station. Its staff is available for advice to larger land owners who are usually beyond the scope of county foresters. Its Wood Utilization Service has been invaluable in acquainting operators and timberland owners in the latest techniques in harvesting and market of timber.

The U. S. Bureau of Entomology and Plant Quarantine maintains a forest insect laboratory and its agents enter into co-operative research and control projects with the several states and individual land owners.

The Office of Forest Pathology, U. S. Bureau of Plant Industry makes similar studies of forest diseases.

Among the more important semi-public and private organiza-
tions is the New England Forestry Foundation. This is a non-profit organization formed to provide complete forestry service to woodland owners at cost. The foundation operates through Forest Management Centers, each with a resident forester. The forester prepares a management plan for the forest, marks the timber, arranges the sale, and the cutting contracts, and supervises the operation. The work of this organization is highly commendable, and more and more woodlot owners are taking advantage of its services.

The American Forest Products Industries, Inc., is a national non-profit organization financed by America's forest industries to encourage public awareness of the importance of our forest resources. Its more important national movements are: Keep America Green, Trees for America, and American Tree Farm System.

The Northeastern Wood Utilization Council, a non-profit agency, was organized in the main to overcome the problem of markets for low grade wood. Other important organizations include: New England Lumbermen's Association, Northeastern Lumber Manufacturer's Association, Northeast Pulpwood Research Center, American Plant Pest Committee, Northeastern Forest Disease and Insect Pest Control Committee, Federal Reserve Bank of Boston, Springfield Land Bank and Bank for Cooperatives, Forest Fire Wardens Association, Forest Products Industries Information Committee, and The New England Council.

While the sustained yield idea has appealed to small woodlot owners, they as a group show little progress towards timber management. The old method of "cut out and get out" is still prevalent. This method results in a condition where the forest property brings no further return for at least a generation, and many of the trees replacing the former stand are frequently of inferior quality.

A good percentage of large timber owners have management plans in operation on their lands. The number of foresters they employ is also increasing. Many of the companies are engaged in reforesting operations and research in order to decrease or utilize waste which is so prevalent.

In the New England forests the rate of growth is very favorable. It is estimated that the total annual growth exceeds the total drain by 18%.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Softwood</td>
<td>-528</td>
<td>+44</td>
</tr>
<tr>
<td>Hardwood</td>
<td>+123</td>
<td>+92</td>
</tr>
<tr>
<td>Total</td>
<td>-405</td>
<td>+136</td>
</tr>
</tbody>
</table>

A study of these figures would indicate that softwood saw timber is being depleted at an alarming rate, while hardwood saw timber is growing faster than it is being utilized. At the current rate of removal of lumber, pulp and paper, veneer and plywood, fuel wood and other products, our timber will theoretically last about forty years. This does not account for the loss from fire, insects, disease, wind, and other destructive agents, which amounts to more than 20% of the quantity being cut. Yet such a view is not realistic; a sort of creeping paralysis would set in long before the last tree was cut, and tree growth is constantly taking place.

The gain is in cubic feet. This is only a measure of cellulosic growth. Too much of this growth is in undesirable species or in inaccessible areas. The timber stands are deteriorating in quality and in size (Tables 4 and 5).

The New England states have some of the best fire protective organization in the country with very good records for keeping losses to a minimum. One hundred per cent of the land area is under protection. Records have been kept for the past thirty-five years, and losses have not been excessive.

Losses from the large number of insect and disease pests are much higher than those resulting from fire. These losses are harder to estimate, since in many cases trees are not killed, but deformed (as by white pine weevil) and rendered worthless or less valuable for lumber. However, huge quantities of timber have been killed at various times. The greatest destruction was caused by the chestnut blight which killed all the chestnut, one of the major species in New England. Birch and beech are dying in a large scale in northern New England due to the Bronzed birch borer, beech scale, and a complex of other causes. The spruce budworm is causing havoc with the spruce and balsam fir.

According to the United States Forest Service the total losses may be roundly summarized as follows: fire, 50,000 cords; insects and disease, 1,100,000 cords; wind, 350,000 cords; for a total of 1,500,000 cords per year, or about one-sixth the total drain.

Logging waste, while less in New England than in other regions of the country, is considerable. About 35% of the material cut or destroyed in the utilization of forest products is unused. In other words, the total drain on forests due to cutting is about...
one-third greater than the utilization. About one-half of the total waste occurs in logging operations and one-half in manufacturing. Logging and manufacturing waste together amount to about 3,000,000 cords, 1,750,000 cords of which is not used in any way.

The taxation of forest land in New England does not contribute to the encouragement of sustained-yield forests. A special study of general property tax was made in Maine. The eight million acres of forest land in organized towns was adjudged the critical tax problem, with tax rates of 4.5 to 7.5 per cent. It was concluded that, where annual tax exceeds 15 cents per acre, the land is usually either disposed of or stripped of timber and let go for taxes. Cut-over land cannot bear 5 cents per acre per year; carefully or selectively cut forest land may possibly bear 8 to 10 cents.

In the other states taxes vary with the communities. Inequality in assessment and timber rates make some timber lands subject to excessive taxation.

Most of the New England states have one or more kinds of preferential tax laws by which an owner may apply for special classification of forest land for purposes of taxation. Applying to special conditions only, and placing an additional burden of red tape on owners and assessors alike these laws never attained their purpose, and the area registered under these laws is negligible.

Only two states in New England have laws governing forest cutting practices. Both are ineffective. New Hampshire laws require a notification of intention to cut on pine lands. A requirement that one pine seed tree be left per acre is not effective. The Massachusetts law requires notice of cutting. Cutting plans are made, but owners are not required to execute them.

SUMMARY

New England has ideal conditions suitable for the application of scientific forestry. With almost no virgin forests, it is a problem of conservative handling of second growth timber and reclaiming sub-marginal land.

Any sound forestry program must have as its foundation a program of intensive education to spur woodlot owners to a program of managing their holdings properly. It must prove to them that it will be of financial gain in the end.

Integrated logging is an answer to better forestry. Each tree and each part of the tree is used for the product it is best suited.

More permanent type sawmills are needed, equipped with dry kilns where better lumber grades can be given their full value. These mills are usually operated by better-informed operators who


Nineteen Fifty
must take future supply of timber into consideration in order to be in business permanently.

The average growth of New England forests is 3.6%. This is a fair average, but only a fraction of what could be attained on well-stocked stands. It is claimed by many well-informed sources that three times as much could be produced. This objective can be reached by improving forest protection and decreasing the losses caused by fire, insects, disease, and other destructive agents.

Sustained yield practice should be used whenever possible, and clear cutting should be confined to only mature even-aged stands. Whether or not our forestry will ever pass into a transition stage to parallel European forestry is problematical and doubtful. Our economy is such that forestry is centered around our logging operations, while in Europe it centers around timber production.

With some justification the wood-using industries have been accused of wastefulness, though much of this so-called wastage in the past has consisted of discarding materials for which no economic use has been developed, or which could not pay its way to the market. Much progress in waste reduction has been made and is continuing as new uses and new methods are discovered. But the waste problem still stands in the forefront of conditions needing correction if the potential economic benefits of New England’s forest resources are to be fully realized in the future.

The inequality of tax assessment tends to discourage sustained-yield management and proper reforms must be introduced.

There must be improved markets for such products derived from forest cultivation, such as thinnings, weeding, and improvement cutting.

With improved credit facilities forest enterprises could be placed in such a level so that the small owner could afford to grow trees.

It is the responsibility of the states to set up regulations of forest practices, clearly expressed, thoroughly explained, and intelligently enforced.

Above all New England needs more forest owners who consider their forest lands as a public trust and it is their duty to manage it with that aim in view.
# TABLE I

**LAND USE IN NEW ENGLAND**

<table>
<thead>
<tr>
<th></th>
<th>ACRES</th>
<th>PERCENT LAND AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>BARREN</td>
<td>929,082</td>
</tr>
<tr>
<td>II</td>
<td>DEVELOPED AREAS</td>
<td>1,596,450</td>
</tr>
<tr>
<td>IV</td>
<td>AGRICULTURAL</td>
<td>6,834,308</td>
</tr>
<tr>
<td>V</td>
<td>FOREST</td>
<td>31,092,000</td>
</tr>
<tr>
<td></td>
<td>TOTAL LAND AREA</td>
<td>40,451,840</td>
</tr>
<tr>
<td>III</td>
<td>INLAND WATER</td>
<td>1,609,632</td>
</tr>
<tr>
<td></td>
<td>GROSS AREA</td>
<td>42,061,472</td>
</tr>
</tbody>
</table>

Derived from "Wooden Dollars" by Henry I. Baldwin and Edgar I. Heerman; published by Federal Reserve Bank of Boston, 1949.

# TABLE II

**OWNERSHIP OF SAW TIMBER IN COMMERCIAL FORESTS IN NEW ENGLAND**

<table>
<thead>
<tr>
<th>State</th>
<th>Publicly owned or managed</th>
<th>Private</th>
<th>Total all Ownerships</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nat'l Forest</td>
<td>Other</td>
<td>State, County or Total</td>
</tr>
<tr>
<td></td>
<td>Federal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>91</td>
<td>64</td>
<td>116</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>1305</td>
<td>8</td>
<td>63</td>
</tr>
<tr>
<td>Vermont</td>
<td>497</td>
<td>22</td>
<td>194</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>8</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>Connecticut</td>
<td>145</td>
<td>145</td>
<td>655</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>1</td>
<td>26</td>
<td>316</td>
</tr>
<tr>
<td>New England</td>
<td>1894</td>
<td>120</td>
<td>842</td>
</tr>
</tbody>
</table>

Adapted from Table 6 "Basic Forest Statistics for the United States" United States Forest Service, 1946.

*Nineteen Fifty*
### TABLE III
DISTRIBUTION OF PRIVATE COMMERCIAL FOREST LAND BY SIZE OF HOLDING

<table>
<thead>
<tr>
<th>Size of Holding</th>
<th>By Owners</th>
<th>By Area</th>
<th>Ave. Area of Individual Owningships</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Thousand Acres</td>
</tr>
<tr>
<td>SMALL</td>
<td>243719</td>
<td>99.90</td>
<td>17661</td>
</tr>
<tr>
<td>(Under 5000 A.)</td>
<td>194</td>
<td>.08</td>
<td>2150</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>45</td>
<td>.02</td>
<td>9483</td>
</tr>
<tr>
<td>(5000 to 50000 A.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LARGE</td>
<td>243958</td>
<td>100.00</td>
<td>29294</td>
</tr>
<tr>
<td>(Over 50000 A.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>243958</td>
<td>100.00</td>
<td>29294</td>
</tr>
</tbody>
</table>

Adapted from Table 11, "Management Status of Forest Lands in the U. S.," United States Forest Service, 1946. Includes farm and non-farm forests.

### TABLE IV
OWNERSHIP OF COMMERCIAL FOREST LAND IN NEW ENGLAND CLASSIFIED BY CONDITION

<table>
<thead>
<tr>
<th>Condition</th>
<th>Publicly owned or managed</th>
<th>Private</th>
<th>Total all Owningships</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nat'l. Forest</td>
<td>State, County or Municipal</td>
<td>Farm Woodlots and other</td>
</tr>
<tr>
<td>Saw timber</td>
<td>401</td>
<td>180</td>
<td>2937</td>
</tr>
<tr>
<td>Pole timber</td>
<td>245</td>
<td>205</td>
<td>1854</td>
</tr>
<tr>
<td>Seedling and Sapling</td>
<td>163</td>
<td>12</td>
<td>102</td>
</tr>
<tr>
<td>Poorly stocked seedling and sapling or denuded</td>
<td>13</td>
<td>78</td>
<td>102</td>
</tr>
<tr>
<td>Total</td>
<td>822</td>
<td>666</td>
<td>1557</td>
</tr>
</tbody>
</table>

Adapted from "Basic Forest Statistics for the United States," United States Forest Service, 1946.

### TABLE V
CHARACTER OF FARM WOODLAND IN NEW ENGLAND

<table>
<thead>
<tr>
<th>State</th>
<th>Saw Timber</th>
<th>Pole Timber</th>
<th>Seedling &amp; Saplings</th>
<th>Poorly Stocked</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maine</td>
<td>1283</td>
<td>543</td>
<td>217</td>
<td>130</td>
<td>2173</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>580</td>
<td>359</td>
<td>206</td>
<td>141</td>
<td>1086</td>
</tr>
<tr>
<td>Vermont</td>
<td>738</td>
<td>408</td>
<td>199</td>
<td>149</td>
<td>1494</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>290</td>
<td>299</td>
<td>199</td>
<td>118</td>
<td>906</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>6</td>
<td>24</td>
<td>62</td>
<td>15</td>
<td>107</td>
</tr>
<tr>
<td>Connecticut</td>
<td>240</td>
<td>221</td>
<td>216</td>
<td>34</td>
<td>711</td>
</tr>
<tr>
<td>New England</td>
<td>2937</td>
<td>1854</td>
<td>1099</td>
<td>587</td>
<td>6477</td>
</tr>
</tbody>
</table>

Table 5, Forest Reappraisal, "Basic Forest Statistics for the U. S.," United States Forest Service, 1946.

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Ames Forester
ABOUT THE AUTHOR

Vincent Pizzano graduated in forestry at Iowa State College in 1941. He was commissioned immediately in the field artillery in which he served throughout the war, in the latter part of the war with the rank of major.

In the early part of 1946 he worked for Amos-Thompson Corporation as a walnut veneer buyer, in the territory of Iowa, Minnesota, and Wisconsin.

Late in 1946 he established Northeast Wood Products, Inc., in Pownal, Vermont. This is a permanent type, all electric sawmill, planing mill and dry kilns, employing three professional foresters. It is the largest sawmill in southern Vermont, and cuts both hard and soft woods, but specializes in oak. Present capacity of author is president.
The Gum Naval Stores Industry
Of Dixie

by
EUGENE F. GRENEKER, JR.

Tucked away on the market pages of the daily newspaper is a small paragraph captioned: "NAVAL STORES MARKET". It is datelined, "SAVANNAH, GA."

In the paragraph are letters such as X, WW, WG, after which is a figure, say, 6.75.

Actually, many people believe that Uncle Sam's Navy is purchasing secret material or at least the quotations are in code, thus the X, WW, and WG. Could these designations stand for bell bottom trousers, sixteen inch cannons or deck plates? The answer is no.

Those market quotations are results of the daily bidding and trading in two of the oldest agricultural products in this country... Spirits of Gum Turpentine and Gum Rosin which come only from the living slash and longleaf pine trees.

Gum Turpentine itself doesn't come directly from the tree. Gum Turpentine is a by-product of a pale, yellow, sticky substance that oozes slowly from the tree after it has been chipped or tapped. The name of this substance is Oleoresin, which is collected in small cups attached to the tree. Turpentine farmers call this Oleoresin, "dip" or "gum". The contents are emptied into large barrels which are hauled to a distillery for processing into Gum Turpentine. There's a residue after this processing and this material solidifies about 24 hours after a charge is turned out. This is Gum Rosin, of which there are 13 grades ranging from a transparent pale yellow to black. The X above stands for extra while the WW is waterwhite and the WG is for Windowglass, three of the top grades of rosin. It is sold on the 100 pound basis while turpentine by the gallon. The 6.75 means rosin brought $6.75 per hundred that day.

The woods producing dip are located in only five states. They are: Georgia, South Carolina, Florida, Alabama and Mississippi. Only two species of pines produce this oleoresin for commercial purposes: The longleaf and the slash pine tree.

In these green slash and longleaf pine forests of the South, close to 300,000 men are engaged in one of the world's oldest agricultural enterprises. Nature has supplied the crop. Man applies his ingenuity and muscles.
The early colonists used the pine tar and pitch to caulk the seams of their wooden vessels. History says Noah caulked his Ark with the pine products. The Phoenician mariners sailed in wooden ships likewise caulked. Thus, the term "Naval Stores" was applied to the industry. Today, however, gum turpentine and rosin have usurped the title as both go into hundreds of commercial products and both have many uses in their own right.

Pine trees are farmed. The forests are worked in crops, a crop being composed of 10,000 faces. Unlike the dirt farmer, the gum farmer doesn't have any spring plowing. He plows, however, but not to break the soil. He plows fire lines to protect his forests from the bugaboo of all timber—the woods fire. The gum farmer hasn't any seed to plant unless he wants to set out

A stand of longleaf pine being turpentined.

* Nineteen Fifty *

19
In the language of the Gum Farmer, this is a "Hoover Wagon" which is used extensively in the "Piney Woods" to haul the dip from the trees to a central collection point. In this photo the wagon is loaded with old cups which are brought in about every two years to be boiled and repaired.

saplings to reclaim idle, once-cultivated acres or those eroded. Nature sees to most of his re-seeding problems. He must certainly protect them though.

Georgia is the largest producing state. Florida is next. Georgia produces 74% of the country's annual production. The nation's gum crop has been valued as high as $60,000,000. Like all agriculture ventures, there have been lean seasons and healthy ones.

Many turpentine farmers begin chipping when the tree reaches nine inches DBH. This is the size recommended by the U. S. Forest Service, at which tapping operations should begin. Some of the more far-sighted and progressive farmers wait for eleven inch diameters before tapping.

With the first breath of Spring, operations begin and they conclude generally late in November. The gum circulates more freely in the warm season of the year.

On trees that are being worked, one fresh "streak" is put on each week, starting at the bottom and working up the trunks. The workers use a sharp, short instrument known as a "hack" for scarifying the trees during the first three years of operation. For
the next three years, he employs a longer instrument with a similar sharp cutting edge known as a "puller". These workers are so adept that it is a common occurrence for one man to handle 5,000 to 10,000 trees a week.

Cups that collect the oleoresin, or crude gum, are attached to the tree just beneath the streak or wound. As the cups become filled, workers walk among the trees and empty the gum into buckets. The contents are dumped into barrels. The full barrels

A typical scene in the "Piney Woods" of Dixie. This worker known as a dipper is collecting the Gum from the cups.

*Nineteen Fifty* 21
Shown here are a dip crew and a puller (at far right) putting on a new streak.

are then hauled to a processing plant for distillation into Gum Turpentine and Gum Rosin. This substance, when cool, hardens into varying shades of hard, brittle, semi-transparent material.

On a commercial front, both commodities go into hundreds of products, and there are many uses. The most outstanding use for Gum Spirits is as a paint thinner. It penetrates the surface and anchors the paint. Rosin goes chiefly into soap and paper.

When a tree has passed its period of usefulness for turpentine (each face doesn't exceed 90 inches in height), the gum farmer thins these trees out of his woods, for poles, cross ties and lumber.
Primarily though, gum farmers operate for turpentine, and this other business is entirely incidental.

Whenever three or more Americans meet they invariably form a club or association, a visiting British journalist once wrote for his newspaper back home. Of course, that is a slight exaggeration but in that, there is some truth.

Scan the telephone "yellow" section of an American city or town and you'll see listed numerous clubs, unions, groups . . . . from Lovers of Rose bushes to the Society of Lonely Bachelors.

The Gum Naval Stores Industry is no exception. Almost from Colonial days, Turpentine operators have met and formed associations. For a number of reasons many died out after a few years of life.

A close-up of a turpentine pine. The white substance has dried on the face and is known as "scrape" which is gathered in the late winter months.

_Nineteen Fifty_
For fourteen years, however, one has remained and shows all signs of being here for years to come. That organization is the American Turpentine Farmers Association Cooperative. Known to the producers and the trade as "AT-FA", this Association was, like the others, born in adversity and weaned on hard times, but unlike the others is now lustily growing through its "teens".

In the middle 30's a group of producers met at Jacksonville, Florida and from that meeting emerged the present AT-FA. It was agreed to establish the general offices at Valdosta, Georgia.

According to the by-laws, the purpose of which the Association is formed are:

(a) To provide, through research, education and negotiation, improvements in the production and marketing of oleoresin, gum turpentine, gum rosin and their by-products, and to furnish facilities and agencies for economical production and orderly marketing of such oleoresin, gum turpentine and gum rosin and their by-products through the United States and foreign countries.

(b) To stabilize the gum naval stores industry and to secure better results in distributing the products thereof; to appear in behalf of the members of this Association before trade, federal, state, legislative, educational and commercial bodies and to act in behalf of its members before such bodies; to negotiate with such agencies on behalf of its members; to improve the relationship between its members and the agencies distributing the products of its members; to organize co-operative associations for the benefit of its members and to create agencies which shall act for all of its members; to assist members to maintain standards of quality and to encourage and promote better and more economical methods of production; to improve methods, equipment and facilities in the production, handling and distribution of the products of its members, to encourage the planting, farming and production of resinous trees and to assist its members in the agricultural production thereof; to rent, buy, build, own, sell and control such buildings, land, equipment, machinery and supplies and other real and personal property as may be necessary in its business of improving methods, equipment, and facilities in the production and handling of the products of its members and to exercise all rights of ownership in such properties; to buy and sell supplies co-operatively for the benefit of its members or to create agencies for such purposes; and to borrow money of any person, firm, corporation, or government agency, and to secure the payment thereof, by note, mortgage or other evidence of indebtedness and to take and receive, for the use and benefit of the Association, notes bonds, mortgages, liens, or other evidence of and securities for indebtedness; to buy and

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*Ames Forester*
Putting on a new streak with a bark hack, one of the newest tools in the industry. The bottle hanging on the gutter contains sulfuric acid which will be sprayed on the streak to prolong the flow of gum. The object over the cup is a cover carried by the chipper to keep chips and trash from falling into the gum.

sell the products of its members, and to create such agencies therefor; to create agencies for warehousing the products of its members and for financing the production of such products and to finance such agencies; and generally to assist its members in orderly marketing of the products of its members.

(c) To advertise the products of its members; to maintain research laboratories and operate them for the benefit of its

_Nineteen Fifty_
members; and to cooperate with and contribute to the support of any existing schools and laboratories whose work tends to further research in the field of oleoresin, gum turpentine, gum rosin and their by-products.

(d) To cooperate with state and federal agencies in the planting, conservation and growing of slash pine and other resinous trees; in pine tree farming or other agricultural activities of state and federal agencies, affecting the production and distribution of gum naval stores; and to encourage the planting, growing and farming of slash pine and other resinous trees by its members; to cooperate with state and federal agencies in forest preservation and conservation and to do anything in a cooperative manner which will mutually benefit the community and the members.

(e) To affiliate, by contract or otherwise, with other cooperative organizations having generally similar objects; to organize subsidiary associations or corporations having generally similar objects.

(f) To cultivate the spirit of cooperation among its members.

Thus set up to begin functioning, the Association plunged in. Gum Turpentine went begging at 17 1/2 cents per gallon.
Prices of rosin and turpentine had been going down for years to the point where there was no profit for the producer. In those days a barrel of crude gum would have brought only $7.29. Cheap substitutes had taken away many of the best markets for Turpentine.

Producers were heavily in debt.
The whole industry was facing bankruptcy.
That was the situation in the middle 1930's.
An operator has only to think back to those calamitous years and compare them with his situation today to realize the tremendous changes that have taken place.

Today, there is a good demand for Gum Turpentine and Rosin at profitable prices. Producers are out of debt. The industry is in good shape financially.

Tremendous changes, and they didn't just happen.
Through the untiring efforts of the officers and directors of the American Turpentine Farmers Association, together with the strong support of Producers and other interests in the Gum Naval Stores Industry, the producer-members have literally pulled themselves up by the bootstraps from depression to better times.

Now the amazing thing about American Turpentine Farmers Association Cooperative is that it has never actually cost producers one single penny. On the other hand, it has secured benefits for
gum producers running into millions and millions of dollars over and above the small dues paid by members of the Association.

The Association has sponsored annually a Conservation Program for Gum Naval Stores operators. During the years 1936-49 inclusive, $11,295,814.00 have been paid to Naval Stores Producers for compliance with the provisions of the Naval Stores Conservation Program which is administered by the U. S. Forest Service.

If the Association had done nothing more than sponsor the Conservation Program, it would have many times justified its existence. Cash benefits resulting from the Conservation Program alone amount to many times the annual dues of members of the Association.

When prices of Turpentine and Rosin were far below cost of production, and Naval Stores operators were facing financial ruin, American Turpentine Farmers Association made available millions of dollars in loans. Coming at a time when Naval Stores operators were in the direst straits, these Commodity Credit Loans

Interior of a modern Gum Turpentine and Rosin processing plant.
handled through the Association were the salvation of operators and the industry.

Keeping abreast of many changes taking place in the agricultural programs of the Federal Government, officials of the "infant" Association decided to make a test case which, as it turned out, proved very far reaching and sweeping.

The Association argued that a turpentine operator was as much an agriculturist as a row crop farmer who was producing, say cotton.

Instead of cotton in the fields, a turpentine worked with trees.

Taking the issue to court, the Association argued and proved that a producer manufactured nothing. The tree did the manufacturing as did the cotton stalk. The Turpentiner simply harvested the production from the tree.

Of course, it was not as simple as this, for days and days were spent in the courtrooms and thousands of words filed in briefs.

The Association won its case. Exemption from complying with Social Security Law and the Wage Hour Law were tangible results of this classification.

In short, turpentiners were officially recognized as Turpentine Farmers and were engaged in turpentine farming.

AT-FA has won many battle for producers at the nation's capitol. Its position is strong and it has many true and staunch friends. Only through the Association can the producer hope to maintain his position and safeguard his industry in the future from unfavorable laws or regulations.

When the American Turpentine Farmers Association was first organized, Gum Turpentine was a cracker barrel commodity. It was sold in 50 gallon drums and anybody who wanted to buy Gum Turpentine from a paint store or other retailer was forced to take a bottle or can with him. The turpentine, of course, was out of sight in the rear of the store. There was nothing to remind anybody to buy Gum Turpentine. It was a messy, inconvenient product for the retailer or the consumer to handle.

Gum Turpentine had lost out as one of the ingredients in manufactured paint and was fast losing its position as a paint thinner with lead and oil, or as a thinner for manufactured paint.

Small wonder then that the demand for Gum Turpentine was decreasing year by year and prices, of course, were going down, down, down!

So, in 1938 American Turpentine Farmers Association sponsored a national advertising program, to get more people to use.
The old method of distilling Gum Turpentine. Contrast the interior of this old-time fire still with the interior shot of the new.

more Gum Turpentine. Along with the national advertising the Association sponsored and had designed attractive, lithographed tin containers and beautifully designed bottles—all bearing the AT-FA Seal of Approval. In other words, the Association took Gum Turpentine out of the cracker barrel and gave it a modern merchandising dress.

The Association conducted national surveys to create new markets and stimulate old markets for Gum Turpentine.

It was not long before the goodwill of master painters and painting contractors all over the country was won for Gum Turpentine. They liked the new packaged turpentine. It was easy and convenient to handle. They liked the advertising which urged the public to "PAINT NOW AND SAVE!" 9 out of 10 Master Painters and Painting Contractors said they preferred to use Gum Turpentine. Thus, a great market was won back for Gum Turpentine.

Homeowners all over the country were told of the advantages of Gum Turpentine, not only for thinning paints, but for cleaning floors, furniture, woodwork, porcelain, metal fixtures, etc. Distribution for Gum Turpentine was gained in cities and towns all over the country. Great mail order houses like Sears, Montgomery-Ward, Butler Bros., for the first time handled Gum Tur-

*Nineteen Fifty*  

29
TODAY IT’S ESTIMATED THAT MORE THAN 80% OF THE CROP OF GUM TURPENTINE WILL BE SOLD IN SMALL PACKAGES. Getting this much turpentine into new channels of trade in modern merchandising packages is the equivalent of finding an entirely new market for Gum Turpentine, and this is a stable, year-round market that will continue to grow if properly supported. It is also a market that is not too much concerned about the price of Turpentine. Within reason, it will pay the price asked.

This all important accomplishment of American Turpentine Farmers Association is the underlying factor in the steady increase in prices from 17 1/2 cents per gallon and for the steady demand all over the country for Gum Turpentine.

"There remains, of course, a depressing lot yet to be accomplished in the gum naval stores industry. But don’t say we are static. Don’t say we aren’t making any changes”, says Judge Harley Langdale, a producer and president of the Association.

It is interesting to note that Judge Langdale was the first to fill boxcars with Pure Gum Spirits of Turpentine. Before the Association’s advertising and merchandising program was in effect Turpentine was shipped in drums and tankcars. It has created a new outlet for the product.
president of the Association and today has been its only president. For fourteen years the membership has seen fit to re-elect him president and it has been without opposition.

CONTRIBUTOR'S BACKGROUND

Eugene F. Greneker, Jr., author of "The Gum Naval Stores Industry of Dixie" is a native Georgian and has been connected with the American Turpentine Farmers Association since 1941, as Editor of the AT-FA Journal, official organ of the Association which is published monthly. In addition to that he handles publicity for the Association. Prior to his affiliation with the Association, Mr. Greneker was a reporter with the "Augusta Herald", Augusta, Georgia, where he was born and reared. He is a veteran of World War II having served in the Navy, he is a member of the American Legion, the Valdosta Exchange Club and the First Christian Church of Valdosta. He is married and has one son.
Private Forest Management In The Lower South

By

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The forester who studies the lower South is impressed by the marvelous productivity of much of its wide-spreading forest lands, by the abundance of logging and wood-using activities on every side, and by the contrasts from one locality to the next in forest conditions and the evidences of forest management. He may well have the urge, as many hundred foresters before him have had, to go to work in this land of pine and hardwood where forestry opportunity is so attractive, problems so varied, and progress so rapid.

A TOUR OF THE REGION

Let us make a tour through the lower South and see for ourselves. We shall start from New Orleans, drive north through the toe of Louisiana and into Mississippi. Thence we shall swing eastward across the shortleaf-loblolly pine-hardwood uplands of the region working our way through Mississippi, Tennessee, and Alabama. Dipping into Georgia and Florida, we will return westward the length of the naval stores belt—the forest of long-leaf and slash pines, interspersed with hardwood river bottoms and "ponds", that borders the Gulf Coast.

The second half of our tour will take us west of the Mississippi River. We shall begin by seeing the remainder of the long-leaf pine belt, in southwest Louisiana and southeast Texas. Then we shall drive through the shortleaf-loblolly pine-hardwood uplands in eastern Texas and Oklahoma and in Louisiana and Arkansas. Finally, from northeast Arkansas we will coast back to New Orleans along the Mississippi River, through the wide alluvial belt where hardwoods and cypress grow. This belt, from Cairo, Illinois, to the Gulf, is called the Delta.

Our trip will be a long one, nearly 5,000 miles, for this broad region encompasses more than 30 percent of all the commercial forest land in the United States. Often avoiding main highways to get a more representative view of the countryside, we
shall notice the wealth of secondary roads open to us throughout much of the way. The high accessibility of southern upland forests aids vitally in their management and utilization.

WORLD'S LARGEST PLANTATION

Our first stop is at Bogalusa, Louisiana, center of activities of the Gaylord Container Corporation and formerly of the Great Southern Lumber Company. Here we shall see the largest commercial forest plantation in the world.

When the Great Southern merged in 1937 with Gaylord interests, the newly-formed corporation inherited 260,000 acres of forests in Louisiana and Mississippi. Most of this was cut-over longleaf pine land, but in the later purchases that raised the total to 344,000 acres was much land bearing second-growth loblolly and shortleaf pine. The company operates a huge kraft paper plant which consumes more than a thousand cords of pulpwood daily. It also operates 14 other major plants that convert kraft paper into bags, cartons, and other packaging items.

Forestry on these lands goes back to 1920, when the Great

Nineteen Fifty

33
Southern Lumber Company decided to enter into a vast program of reforestation. During the next 17 years, it hand-planted 30,000 acres of cut-over land to pine (chiefly slash, but some longleaf and loblolly). At the same time, by keeping out fires and leaving seed trees, the company enabled many thousands of acres of cut-over land to restock naturally. Since the merger, the Gaylord Container Corporation has nearly doubled the area in plantations—to 57,000 acres, all within 15 miles of the pulp mill. Each year the Corporation plants—with machines where possible—between 2,000 and 4,000 acres of the remaining open land to slash pine.

We learn that this planting work, and the intensive fire protection and culture of both natural and planted forests is handled by a staff of 10 graduate foresters and twice that number of trained woodsmen. The forestry crew have the most modern equipment—mechanical tree planters, a fleet of jeeps, two-way radio, a fire-patrol plane, and complete facilities for taking and interpreting aerial photographs. They mark each tree to be cut, holding the volume of cut below timber increment so as to build up the growing stock in quantity as well as quality. Through their efforts, mightily aided by the South’s favorable soil and climate, cut-over lands recently acquired are already assuming the appearance of productive forests. We walk through a 21-year-old plantation of slash pine that averages 32 cords of standing timber per acre and has already yielded 9 cords per acre in thinnings.

Gaylord’s utilization policy is to make a profit from the woods, and not necessarily to make pulpwood. In 1947 the company sold more than 10 million board feet of pine sawlogs and piling and more than 13 million feet of hardwood logs and ties. Under this policy Gaylord gets most of its pulpwood, not from its own lands, but by purchase from small forest owners.

**EXTENSION FORESTRY**

Leaving Gaylord’s holdings, we drive northward through the interspersed woods and farm lands that are characteristic of much of the lower South. It is from such woodlands that Gaylord and other members of the pulp and paper industry obtain much of their pulpwood. How poor these woodlands look by comparison with the well-managed forests that we have just left! Many show signs of recent heavy cutting, and are stocked mainly with low-grade hardwood and with pine too small to be usable. What is the trouble here? Why, for instance, does a pulp company not practice as good management in cutting wood from others’ lands as from its own? There are two parts to the answer.

*Ames Forester*
First, pulp companies are not the only users drawing on these woodlands. Indeed, with all the expansion in kraft pulp manufacture that the South has seen in recent years, pulpwood still makes up less than a fifth of total cutting drain on pine growing stock. Sawmills still account for more than half of the total. Over sawlog cutters' activities of course, pulp companies have no control.

Second, pulp companies have little direct control over the activities even of pulpwood cutters. The explanation of this odd fact is that cutting is done by contractors, not by company employees.

Hence the progressive company that wants to see good forestry practiced on others' lands is in the same position as any other interested outside agency. It must approach the owners of these woodlands with educational efforts and technical assistance, persuading and helping them to institute good management, to mark trees for cutting, and to supervise logging operations. Most pulp companies devote part of the time of their forestry staff to this purpose. As an industry, they have created the Southern Pulpwood Conservation Association, whose job is primarily one of education. These efforts supplement those of other private agencies and of the public agencies, state and federal, in an expanding program to persuade woodland owners to practice conservative management. This program still has far to go.

**CUTTING PRACTICES—LARGE HOLDINGS**

A survey made in 1945 by the U. S. Forest Service showed that only 12 percent of the area of private forests in the lower South was the timber cutting good or high-order—designed at least to leave the land in possession of desirable species in good condition for future growth. This was, however, a markedly better showing than in any other region of the United States. In the South Atlantic states the percentage of such good cutting was 8; in the North, 6; in the West, 5.

Of the total acreage of well-cut forest properties in the lower South, three-fourths was in big holdings, larger than 50,000 acres. Seventy-five percent of pulp-company land was cut under good practices in the lower South, as against 8 percent in the North and a negligible percentage in the West. As for lumber company holdings more than 50 percent were well cut in the lower South, as compared to 12 percent in the North and 8 percent in the West. It is on such large holdings that spectacular progress has been made in forestry.

One example that we see is the land of the Tennessee Coal, Iron, and Railway Company, of Birmingham, Alabama. This
company has something over 300,000 acres of forest land. About four-fifths of it is in shortleaf, loblolly, and longleaf pines and hardwood in northern Alabama. The remainder is longleaf and slash pines in southern Alabama. The chief business of this company is making iron and steel. Nearly all the iron ore and coal needed are obtained from company-operated mines, and the first demand on the forest is for those mine props and other mine materials that cannot be purchased to better advantage on the outside. The company’s forests, however, are managed as commercial forests for highest sustained returns.

The company began forest management with the adoption of fire-protection measures. Later, when its longleaf timber in south Alabama reached turpentine size, the company adopted the policy of thinning by selecting the largest limby trees, working them for naval stores for several years, and then cutting them for sawlogs or pulpwood. The next step was integrated utilization, whereunder poles, sawlogs, and pulpwood were cut in the same operations. Today, all timber is marked by a forester before logging.

The pine-hardwood stands in north Alabama were cut over some years ago, and many of them are still poorly stocked and rather heavily encumbered with low-grade hardwoods. Since the

Figure 2.—Integrated utilization: this selectively cut stand furnishes not only sawlogs but also substantial amounts of pulpwood from top wood and from thinnings. (U. S. Forest Service photo.)
forestry program was adopted, the foresters have been carrying out a program of improvement cutting. Because low-quality wood suffices for much mine material, the improvement cutting utilizes many low-grade hardwoods from the pine-hardwood stands.

**CUTTING PRACTICES—SMALL HOLDINGS**

On the small holdings (less than 5,000 acres) which comprise seven-tenths of all private forest land in the lower South, the story is quite different. Only 2 percent receive good cutting. No other region of the country shows a lower percentage in this item. These small holdings, both farm and nonfarm woodlands, are the crux of the timber-management problem in this region.

For an example of good management, let us drop in on James Oliver, a farmer in Bullock County, Alabama. Mr. Oliver has been managing his 25-acre woodland for 31 years.

During these years six sales of standing timber have netted him $508.00 in cash and 5,600 board feet of lumber valued at $530.00, or a total of $1,038.00 in money and lumber. This means an average income of $33.50 per year for 25 acres of timber land, or about $1.35 per acre per year. In addition, he has constructed and maintained 3 miles of fence with 1,684 posts cut off the farm woodland. These posts would have cost him several hundred dollars to buy.

Today, after several cuts, he can still show us a good stand of pine with trees 12, 14, and 16 inches in diameter, and good hardwoods in the lowland. His forest is growing rapidly; it will probably triple its present volume within the next 10 years. Although he was never taught to select the trees to be cut, he marked those he thought should come out. Recently he has called in the county farm forester to help him improve his cutting practices.

**FIRE AND OTHER HANDICAPS**

Of course, for every small property like Mr. Oliver’s, we see dozens where timber-cutting practices have been poor or destructive. In talking with the owners or operators of these woodlands, we get the impression that their reasons for failing to practice good forestry are much the same as we find in other regions, at least in the eastern United States. A great number are unaware that their woods can produce a high, regular income if well managed. Other owners are too occupied with their farming or other business to have time for forestry. Still others appear to be at the mercy of the timber buyers and loggers through whom they deal, and whose prime interest is maximum immediate return. Many have sold all their merchantable timber because they needed the cash—not an uncommon reason in this region of low incomes.
One of the great handicaps to private forest management in the lower South has long been the fire problem. Some of the chief remaining gaps in our nation-wide system of state-federal cooperative fire protection under the Clarke-McNary Law are in the lower South. The Forest Service's 1945 survey found that only 32 percent of the privately owned commercial forest land in the lower South received good or fair fire protection on the Clarke-McNary minimum standard. The percentage of good or fair fire protection on private forests in the South Atlantic states was 73; in the North, 82; in the West, 91. Some progress has been made since 1945, but there is still a long way to go. Fire protection is a job best handled on a large scale. The absence of good public protection, while serious for all, is harder on small owners than on large, who have the alternative of organizing their own systems.

One large forest owner in a part of the region where the fire problem tends to be severe is the Alger-Sullivan Lumber Company of Century, Florida. This company has about 220,000 acres of timber land, practically all in the longleaf-slash pine belt in southern Alabama. Since 1900 Alger-Sullivan has been cutting high-grade longleaf, much of it for export. In 1920, the cut was 50 million feet.

It was in that year that Dr. Austin Cary of the U. S. Forest Service first visited the Alger-Sullivan operations. During the following several years the company, under his advice, set out to prolong the life of the plant. It began cutting and turpentining conservatively, thinning and caring for young stands, and working at the fire problem. Finally one mill was closed, and the total cut was reduced by half. Also, turpentining was discontinued.

In 1937, under guidance of the Division of State and Private Forestry of the U. S. Forest Service, the company cruised its timber and formulated a forest management plan. A forester was hired, and selective cutting was practiced so as to improve and build up the growing stock. Recently the property has been divided into districts of approximately 50,000 acres. In each district an experienced, technically-trained forester, responsible to the chief forester, has been placed in charge of all forestry, logging, and other woods operations. The chief forester is also the logging superintendent.

The company still holds much high-quality longleaf timber and is producing lumber and timber for a large export trade. Its policies are pointed towards producing high-quality lumber, even at the cost of lowered total output. To accomplish this, the company leaves tall, clear intermediate trees (and even some suppressed trees) for future growth. It has initiated a pruning pro-

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*Ames Forester*
gram, does some non-commercial stand-improvement work, and maintains a small salvage-logging crew which works around in the older stands, picking up trees that have died.

**WOOD-USING ACTIVITY**

As we drive westward through the longleaf-slash pine belt, let us take stock of the wood-using activity that we have so far seen and prepare ourselves for the similar activity that we will find west of the Mississippi River.

We have heard it said that 20 cents out of every dollar in the pockets of southerners comes from the forest. Though not a precise figure, this proportion is accurate in suggesting the great importance of wood-using activity to the region. As a source of income, forests are second to farming in most of the states to which our tour takes us.

Many a town through which we have passed owes its livelihood mainly to some sawmill or pulp mill or other wood-using plant. Along the road, we have passed countless trucks bearing sawlogs, pulpwood, lumber, and other forest raw materials or finished products; and at many railroad sidings we see these forest commodities being loaded on cars. In the rural areas, the loggers are busy everywhere, and out near the woods we see small sawmills by the hundreds. All together, there are some 15,000 sawmills in the lower South, and they turn out three-tenths of all the lumber made in the United States. All but about 2 percent of these mills cut less than 5 million board feet in a year. The region's 32 pulp mills have more than a third of the national pulping capacity.

The region's forests are not well enough stocked or managed to support all this activity on timber growth alone. During the decade between the mid-1930's and the mid-1940's—outside Tennessee and northwest Arkansas, for which there are no comparable figures—total sawlog growing stock fell 14 percent. This was a drain on timber capital in addition to growth. Generally speaking, depletion was heaviest in the northern parts, while in some of the southern parts—notably the naval stores belt outside Florida—the timber capital was built up.

The differences in resource trends are traceable to several factors. Of these, the factor of ownership is for us the most interesting, since it ties back directly to forest management. We have seen enough by this time to realize that the forest owners of the lower South fall, very roughly speaking, into two groups.

One group, the majority in both numbers and forest acreage, has little or no investment in wood-using plants. For the most
part, when they harvest timber, they sell it on the open market—to stumpage, sawlog, pulpwood, and other timber buyers. Their holdings are the principal scene of activities of the army of itinerant loggers, contractors, and small-sawmill operators. These forest holdings are typically small and typically ill managed.

The forest owners of the other group have considerable investments in wood-using facilities—sawmills, pulp mills, or other plants. The prime interest of many of them is to stay in business. Their forests are their source of raw material—in many cases for the present, in all cases for the future, when the open market may not be so ready a source of wood as now. Meantime, however, the open market provides at least pulpwood and small sawlogs to tide over certain classes of these owners while they are building up the growing stocks on their own lands. These forest holdings are typically large and typically well managed.

One of the largest of these holdings is that of the Southern Kraft Division of the International Paper Company. We have seen numerous parcels of the Southern Kraft holdings in the states already visited, and as we move west of the River we see more of them.
All told, Southern Kraft owns about 2 million acres of timber land in 9 southern states. Slash, longleaf, shortleaf, and loblolly pines and hardwoods from reproduction to large saw timber are included. The company's eight large pulp and paper mills consumed 3-1/3 million cords of pulpwood in 1948—about a third of the total pulpwood cut in the South and nearly a fifth of the total used in the nation.

The Southern Kraft Division began to practice forestry in 1925, the year the Division was organized and the first mill and timber lands were acquired (in Louisiana). The forestry consisted of developing a protection system against fire and timber theft. This task was handled by a consulting forester, who trained local woodsmen on the job. As new plants were built and additional tracts of timber were purchased, a forestry division was built up. At present this group includes 120 technical foresters, who manage company land, participate in new land acquisition, procure pulpwood from other owners (through contractors), and encourage good forestry among these owners.

Company land provided only about 5 percent of total pulpwood requirements in 1948. The Division's chief concern on these lands is to improve growing conditions and build up the growing stock. A system of lookout towers, fire lanes and radio-equipped control crews has reduced losses from fire: in 1948, only 1 percent of company holdings were burned over.

In wet periods and off-fire seasons these crews do forest improvement work. Thousands of acres of pine have been released from over-topping scrub hardwoods. Dense young pine stands have been thinned. Hardwood sawlogs have been cut and sold to make room for pine on a quarter-million acres. As soon as seedlings can be obtained, the Division intends to plant about 40,000 acres that will not restock naturally. During the 1947-48 planting season, 3,612,000 seedlings were planted with machines. Southern Kraft exchanges pine sawlogs from company land for pulpwood from the outside. In 1946, 30 million feet of sawlogs were exchanged for 169,000 cords of pulpwood.

Southern Kraft foresters do educational work with forest owners from whom pulpwood is purchased. In 1948, company foresters marked, without charge, 140,000 cords in partial cuttings on 70,000 acres belonging to 600 forest owners. The company held exhibits and conservation meetings and distributed more than 2 million pine seedlings free for planting by 4-H Club boys, Future Farmers of America, and landowners.
HARDWOOD PROBLEM

The hardwood problem to which the Southern Kraft foresters devote a good deal of their attention is widespread in the South. It consists in the fact that, somewhat in contrast to pine, the quality of hardwood is highly variable and only the better-quality timber finds a ready market. On pine sites, unpromising hardwood may reproduce vigorously and threaten to take over the stand. Both here and on hardwood sites, the poorer-quality hardwood tends to increase in the stand as better elements are harvested. The only remedies are to find uses for this poor hardwood or to destroy it.

In some parts of the region, more than half the growth of young timber in pine stands is taking place on hardwood sites. And many hundred thousand acres that were formerly pine forest are now hardwood forest.

The Ozan Lumber Company of Prescott, Arkansas, has made a particularly aggressive attack on the hardwood problem. This company has a little less than a hundred thousand acres of short-leaf-loblolly pine and hardwood land. It operates three efficient medium-size sawmills and produces chiefly pine lumber. The logs for these mills come both from company land and from outside purchases.

The company has employed a forester for about 15 years and has been cutting conservatively and selectively on company land during that period. During the war, to take advantage of the brisk hardwood market, the cut was switched from principally pine to principally hardwood. Much of the poor-quality hardwood sawlog component of the stand was removed. Since the war the forester has employed a 15-man crew to control hardwoods by utilization or girdling and to thin and improve pine stands. About a quarter of the total area, comprising most of the stands needing this work, has been covered to date. All trees cut on company land are first marked by this crew; the total amount cut is held well below the growth. Fire protection is adequate, and natural tree reproduction has made planting unnecessary. For some years, services of the company's marking crew have been available to other forest owners without cost.

FOREST RESEARCH

In the course of our tour of the lower South, we have heard much of the research work that is an important part of the forestry movement in this region. Forest research has been in the van with the development of improved wood-utilization procedures, the study of tree regeneration and cultural measures, the use of advanced techniques in gum naval stores production, and in work-
ing out and demonstrating profitable systems of timber manage-
ment.

This research is being done by both private and public
agencies. Among the latter are the Southern and Southeastern
Forest Experiment Stations of the U. S. Forest Service. From
their respective headquarters at New Orleans and Ashville, N. C.,
these two stations operate 12 branches in the lower South.

Figure 4.—Over-heavy pulpwood cutting has transformed this farm woodland
from a pine-hardwood forest into a hardwood problem area. (U. S. Forest
Service photo.)
While we are in the vicinity, let us stop at the Southern Station's branch at Crossett, in southern Arkansas. The findings of 15 years of research on this experimental forest have had a marked effect on loblolly and shortleaf pine management throughout the South.

Especially noteworthy as an example of intensive management is the "farm forestry forty." Set up as a trial of what a farmer might earn from his woods through annual selective cutting, the forty-acre plot has now been under management for 12 years. During that period, 148,692 board feet of logs, 290 cords of pulpwood, 209 cords of fuel wood, and 385 fence posts have been cut. These products had a stumpage value of $2,437 ($5.08 per acre per year) and a delivered value of $7,590 ($15.81 per acre per year). Moreover, the timber stand has improved and the forest today is in far better condition than when cutting started.

On about 1,000 acres of the 3,500 acres of typical second-growth pine stands of the Crosset Experimental Forest, selective timber management under short cutting cycles has been practiced for over 10 years. During this period an average of 1,755 board feet (International 1/4-inch rule) of pine logs has been cut per acre. The average volume per acre, in trees 12 inches d.b.h. and above before cutting started in 1937, was 4,807 board feet, and in 1946, after cutting, was 6,253 board feet. This is an increase of 30 percent in volume, in addition to the 37 percent of original volume that was cut during the 10-year period.

During this period, the number of sawlog trees per acre and the size of the average tree have increased. More recently, studies of even-aged versus selection all-aged management have been established. Heavy improvement and release cuttings in the hardwood portion of the stands, together with complete fire protection, have resulted in good pine reproduction.

BOTTOMLAND FOREST MANAGEMENT

Although there is more hardwood timber than pine in the lower South, it has become obvious from our trip that far more is known about the management of pine than of hardwood in this region. To learn more about hardwood forestry is one of the challenging problems.

During the last leg of our tour, we shall pass through the one great section of the lower South where pine is quite out of the picture. This is the Delta, which we enter in Arkansas on our way to Memphis, Tennessee. One of the progressive forest owners whose lands and mills we visit is the Anderson-Tully Lumber Company of Memphis.
This company owns more than 200,000 acres of bottomland hardwoods in the Delta portions of Louisiana, Arkansas, and Mississippi. It is one of the largest producers of hardwood lumber in the country. Most of its lumber it makes into semi-finished products such as handles, furniture squares, egg crates, and the like. Face veneer is also produced. The company gets its logs from its own land, and also from farm woodlands and other open-market sources. Besides logs, it purchases much green lumber.

When old-growth bottomland hardwood became scarce some years before the war, the company began selecting the over-mature and defective old-growth trees for cutting and saving the thrifty ones for future cuts. The company now practices very strict selective cutting of old growth, removing only those trees that would probably diminish in quality or die before the next cut in 5 to 10 years. Fire protection is strict. In its cut-over and second-growth stands, the company practices improvement cutting and thinning. A crew of 10 trained men spends full time in cruising, appraising, and marking both company and outside timber. The practical forester in charge has responsibility both for timber management and for supplying logs to keep the plants in full operation.

**FORESTRY PROSPECTS**

We are back in New Orleans, having completed our wide and all-too-brief tour of some of the most fascinating forest areas in the United States. On the basis of what we have seen, can we speculate on what the future holds for private forest management in this region?

Of one thing we are quite sure: If the success of private forestry depends upon profit, and if profit depends upon such factors as rapid timber growth, ample labor supply, and ready access to wood-using plants and markets, then the lower South offers outstanding opportunities for private forestry.

On another point, too we feel fairly certain: The past trend toward good management on large forest holdings will continue. Although the rate of increase in well-managed acreage will vary with general business conditions and although the extent of large holdings will ultimately be limited by the pattern of forest occurrence and ownership, it seems easily possible for the present area of good forestry to be doubled simply through land acquisition and the adoption of good practices by more and more large owners.

But what of the small forest owners? Nothing that we have seen on our tour gives us a sure clue to this critical question.

_Nineteen Fifty_
We might conclude, on the basis of present conditions, that most of the small-owner group can never be induced to practice intensive forest management. Such a conclusion, however, we are unwilling to grant. Small owners hold the majority of the forest lands, and probably always will. These holdings are too important to the public and to industry—they are too large a share of a major resource in this forest region—to be dismissed.

In view of its heavy reliance on these small forests, can industry reform the cutting practice it uses in harvesting wood from them? What shape would such reform take? Regulation by law? On the other hand, will it be better to follow exclusively the educational approach? To make education and technical assistance work, is some sort of forest credit needed? In view of the demonstrated success of large-scale forestry, what are the possibilities of small owners banding together into cooperative associations for forest management and timber processing? Here are questions that bid fair to challenge the forestry profession in the lower South for years to come.

FACTS ABOUT THE AUTHORS

Mr. Duerr graduated from Iowa State College in 1934. Since this time he has worked at the Lake States Forest Experiment Station at St. Paul, the Appalachian Station at Asheville, North Carolina, and the Southern Station. Meanwhile he took time out to get an M.S. degree in agricultural economics and forestry at the University of Minnesota and M.A. and Ph.D. in economics at Harvard. In the Lake States he was a member of the nation-wide Forest Survey organization for a time, and later did research in farm forestry. In the Appalachians his chief job was to head up an integrated survey of land use, farm and forest management, timber marketing, and rural sociology in eastern Kentucky. On the basis of this and other work in the region, he wrote a book, published in 1949, on “The economic problems of forestry in the Appalachian region.” At the Southern Station, his work has to do with the Forest Survey and other economic studies.

Mr. Duerr is at present chairman of a Society of American Foresters Committee on Scope and Method of Research in the Economics of Forestry, whose job is to obtain, and compile into a book, contributions on the subject from some seventy-five foresters, economists and related specialists.

Mr. Bond is a forestry graduate from the University of Michigan, class of 1914, and also has an M.S.F. degree from Michigan. He has been Assistant State Forester in charge of
forest management in Vermont and in Texas, and also Assistant in charge of fire protection in the latter State. For the past twenty years he has worked with the U. S. Forest Service at the Southern Forest Experiment Station. Here he has had charge of the Station's work in the financial aspects of forest management, the field which has long been his primary professional interest. Mr. Bond was instrumental in planning and setting up the Crossett Experimental Forest near Crossett, Arkansas, mentioned in the article as one of the oldest and most famous of the southern experimental forests. Out of this work came his well known bulletin, written with Reynolds and Kirkland, on "Financial aspects of selective cutting in the management of second-growth pine-hardwood forests west of the Mississippi River." Mr. Bond is not only a research worker but also a practicing forest manager, having owned and carried out a profitable program of forestry since 1928 on timber tracts located in Texas and Louisiana. He spent two months in Europe last summer on the proceeds of his most recent selective cuttings.
Woodlots in the Tall Corn State

By Russell E. Getty

Since the turn of the century those people in Iowa who have an interest in forestry have been attempting to show that planting trees, caring for them, and managing woodlots for useful products pays dividends. In the Tall Corn State where the woodland area is estimated to be 6.3% of the total land area, the income from woodlands is reported by the farmers themselves in the census records to be less than 1% of the total farm income. It is small wonder that interest in forestry sometimes lags.

A state such as Georgia with a high proportion of the land area best suited for the growing of wood crops has only recently awakened to the importance of practicing forestry in order to insure a measure of sustained prosperity for the state. Now, through legislation, appropriations and education, the people of Georgia are making great strides ahead in forestry.

The state of Washington, also with a large forest area in the state, in 1945 enacted a forest practices act designed "to maintain continuous growth of timber on all lands suitable for such purposes." Stringent enforcement provisions are contained in the legislation to accomplish the stated purpose of "keeping the forest land of this state continuously and fully productive".

It will probably be a long time before the people of Iowa will consider the collective woodland area of the state of such public importance that legislative control of the productivity of woodlands would be desired. Rather, Iowa, in this regard is included in the national picture presented by J. F. Preston in his recent book, Farm Wood Crops. He states, "The actual income from forest products, including home use, is very low on the average farm and represents not more than 2% of the total income. This is not surprising in view of the fact that this income is derived largely from neglected, uncarred for, untended, and unappreciated wild land." In another place Preston states, "the non-farm holder of forest land generally recognizes his holding as a forest property and hence needs only to be convinced of the value of forest management and marketing practices. The farm owner, on the other hand, frequently is not ready to admit that he owns a small forest property. Part of his farmland is covered by a growth of trees, but in his mind and his plans this may be a temporary condition."

This situation would seem to be amply supported in the many discouraging cases which come to the attention of practicing
foresters in Iowa. In one recent case in the southern part of the state, timber on poor soil and rolling lands was offered for clear-cutting with the understanding that the land would increase in value over $10 per acre without the timber.

In another instance in Johnson county, 2 years ago, a fine 200 acre tract of oak-hickory timber was sold twice within one year. The first sale price was considerably lower than the second wherein it was stipulated that all the timber which the seller could remove within 5 years was to be taken off the land. Incidentally the second sale has been exceptionally profitable for the seller who cut and sold a large volume of stumpage from the tract on a very good market.

Under circumstances where farmers place so little value on the timber in their woodlands, a practicing forester might well wonder whether forestry is losing ground in Iowa. Where should the emphasis be placed in most effectively showing farmers the advantages of good forest management on existing woodlots and the development of new ones?

This highly mobile sawmill is in constant demand by the farm owners of scattered woodlots in north central Iowa.

In an effort to make good woodland management more attractive to farmers, foresters over the United States have recently been emphasizing the importance of higher prices for forest management.
products through better markets and marketing methods. It is argued that if prices are high enough to be attractive desirable silvicultural and management practices will naturally follow.

It was with a view to exploring this line of reasoning that the Forestry Department at Iowa State College set up a research project in 1948 under the Agricultural Experiment Station. The project was entitled "Marketing Farm Forest Products in Iowa." It was to be an exhaustive project to produce detailed information on the character of the woodland resource as well as the character of the market and the particular marketing methods employed.

Several rather extensive surveys of the forest resources of Iowa have been made within the past 15 years. Nevertheless, it seemed desirable to have additional and more specific detailed information than had previously been gathered. To do this with limited funds it was necessary to cover only a fractional area of the state.

A granary on the Russel Lackender farm, providing storage for 5600 bushels of corn and 3600 bushels of small grain, was largely constructed with native lumber from a 5-acre woodlot.

Johnson County was selected as the study area, not because it was considered representative, but because it was not unrepresentative, in that it was neither the most heavily wooded county
An interior view of the granary on the Russel Lackender farm showing a portion of the 3" x 10" hardwood joists, 23 feet in length, obtained from the farm woodlot. Thirty-six of these joists were required.

in the state nor the one most devoid of woodlands. As it turned out the area in woodland in Johnson County is 6.7% of the total land area as compared with 6.3% for the state as a whole. By chance, then, Johnson County is fairly representative of the state from the standpoint of area in forest cover. Johnson County also was considered a good timber growing area. A farm forester has been located there for several years and there were a number of sawmills in operation which would be able to supply pertinent information.

The primary question was: "Can markets or marketing methods be found which will raise the price of Iowa farm forest products to the point where growing of timber crops will be more attractive to farm woodlot owners?"

In answering this question many others arose which had to be answered first. As several of these points of question were investigated it became evident that the home-use of forest products was of major importance. Perhaps in a state like Iowa where the area in forest is small more emphasis should be placed on making the home use of lumber and forest products attractive.

A study of the 38 sawmills of Johnson County revealed that most of the lumber produced was being used on farms within the
county and only a fraction of it was entering industrial channels. Out of a total production of 2,200,000 board feet in 1947, 58% was custom sawing in the form of logs owned by farmers and hauled to the mills for sawing by the farmers themselves. Much of the remaining production of the mills was purchased by farmers who did not have woodlots. Only 2 sawmills out of 38 were producing lumber for industrial uses. Fully ½ of the sawmills in the county were originally purchased because of the inconvenience woodlot owners experienced in getting someone else to saw their logs into lumber. In brief, the sawmill phase of the study pointed out that the farmers interest in native lumber was strong even when the industrial market demand was at its peak.

In order to obtain information on the home use of forest products from the farmers themselves, a questionnaire was prepared and personal interviews were conducted on a random sample representing 10% of the 2340 farms in Johnson County.

**TABLE NO. 1**

**FARM WOODLOT PRODUCTS USED ON THE FARM IN JOHNSON COUNTY IN 1948.**

<table>
<thead>
<tr>
<th>Product</th>
<th>Average per Farm</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuelwood</td>
<td>4</td>
<td>Cords</td>
</tr>
<tr>
<td>Posts</td>
<td>63</td>
<td>Number</td>
</tr>
<tr>
<td>Native Lumber from own Woodlot</td>
<td>575</td>
<td>Board feet</td>
</tr>
<tr>
<td>Native Lumber purchased</td>
<td>421</td>
<td>Board feet</td>
</tr>
<tr>
<td>Total Native Lumber Used</td>
<td>996</td>
<td>Board feet</td>
</tr>
</tbody>
</table>

In a county where 92.7% of the farms have electric power lines leading into their buildings and 89.7% have telephones in their homes, one wouldn't expect many wood-burning stoves and furnaces. Actually, however, 47% of the farms use wood for fuel, averaging 8.5 cords per farm per year for this purpose. Of the 1090 farms using fuel wood only 850 had their own woodlots and 240 obtained fuelwood from sawmills and neighbors. The total fuelwood consumption in Johnson County was 9270 cords or almost 4 cords per farm in the county.

Home grown wood posts are still in demand for fencing. The survey shows that 20.2% of the posts of Johnson County are steel, 74.5% are untreated wood posts and 5.3% are treated wood posts. With 977 rods of fence per average farm of 166 acres, 61 posts were purchased in 1948 and 63 were obtained from woodlots. Of the 61 posts per farm purchased 23.4% were steel, 26.2% were wood with a preservative treatment and 50.4% were untreated wood. Only 1 person among those interviewed had made any attempt to treat posts obtained from a native woodlot with a preservative.
The amount of lumber used on a farm is difficult to determine accurately since records of such use are not maintained and it is necessary to rely on the memory of the farm operator. After having heard the explanation of the purpose of Home-use of Lumber Survey the farmer being interviewed would often begin by saying he hadn't used any lumber in 1948 or that he had used so little that it wouldn't be important to the interrogator. Then as the interview progressed he would recall one small repair or construction project after another which in the aggregate amounted to a substantial volume of lumber used. Consequently, the estimate of lumber used in 1948 is expected to be low since some construction and repair work was, no doubt, forgotten.

Another factor contributing to a low figure on the use of lumber on the farm in 1948 was the general economic outlook at that time. Most farmers had more available cash than ever before and they also had accumulated a large backlog of building and repair projects which they were eager to start. However, with lumber prices unprecedentedly high and with much talk of an impending economic depression, many held up their building plans. To have a basis for evaluating the tabulated total home use of lumber each person interviewed was requested to compare the amount of lumber used in 1948 with that used during the preceding years he had occupied that particular farm. Considering the fact that the average tenure was 14 years some basis for comparison was available. Only 16% stated they had used more than the average amount whereas 47% considered their 1948 use of lumber below average and 37% stated it was about average. Another point of importance is that this estimate of lumber use on the farm did not include any new houses or large barns.

It is probable that the 1702 board feet of lumber used per farm in Johnson County in 1948 is lower than the actual average use. Although it was somewhat surprising to find that 60% of the lumber used on farms was native lumber, this indicates its rather general popularity.

A question arose relative to the size of native woodlots and their distribution in the county. Only 48.7% of the farms in Johnson County had woodlots. These averaged 21.07 acres per farm, which amounts to an average of 10.25 acres per farm for all farms in the county. Can this acreage supply more lumber than the local farm population will demand? It obviously can under good management produce more native lumber than is now being used. However, the demand for native lumber has great possibilities for expansion. It is significant to note that the total "lumber from own woodlots" and the total "native lumber purchased" as reported by farmers in 1948, table No. 2, exceeds
The farm home of Joseph Cculcll in Johnson County. Most of the lumber used in this beautiful, brick-veneer house was produced from the owner's woodlot. The total sawmill production for Johnson County for the preceding year.

**TABLE NO. 2**

**LUMBER USED PER FARM IN 1948 AS REPORTED BY THE FARM OPERATORS OF JOHNSON COUNTY.**

<table>
<thead>
<tr>
<th>Type of Use</th>
<th>Lumber Purchased from Lumber Yards (Board feet)</th>
<th>Lumber from Own Woodlot (Board feet)</th>
<th>Native Lumber Purchased (Board feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houses</td>
<td>339,920</td>
<td>2,000</td>
<td>231,250</td>
</tr>
<tr>
<td>Barns</td>
<td>54,600</td>
<td>102,000</td>
<td>250,750</td>
</tr>
<tr>
<td>Hog houses</td>
<td>147,700</td>
<td>140,000</td>
<td>147,700</td>
</tr>
<tr>
<td>Poultry houses</td>
<td>3,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain storage</td>
<td>415,960</td>
<td>577,640</td>
<td>301,900</td>
</tr>
<tr>
<td>Machine sheds</td>
<td>242,150</td>
<td>219,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Gates</td>
<td>76,450</td>
<td>26,500</td>
<td>52,500</td>
</tr>
<tr>
<td>Fences</td>
<td>172,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General repairs</td>
<td>65,500</td>
<td>74,000</td>
<td>38,500</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>222,030</td>
<td>32,500</td>
<td>38,250</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>1,651,810</strong></td>
<td><strong>1,345,790</strong></td>
<td><strong>985,650</strong></td>
</tr>
<tr>
<td><strong>Average per farm in the county</strong></td>
<td><strong>706</strong></td>
<td><strong>575</strong></td>
<td><strong>421</strong></td>
</tr>
<tr>
<td><strong>Percent</strong></td>
<td><strong>41</strong></td>
<td><strong>34</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

There are several ways in which the home use of lumber might be made more attractive. For one thing the process of converting logs into lumber could be made more convenient by

_Ames Forester_
Except for the siding and shingles, this barn on the Joseph Coufal farm is constructed entirely with native lumber.

having a highly portable mill in an area such as Johnson County. Observations in this study indicate that a portable sawmill, which is highly mobile and will move into a farm woodlot for as little as 2,000 to 5,000 board feet, offers a great service to the woodlot owner. It would seem that the encouragement of such a portable sawmill should be considered by foresters attempting to make the management of small woodlots attractive to a farm owner. There are a number of portable sawmills throughout the county which serve as successful patterns of operation.

One such portable sawmill owner in a relatively woodless portion of the state is limiting the radius of operation to 30 miles and making a very satisfactory livelihood at a nominal sawing charge. That the woodland owners of the area consider this a service is evident by the fact that at the present time this mill is fully scheduled with sawing jobs one year in advance, and all jobs have come to the sawmill operator unsolicited during the past 6 years.

More publicity might be given to case histories within an area which will demonstrate the advantage of using native wood over other woods. For instance in Johnson County a double granary was built on the Russel Lackender farm south of Iowa City. The building plan specified 3" x 10" stringers 23 feet in

*Nineteen Fifty*
length which would support a 3600 bushel small grain bin. The Lackender farm had a 5 acre woodlot which had been retained for the specific purpose of building new farm buildings or replacing or repairing old ones as the need arose. Much better stringers of the sizes needed were obtained from the home woodlot than could be purchased any place.

Another case which was discovered during the course of the survey seems to have great possibilities for teaching woodlot owners the value of native lumber. Joseph Coufal, retired farmer and former sawmill operator in Johnson County maintains that if properly manufactured and processed Iowa lumber is better building material for farm home and building construction than any lumber on the market. This is no idle boast since his beautiful farm home, garage, barn, chicken house and other farm buildings, constructed almost entirely of native material, are monuments to the native woodlot.

Mr. Coufal’s spacious, 8-room, brick-veneer farm home has native oak joists and studding. The sheathing and sub-flooring are all native lumber. Each of the 4 bed rooms has a large lighted closet with a built-in chest of oak drawers and shelves in natural finish. All rooms, halls, and closets are finished with clear oak flooring which came from the farm woodlot but was kiln dried and made into flooring by a local sash and door company.

Mr. Coufal’s procedure for success in handling native lumber is well known but seldom so carefully followed. In the first place he sawed his lumber accurately. Then he piled it carefully to avoid staining and weathering and to dry it properly. All pieces selected for trim and finish or for places where shrinkage through further drying was undesirable were air dried in a barn loft for two years. Everything was run through a planer to insure uniformity in size. This included studding, floor joists, sub-flooring and sheathing. Finally an electric power drill was used in toe-nailing studdings to plates and wherever splitting was likely to occur. Even the barn and other buildings were built of well seasoned and dressed lumber from the native woodlot and the electric drill was used liberally.

There are many other cases of home use of native lumber throughout Johnson County and the state which could be effectively publicized to encourage greater use of native lumber at home.

As a final suggestion more information should be available to the woodlot owner, and the owner of land which is best suited for forest crops, on the actual return being realized from certain wooded areas similar to the average farm woodlot. Case histories covering a long period of time are needed for this purpose and
are beyond the scope of the current studies reported here. It is probable that if accurate records are kept it will be found that the woodlot, even as it now exists figures much more prominently in the modern farm operation than the owners themselves realize.

FACTS ABOUT THE AUTHOR

Mr. Getty graduated from Iowa State College in 1936. While in school he was a member of Alpha Zeta and had membership in the Society of American Foresters. It is interesting to note that during his freshman, sophomore and junior years he won first in the Lathrop Pack Prize Essay Award. Upon graduation Mr. Getty worked with the Indian Service. During the war years, he served in the Navy. Mr. Getty is at present an assistant professor of forestry at Iowa State College and is in charge of research.
Fifty Years Progress in Managing Ponderosa Pine in the Pacific Northwest

C. O. BORSTING—FORESTER
Weyerhaeuser Timber Company
Klamath Falls Branch

For fifty years ponderosa pine has experienced a unique spot in American forestry. It has not suffered the severe depredations of its Eastern pine cousins. By the time the westward march of lumbering had reached the vast stands of western yellow pine serious thought, as well as action, was being advanced by foresters in public and private service alike.

Because of existing tax structures covering timber lands fifty years ago, the usual logging practice was to remove all the merchantable volume on an area. If the land was to be retained by the owner, regeneration and a future cut were left in the hands of nature. In many instances the cut-over land was converted to agricultural purposes. This proved to be a serious error on much marginal land in the lake states; and the lesson learned by timber owners aided the advancement of western forest management.

At the turn of the century forest practices in ponderosa pine were not good; to say they were, would be inconsistent with the efforts and advancements made for foresters for two generations. From 1900 to 1925 the majority of operators removed practically all merchantable trees; the operations were small and horses were generally employed in skidding. Because of the nature of the pine forests small trees were left intact and capable of increased growth. These areas that escaped denudation from slash fires now support excellent stands of reproduction and poles.

Some action was being given fire protection and steps to organize a protective association were taken in 1908. However “light burning” was sometimes practiced in the virgin forests with the theory in mind that this was desirable fire prevention. Subsequent growth of grass and brush made continued burning necessary, which in turn caused soil deterioration, death to reproduction, fire scars, and continued aggravation of existing fire scars. On some areas which did not escape the ravages of slash burning the fires killed all the reproduction and brush and grass have taken over.

Fire control gradually improved until now a great deal of money and effort is expended annually by the land owner in pro-
A reserve stand of ponderosa pine after the main harvest. The tree at left and the one right of center will be removed 40 years hence. Trees in the background will make up the second and third cuts 80 and 120 years hence. Although compulsory laws now require slash burning, new methods control the fires and hold the damage to the reserve stand at a minimum. At first "broadcast burning" was carried on exclusively. This caused too much damage to reproduction when weather conditions were not right. Hand piling of slash was then instituted. This obtained the desired results but proved to be expensive and time consuming. With increasing mechanization of woods operations the mechanical slash piler has come into the picture. This makes it possible to move slash as well as cull logs and other debris into large piles

Nineteen Fifty
which can be burned without damage to the reserve stand. It also has some scarifying effect on the ground; thus preparing it for natural regeneration.

The manager of ponderosa pine in the Pacific Northwest has from necessity changed his methods of handling virgin stands. In attempting to change a wild forest, which is static in growth, to a managed forest capable of producing maximum yield, the forester now bases his actions on the behavior of the western pine beetle. Ecological and economic factors still enter the picture, but are worked into the plan of operation.

The western pine beetle is a native of the ponderosa pine

The large class 4B tree (center) is a typical cut. Notice the thrifty stand of poles in the background.
region. He has been killing overmature, decadent, and weakened pines for centuries, but only within the last 50 years or so was the western pine beetle recognized as a primary tree killer. It was not until about 1917 that his destructiveness was appreciated. Along about this time a prolonged series of drought years began causing a marked decline in tree growth. With this weakening of tree vigor, western pine beetle destruction mounted rapidly and timber owners began to recognize this tiny killer as a serious menace to their property.

Originally attempts were made to selectively log pine stands on an economic basis. Only those trees that the operator felt would pay their way were removed. This process left a reserve stand, but it contained a high proportion of what we now know to be risk trees. These are the less vigorous trees capable of supporting broods of the western pine beetle. A western pine beetle attacking one of these susceptible, or risk, trees is capable of producing about nine adults for each attacking adult. It takes little imagination to realize what such an influx of bark beetles can do to the remaining stand. In contrast to this the insect production is almost in reverse ratio to the above when the bark beetle attacks a vigorous tree.

The Bureau of Entomology and Plant Quarantine has done an excellent job in ferreting out the behavior of the bark beetle, and methods of control were established on the basis of their findings. This developed into a large scale operation after a peak epidemic in 1932. “Bug crews” were used in this work. The object of these crews was to fall and peel all brood trees, which were then burned. No attempt was made to salvage the trees. This reduced the loss temporarily, but did not remove the weak or risk trees. As a result the bark beetle was able to continue its depredations.

With this situation confronting foresters attempting to put wild forests under management, the logical approach was to remove all infected trees as well as those highly susceptible to insect attack. By so doing the land owner would also realize a return on the material removed. The problem then arose—how can a susceptible, or risk tree, be distinguished from one not susceptible? F. P. Keen of the Bureau of Entomology and Plant Quarantine was instrumental in solving this problem. He devised a tree crown classification using Dunning’s seven classes as a basis. As a result of Keen’s studies* and work we now have a tree classification based on four categories for age and four on crown vigor. With these refinements it is possible to identify the trees by classes


Nineteen Fifty 61
The large 4C (left) and the 4B (right) are removed in a harvest cut. In a salvage cut designed to protect the stand for a relatively short period, the 4C is cut while the 4B is retained for a future harvest.

and select those most vulnerable to insect attack in marking a particular stand.

In designing a cutting practice for a timber stand it is necessary that it fit the hazards of the timber. In ponderosa pine our major hazard is the risk fraction. The risk fraction is so called because 85 per cent of the loss will normally occur in this 15 per cent of the stand. The trees making up this group are the C and D crowns in Keen's classification. The remaining portion of the stand is broken into two categories. Sixty per cent of the stand contains the mature or the stable fraction. These may be crown
classes A, B, and C in the mature or age class III. In this group we find the current growth offsetting loss, and the individuals are relatively safe for storing for a future cut. The other 25 per cent of the average forest is the growing stock, and is retained for the harvest in the second or third cutting cycle. This group is the productive fraction of the stand.

Considering these three fractions of the stand we can draw up a cutting plan giving consideration to the economic and ecological factors involved. Suppose we have a tract of timber that must be developed for railroad logging as opposed to a truck haul. This naturally involves a large investment for development, and requires the maximum cut allowable to realize a return on this investment. By removing the risk fraction (15 per cent of the stand) and the stable fraction (60 per cent of the stand) we are able to satisfy both conditions. We have a fairly heavy cut, to offset the cost of development; and we can expect to earn a reasonable rate of interest on the amount invested in the reserve stand, which produces about 85 per cent of the maximum available growth. With this type cut our cutting cycle is set at 40 years. We will utilize all undesirable trees (small mature trees—Keen’s classes 3D and 4D) insofar as they are merchantable. We will also remove high value trees that would be exposed to loss.

A stand of thrifty mature ponderosa pine. The groups of reproduction in the background will be released for a future cut.
before a return cut is made. These conditions as well as those covering mechanical defects are incorporated in the marking rule.

We may next take into consideration an area lending itself to a lighter harvest. This would be one more accessible than the previous example; one suitable to truck development. Here we will develop a cut designed to a 20 year cycle. The marking rule again requires the removal of the 15 per cent risk fraction plus one half the stable fraction. This will leave the growing stock and the vigorous mature half of the stable fraction. The per cent return on the investment in reserve timber will be reduced to one half the return rate realized on the heavy cut, but the growth rate would rise to near maximum capacity. Other conditions involved in making such a cut feasible would be to accelerate conversion of a timber tract to a producing unit, and to secure reproduction where natural regeneration is a factor.

The third type cut, now becoming an increasingly important tool to the forest manager is the sanitation salvage. This is essentially a flexible light cut; the amount of timber removed from the stand may vary according to the character of the stand and the degree of protection desired. It is designed to cover large tracts of timber rapidly, removing the susceptible fraction of the stand, thereby recovering material that would normally be lost. The per cent cut can be geared to the period that will elapse between the salvage cut and the main harvest, which is the protective period. Any stands that will be reached within five years are not treated, except perhaps to remove merchantable dead trees. In a stand needing protection for ten or fifteen years a cut of 10 per cent will probably suffice.

This cut consists of the more susceptible trees in the 15 per cent of the stand we know as the risk fraction. Experience has shown that about 80 per cent of the loss which would occur in the next ten years will be prevented by this type cut. Similar cuts are designed, and marking rules established, for each area depending on the protective period desired. The actual removal of the material from these stands is done with relatively mobile equipment. Existing roads are used when possible to make the truck hauls, and development costs are kept at a minimum.

In summarizing fifty years of progress in ponderosa pine management in the Northwest the forester found the western pine beetle his most important factor of control. For over twenty five years pine beetles have depleted mature and overmature pine forests faster than the forests have grown. As a result the harvesting of ponderosa pine has developed into a race between the beetles and the land owner in an attempt to convert the forests
into manageable units. After attempting control methods which were costly and provided no yield to the land owner, the trend has been toward lighter cuts in an attempt to beat the beetles at their own game. New techniques and equipment for logging have and will in the future give the land owner a decided advantage.

FACTS ABOUT THE AUTHOR:

1. Graduated from I.S.C.—1940
2. Employed in U.S.F.S.—1940-1942
4. Secretary-Treasurer, Shasta-Cascade Chapter Society of American Foresters—1946-1948
The Department
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Asst. Extension Forester . . . E. T. Gardiner
Research Graduate Asst. . . . Dean W. Einspahr

Nineteen Fifty
TO THE SENIORS:—

GOOD TIMBER

The tree that never had to fight
For sun and sky and air and light,
That stood out in the open plain
And always got its share of rain,
Never became a forest king
But lived and died a scrubby thing.

The man who never had to toil
To rise above the common soil,
Who never had to win his share
Of sun and sky and light and air,
Never became a manly man
But lived and died as he began.

Good timber does not grow in ease;
The stronger wind, the tougher trees,
The farther sky, the greater length,
The more the storm, the more the strength;
By sun and cold, by rains and snows,
In tree or man good timber grows.

Where thickest stands the forest growth
We find the patriarchs of both,
And they hold converse with the stars
Whose broken branches show the scars
Of many winds and much of strife—
This is the common law of life.

—Author Unknown
Seniors
INCREMENT BORINGS

With the establishment of adequate reproduction the time has come for the annual clear-cutting of one-fourth of the area of the productive Forestry Department.

As is evidenced by stout boles and many individuals with thin crowns, this stand is a bit older than those usually harvested in this area. Adverse growing conditions during the period 1941-1945 made this longer rotation period necessary.

This final volume, nurtured by necessary improvement cuts to remove inferior species and thinnings to eliminate poor desirables (especially those with impaired terminal buds), is being placed on the market. To the average buyer, these fully mature individuals should yield only high quality materials.

Since the material to be removed in this cutting cycle will be bought on the stump, it is only fair that some indication of soundness be given. These individual increment borings arranged on the following pages may help.
EUGENE ADAMS—Conesville—Summer Camp ’46
Range management is Bill’s field of interest. As for hobbies, Bill enjoys hunting, fishing and trapping, especially muskrat (in or out of season). He is a go-getter that gets things done.

TED ALLEN—Springer, N.M.—Summer Camp ’47
Ted’s fields of interest are utilization and forest management; worked at logging for the Weyerhaeuser Timber Co. at Washington. Photography and hunting are his hobbies. With a smiling, carefree attitude, Ted accomplishes a lot socially.

MARVIN AMENDT—Sutherland—Summer Camp ’48
Lumbering is Marv’s major interest; worked in direct sales capacity. Marv gets a lot of satisfaction with his family, and hunting, fishing and trapping.

ARDEN ANDERSON—Ledyard—Summer Camp ’47
Arden’s primary interest is in utilization. He worked at the Iowa State Nursery for his summer experience. Arden is best known for his unfailing good humor.

CHARLES ANDREWS—Villa Park, Ill.—Summer Camp ’48
“Spook’s” field of interest lies in timber management; worked for the USFS in ’49. “Spook’s” curiosities are satisfied with photography and stamp-collecting. Having many fine attributes, he should be a success in whatever he undertakes.

DON BARKER—Benton—Summer Camp ’48
Don was a lookout on the Helena Natl. Forest in ’49. His interest lies in Forest Products and private industry. His hobbies are fishing and basketball, the latter of which he is no amateur.
CHARLES BARNES—Knoxville—Summer Camp '46

"Charlie" likes to hunt and take pictures. We hope he had plenty of both when he worked for the Forest Service in '48. His field of interest is range management. "Charlie's" a diligent, industrious sort of fellow and accomplishes much.

T. W. BLOMQVIST—Chicago—Summer Camp '47

Research and management are Warren's chief interests. As experience Warren sites his two summers in Blister Rust control in Mont., and one summer in a Chicago lumber yard. Hunting is his main hobby. Warren knows much more than meets the eye.

LYLE BOUSTED—Woodbine—Summer Camp '47

Forest utilization is what "Sheriff" wants to get into and has obtained some good experience by working for a sawmill as well as with his dad's construction company. Hunting is his main hobby. When you think of a smile, you think of "Sheriff".

WILLIAM BRABHAM—Elkader—Summer Camp '47

Bill is a timber and wildlife management man; worked at logging and milling in N.E. Iowa. A few of Bill's ardent hobbies include hunting, fishing, trapping and stamp-collecting. Bill can put more English on a cue ball than most people can on paper.

WILLIAM M. BYERS, JR.—Marshalltown—Summer Camp '47

Bill is interested in range and wildlife management. He worked as a lookout in the Lewis & Clark Natl. Forest in '49. For hobbies he lists photography and hunting. Being interested in the higher portals of learning, Bill married a school teacher.

LEONARD CAMERON—Boone—Summer Camp '48

Leonard's interest is general forestry; worked at carpentry in home town. His hobbies include hunting, fishing and telling stories. He excels in stories about Boone.
BENJAMIN CARSON—Horn, Minn.—Summer Camp ’47
Ben is a forest products man; worked for the USFS as fire lookout and guard on the Boise Natl. Forest; operated a sawmill in Ontario, Iowa. A friendly, likeable fellow, Ben is perhaps this year’s best story-teller, and as for his mechanical abilities, just ask anyone Ben has worked for.

CHARLES CESAR—Des Moines—Summer Camp ’47
Chuck’s main interest is range management; worked in a sawmill, in the woods, and as time-keeper on logging operations. Chuck derives a lot of pleasure from photography, hunting and fishing. With his ingenious ways of doing things, he gets a lot accomplished.

DON CLAY—Hampton—Summer Camp ’47
Don’s main field of interest lies in range management. Don worked on trail maintenance and suppression in Glacier Natl. Park and cruising on the Apache Indian Reservation. Among other hobbies, Don likes to hunt and fish most of all. He has been very influential in the management of the Holst Tract.

HOWARD R. CUSHMAN—Bethany, Mo.—Summer Camp ’47
“Cush” is a great hunter and fisherman. Just ask him about quail and he knows the best places. Timber management is his field of interest. “Cush” has a smile for everyone.

FRANK DOUGHERTY—New Market—Summer Camp ’47
The park service or range work meets Frank’s fancy; worked as a timber cruiser in Ft. Collins, Colo. in ’48. Last heard, one of Frank’s main hobbies was motorcycling. When it comes to hard work, Frank is right there.

JOHN ECKSTEIN—Webster City—Summer Camp ’48
John has pointed toward timber management during his college career. To augment his knowledge, John worked one summer in a sawmill. Hunting and fishing are his main hobbies. A hard-working family man, John uses every minute wisely.
PALMER ERICKSON—Jewell—Summer Camp ’47
“Eric’s” field of interest is wildlife management and he gained some valuable experience by working on a fish survey with the State Conservation Commission. Eric lists all types of sports and hunting and fishing as his hobbies. Good looks and good gray matter should do well for Eric.

JOHN EVANS—Webster City—Summer Camp ’47
John is a range management man; worked with the USFS in Idaho in 1947, in Arizona in 1948, and with the Bureau of Land Management in Alaska in 1948. John is one who can always be counted on to do more than his share.

ARNOLD EWING—Fort Dodge—Summer Camp ’48
Arny is interested in timber management; worked for the USFS in Minn. He is one of the sharpest foresters on campus and at present is president of the Forestry Club. When it comes to training dogs, Arny is a whiz.

JIM FASSETT—Webster City—Summer Camp ’48
Wildlife management is Jim’s field of interest. If you can’t tell one duck from another, just ask Jim and he will straighten you out. For hobbies, he likes to hunt, fish, and trap. Just an all around good guy and always willing to lend a hand.

CLIFFORD DEAN FINCH—Webster City—Summer Camp ’47
Dean likes to tie flies, hunt and fish. He hopes to get a position with the Forest Service where he can do a lot of hunting and fishing. Dean worked in Wash. for the Forest Service in 1948. A steady persistent fellow, Dean should do well.

JACK O. FINLEY—Batavia, Ill.—Summer Camp ’48
Jack worked on a Fire Suppression Crew on the Willamette Natl. Forest. His major interest while in college was wood utilization. Not satisfied with generalities, Jack likes to delve into details.
ALAN FISHER—Marion—Summer Camp '48
Utilization strikes Al's fancy; worked at surveying for experience. A couple of Al's hobbies are golf and hunting. Al is best known for his quiet sense of determination.

EARL E. Fritchter—Roscoe, Cal.—Summer Camp '48
Earl worked for the U.S. Bureau of Reclamation for experience and this was a great help in gaining information that will help him in the field of conservation. His interests are hunting and fishing. With a sense of intent determination, Earl is a good student.

DAVID J. FYE—Cresco—Summer Camp '48
"Dave" has no favorite sport, but likes to participate in them all. He worked on the Pike Natl. Forest and in a lumber yard. "Dave" hopes to get into Range management upon graduation. He is perhaps known for his acceptance of responsibility.

OSCAR GABRIELSON—Jewell—Summer Camp '48
"Gabe's" interest is the USFS; worked in the CCC for 15 months. "Gabe" lists amateur radio operation as a hobby. A quiet, agreeable guy, nice to have around and work with.

WALLACE B. GALLAHER—Fayette—Summer Camp '47
"Wally" excels in fly-tying and has numerous flies of his own styling and make. Naturally, Wally likes to fish. He worked on a Game fish survey for the Iowa Conservation Commission. He hopes to get into the Forest Service. An intelligent fellow, Wally gets the gist of things in a hurry.

JACK GATES—Des Moines—Summer Camp '48
Jack's field of interest is utilization; worked for both the USFS and the USFS. Golf and hunting are Jack's means of relaxation. It is a pleasure to know someone with a friendly, courteous attitude characterized by Jack.
JAMES GILL—Napierville—Summer Camp '48
Range management or utilization is Jim's goal; worked for USFS on the Willamette Natl. Forest and also in a retail lumber yard. Jim likes all sports, especially hunting and fishing. A quiet, industrious fellow who knows more than he lets on.

LOWELL GLEASON—Webster City—Summer Camp '47
Like all good foresters, Lowell likes to hunt and fish; worked at Consolidated Water Power Co. in Wis. and with the Bureau of Land Management in Mont. Lowell is best known by his attitude of complete composure.

PHILL GRIMES—West Union—Summer Camp '47
Phill's interest lies in forest management; worked at logging and milling in N.E. Iowa. Phill's hobbies include hunting, fishing, stamp-collecting, and playing cards. Those who attended '47 summer camp are familiar with Phill's culinary powers. Holds a tie with Evans when it comes to lending a helping hand.

ART HADECEK—Clutier—Summer Camp '47
Art is interested in general forestry; worked in suppression and presuppression in both Oregon and Wash. A few of Art's hobbies include hunting, photography, flying and mechanics. If you want to know how to sing in your sleep in the church choir, ask Art.

CARL HAKENSON—Council Bluffs—Summer Camp '48
Range management meets Carl's fancy; worked as a cruiser for Diamond Match in Wash. Carl greatly enjoyed his weekends in Coolin, Idaho during summer camp. A neat-looking fellow who knows what he wants.

RUSS C. HAMMOND—Brckaw, Wisc.—Summer Camp '48
Timber management is Russ' field of interest. He has worked at the Wausau Paper Mills Co., Wausau, Wisc. His hobbies are hunting, fishing and skiing. Russ ranks high in the minds of those who know him.
ROBERT HANSEN—Marble Rock—Summer Camp '48
Bob's interest lies in the USFS, and forest products; worked for the Weyerhaeuser Timber Co. in Wash. His hobbies include baseball, bowling, and hunting. Bob ranks high in self-reliance and determination.

ORVILLE HATCHER—Glenwood—Summer Camp '48
Orv's major interest is in wildlife management; worked on fire patrol on the Challis Natl. Forest in Idaho. Hunting, fishing and competitive sports suit Orv's energy. Best known for his cheerful attitude.

ROBERT HENNINGS—Dubuque—Summer Camp
Utilization suits "Chick" as a major interest; worked in a sash and door factory for two years. Bob's hobbies include hunting, basketball and pinball, the latter of which he does very well.

LOWELL HORTON—Murray—Summer Camp '47
"Ed's" major interests lie in range management and range research; worked on the Kaniksu Natl. Forest and in Wyoming on range survey. Among others, a couple of Ed's hobbies are photography and taxidermy. Best known for his solo flights at summer camp.

DON JIRSA—Cedar Rapids—Summer Camp '47
Don's interest lies in general forestry; worked as fire lookout in Wash. His hobbies include hunting, fishing and mechanics. A fitting description could well be "To find a way or make one".

BOB JONES—Atlantic—Summer Camp '47
Bob's field of interest is USFS; worked at tree surgery in Ames. His hobbies are hunting and fishing. Bob is adept with books as well as with the axe.

Nineteen Fifty
MICHAEI KAGEORGE—Highland Park, Ill.—Summer Camp '48
Mike's major interest is in silviculture; worked in a USFS Exp. Station in Idaho, and in woodland management. Mike is really the outdoor type as proved at summer camp. A good family man and a diligent worker.

WENDEL KALEN—Boone—Summer Camp '47
Wendel is interested in wildlife management; worked for the USFS and at logging in Iowa. Wendel is a likeable, handsome fellow with an ardent love of guns—and birds.

ALEX KALOVICH—Kenosha, Wisc.—Summer Camp
The fine art and practice of silviculture are what Alex has spent his four years learning here at I.S.C. He likes all types of sports and reads a great deal.

TOM KEISTER—State College, Ark.—Summer Camp '48
Tom likes track and tennis best of all the sports. His field of interest is Forest management and he gains valuable information while working for the Forest Service during the summer.

VINCENT KENNEALLY—Strawberry Point—Summer Camp '47
Vince's field of interest is general forestry; worked at farming. His hobbies include hunting, fishing and trapping. Vince is known for his unfailing wit.

HUGH KINGERY—Winnetka, Ill.—Summer Camp '47
Hugh's interest lies in forest products; worked a couple of summers as Park ranger in the Mt. Rainier Natl. Park and one summer as a tree surgeon in Illinois. Hugh, a fellow with a lot of personality, should do well in whatever he enters.
CHESTER KNOLL—Webster City—Summer Camp ‘48
"Shorty" is a general forestry man; worked on Medicine Bow National Forest. He enjoys hunting and fishing. "Shorty" is the "sawed-off" guy who is liked by everyone.

BLAINE KNP—Des Moines—Summer Camp ‘48
Blaine is a timber management man; worked with fire control on the Boise Natl. Forest. Blaine is without a doubt one of the sharpest students of his class.

WAYNE KUEFNER—Des Moines—Summer Camp ‘48
Wayne is a private industry man; worked at a nursery in Des Moines and Quagl Lbr. Co. Wayne’s hobbies include sports, hunting, and singing. He has a full line of activities, and among other things, is this year’s editor of the Ames Forester.

RICHARD LARSON—Keokuk—Summer Camp
Dick is a general forestry man; worked on the Superior Natl. Forest. He is a quiet, industrious fellow who knows how to get things accomplished without supervision.

FRED LENDMAN—Sterling, Ill.—Summer Camp ‘47
Fred did some reforestation work for the Oregon State Dept. of Forestry and he hopes that this will aid him in his field of land conservation. Wood-working, hunting and fishing are his hobbies. An alert guy, Fred usually knows what’s going on.

MORRIS LENZ—Independence—Summer Camp ‘47
Morris is interested in general forestry; worked on the Superior Natl. Forest in ‘48. All those who know him know it’s hard to find anyone more congenial and big-hearted.

Nineteen Fifty
JAMES LE ROUX—Sherry, Wisc.—Summer Camp '47
Jim is interested in silviculture and management; worked for Consolidated Water Power and Paper Co. in Wisconsin. He likes to hunt and fish. Jim is a flashy man on campus.

ART LOVRION—Spencer—Summer Camp '47
Art is interested in utilization; worked for Weyerhaeuser Lbr. Co. in Wash. Art's major hobby is fishing. With a quiet, unassuming attitude, Art's mental abilities can fool one.

DONALD E. MANN—Council Bluffs—Summer Camp '47
Don worked with a regional fire crew on the Columbia Natl. Forest for his experience. His field of interest is appropriately forest protection. For a hobby, Don lists flying of which he does a lot. Don is best known for his exactness in surveying.

GERALD MARSHALL—Newton—Summer Camp '47
"Jerry's" fields of interest are private forestry and soil conservation; had tree removal business one summer and small sawmill another summer. Jerry likes wood and metal working for hobbies. Ties with Sapousek for guitar playing.

DONALD MAYNARD—Durango, Colo.—Summer Camp '48
Don's interest lies in forest products and the USFS; worked for the USFS on the San Juan Natl. Forest doing trail construction and trail maintenance. A hard-working, conscientious fellow, Don is a nice guy to have around.

JAMES W. MILLER—Ringsted—Summer Camp '47
Wayne's major interests are in sales work and the USFS; worked in the Savenac Nursery, Iowa State Nursery, and in tree-removal. Wayne's one big hobby is hunting and is especially lucky during duck season.
ROBERT MUHM—Britt—Summer Camp '47
Utilization satisfies Bob's major interest; picked the hard way of getting experience by working as a smoke jumper. Bob's one big hobby is fishing. A sharp fellow with a witty tongue.

BRUCE PLUM—Newton—Summer Camp '47
Bruce is a private industry man; worked one summer in a sawmill in Eureka, Cal., and another summer in the USFS in Colo. If you are in doubt about anything, Bruce has the word and is always willing to give it to you.

GLEN POTTER—Marshalltown—Summer Camp '47
Glen had two enjoyable summers working for the Forest Service on the Clearwater. His field of interest has been centered around field management. Glen lists all types of sports as his hobbies. Sincere, industrious, everyone likes Glen.

WILLIAM F. PRICE—Keokuk—Summer Camp '47
Bill's main interest is to get into private industry. His experience was to work for the Forest Service in Oregon in '48. Sports are his hobby. Neat and clean-cut best typifies Bill.

ROGER RAMSEY—Sheldon—Summer Camp '47
Rog is interested in fire protection; worked at fire lookout and fire fighting. His hobby is hunting. Rog is fortunate in having both a strong back and good mind.

CALVIN RANDOLPH—Spencer—Summer Camp '48
Cal's field of interest is logging and lumbering; worked as choker-setter for Weyerhaeuser. His hobbies are hunting and fishing. We hear that Spencer is getting wetter.

Nineteen Fifty
LYLE RAUN—Storm Lake—Summer Camp
Lyle's big interest is the USFS. Hobbies are hunting and fishing. Lyle is best known for his expression—"Schwell".

DONALD RIDDLE—Denison—Summer Camp '47
Don is interested in the USFS; worked as a tractor operator on the Chippewa Natl. Forest. An ardent hunter and fisherman, Don has the know-how on both.

WILLIAM B. ROZEBOOM—Rock Valley—Summer Camp '48
"Rozie" worked at Superior Natl. Forest and wants to get in the Forest Service upon graduation. His hobbies are fishing and hunting. Best known for his social activities.

WAYNE RUSH—Lake Park—Summer Camp '47
Wayne says utilization is his field of interest; worked for the Gilcrest Lbr. Co. in Des Moines for experience. Hobbies include all types of sports.

OLIVER SAPOUSEK—Omaha, Neb.—Summer Camp '47
"Ollie" lists private industry as his field and received a great deal of experience working for the Diamond Match Co. As a hobby, "Ollie" lists collecting relics and firearms. Best known for participation in forestry activities, and ballad singing.

WILLIAM SCHLICK—Ames—Summer Camp
Forest management and protection are Bud's interest; worked two summers on the Cabinet Natl. Forest in Mont., one summer on the Pinchot Natl. Forest, and another summer for the Weyerhaeuser Tbr. Co. in Oregon. The hobbies are hunting, athletics and reading. It's ironical that Bud didn't major in civil engineering.
HAROLD F. SIMON—Fairmont, Minn.—Summer Camp ’48
Harold did some lumber yard work for his experience and this should help considerably in his field of utilization. For a hobby, he lists collecting Indian arrowheads.

ROBERT A. SMITH—Ainsworth, Nebr.—Summer Camp ’46
Bob worked with the Dept. of Fish and game in S. Dak. for part of his experience. As his hobbies he lists hunting, fishing and girls. We wonder which he follows most. Best known as a story-teller.

JOHN STORES—Trenton, N. J.—Summer Camp ’47
For his experience, John worked in a mill work company near his home. His interest lies in forest and range management. A good student with an eye to the future.

ROGER S. STAMY—Webster City—Summer Camp ’48
Rog’s ambition is to get into the Forest Service. He worked with a tanker crew on Mt. Hood Natl. Forest to obtain information that he hopes will help him to get the Forest Service rating. He likes all types of sports.

PAUL TAYLOR—Ames—Summer Camp ’47
“Stumpy” is interested in lumber wholesaling and retailing; worked for USFS on Nezperce Natl. Forest in Idaho. “Stumpy” is a family man and is never known to quake when there’s something to be done.

ALBERT TAUBE—Ames—Summer Camp ’48
Al is interested in silvicultural management; worked as fire lookout for Clearwater Tbr. Protective Assn. in Idaho. Hobbies are hunting and fishing. A good sense of humor and always ready to pull a fast one.

Nineteen Fifty
ROBERT TWIST—Spencer—Summer Camp ‘47
“R.T.” is definitely USFS bound; worked on the St. Joe Natl. Forest. A fellow that would rather hunt and laugh than eat, R.T. can walk the legs off any competitor. A good family man and an all-around good guy.

CHARLES WARREN—Iowa City—Summer Camp ‘47
“Charley” is interested in all types of sports and wildlife. He is majoring in range management and soil conservation. A real quiet fellow, but very active in school activities. Other than forestry, Charley also is hep to the printing, machining and welding trades, which make up his extra-curricular activities.

CHARLES WIDMARK—Mcville—Summer Camp ‘48
Chuck is interested in timber and range management; worked in timber sales in Oregon. A quiet sort of a fellow, Chuck knows more than meets the eye. His hobbies are hunting, fishing, trapping and reading.

GERALD J. WILEY—Elkader—Summer Camp ‘48
Farm or State forestry is Wiley’s main interest. He dotes in bull sessions. Best known for his vibrant “Big Rock Candy Mountain.”

JAY WISE—Paton—Summer Camp ‘47
“Joe” says his field of interest is private forestry; worked on the Chippewa Natl. Forest in Minn. for two summers. A couple of Joe’s hobbies are wood-working and carpentry. With an eye for beauty, Joe married one.

SENIORS
Sans Pictures
Gordon Anderson
Don Braddy
Charles Coyle
Nelson Ellsworth
George Gerlach
John Gower
Grover Hertzberg
Kenneth Neveln
Ernst Winter
Rodney Paulson
Roland Paulson
Hubert Ward
James Williams

86
Ames Forester
| Axt, Donald | Hansen, Norman       | Nervig, Stan        |
| Barker, Donald | Hanson, Newton       | Olson, Paul         |
| Beavin, Milton | Hardcopf, Robert     | Parsons, Jack       |
| Blaisdell, Alfred | Hawk, Herbert       | Patterson, Dean     |
| Blumenthal, Donald | Hertel, Harold      | Patterson, Tom      |
| Brown, Wilbert | Horak, Francis       | Posekany, Richard   |
| Brugere, Gene  | Imfeld, Don          | Proeger, Linden     |
| Burns, Dayle   | Jarrard, Stanley     | Rawlins, Don        |
| Burns, Jim     | Jaskulski, Thaddeus  | Renard, Lawrence    |
| Burns, Richard | Jensen, Art          | Saba, Ed            |
| Busch, William | Jensen, Howard       | Schadt, H. O.       |
| Campbell, Dale | Kahler, Richard      | Schock              |
| Campbell, Don  | Kalen, Wendell       | Schlottier, Harold  |
| Chapman, Robert | Komanetksy, Michael  | Smith, Jack         |
| Claycomb, Bill | Korner, William      | Smith, Walt         |
| Cohn, Carl     | Lang, Jervis         | Soderling, Donald   |
| Craft, Roland  | Lynn, Art            | Stoppel, Duane      |
| Daib, Leonhardt | McCrory, Clair       | Tennis, Blaine      |
| Dittman, Willard | Marsh, Richard      | Tomasheski          |
| Farney, John   | Mennie, David        | Vanderschure, Tom   |
| Fassett, Jim   | Merriam, Robert      | Wahl, James         |
| Fixsen, Wallace | Merritt, Roger       | Wahlgren, Harold    |
| Fleming, Dick  | Moehler, Manfred     | Wendel, G. W.       |
| Fleming, Lester | Miller, Ralph       | Wier, Robert        |
| Fry, Harry     | Morgan, Robert       | Young, Edward       |
| Haas, Richard  | Needham, Paul        |                    |
SOPHOMORES

Allen, Louis A.
Bauer, Theodore J.
Beer, Joe H.
Bradish, John A.
Butler, Burton B.
Byrne, Robert L.
Campen, Eldon R.
Cartwright, James R.
Clark, Wendell P.
Cochran, Thomas E.
Corbin, Wm. C.
Crabbs, Roger A.
Crelin, John S.
Dale, Jimmy E.
DeJohg, Tenas
DeMeyer, Robert W.
Dose, Joseph C.
Dowd, Gordon P.
Dunlop, John W.
Edwards, Lee M.
Ehrlich, Glenn H.
Fish, John A.
Forman, Lawrence P., Jr.
Galgano, Victor P.
Glaser, Donald E.
Hanna, Stewart P.
Hanson, Orlin J.
Hartman, Theodore A., Jr.
Haskell, Henry H.

Haygreen, John G.
Hempel, Rowland W.
Hennings, Robert A.
Hertel, Wm. M.
Hillard, Wm. K.
Hoekstra, Pieter E.
Homan, Keith A.
Horsman, Lewill E.
Hummel, Allan E.
Hungate, George E.
Jahnke, John L.
Keimle, Siegfried F.
Kline, Paul D.
Kolpin, Norman V.
Krause, Gene W.
Krieg, Russell A.
Leuthauser, Albert H., Jr.
Lodge, Floyd E.
Lokken, Clayton M.
McAninch, Carroll D.
McMillan, Fred W.
Mayberry, Gerald D.
Micklewright, James T.
Miles, Robert L.
Mitchell, Leo A.
Mortensen, James M.
Mueller, Richard L.
Murphy, Wm. E.
Nelson, John P.
Norman, Dean F.

O'Brien, Wm. J.
Olson, John R.
Plank, Jack L.
Rehm, Roland S.
Rist, Donald E.
Ritter, Wm. C.
Ruppelt, James M.
Rymer, Karl R.
Schienbien, Allen G.
Schutt, Walter W.
Scott, David F.
Short, Winston B.
Smith, Jerome B.
Sorenson, Wayre M.
Spencer, James C.
Stevens, Robert E.
Sutton, Roger F.
Sweitzer, Gordon A.
Tillo, John
Tobiaski, Robert A.
Waters, John W.
Westphal, Warren B.
Wiant, Rex H.
Wilson, John O.
Wohlers, Arthur W.
Wolffing, Richard A.
Wood, Wm. C.
Worley, George R., Jr.
Young, Charles C.
Armstrong, Wm. T.
Arrasmith, Paul W.
Billingsley, Kenneth O.
Breon, Duane G.
Burdett, Paul W.
Byrus, Wm. C.
Cahill, Michael M.
Chance, Richard L.
Chesmore, Willis W.
Christ, Duane M.
Clark, Bernie
Conner, Robert C.
Conway, Wayne F.
Dale, Martin E.
Ebert, George H.
Ferree, Mac E.
Flint, Arthur G.
Freeman, Earl K.
Gamble, John H.
Garrett, Robert A.
Goodman, Tommy J.

Griswold, Richard K.
Gulick, Miles J.
Haaland, Carl J.
Haas, Richard
Hansen, John A.
Hardman, David L.
Harvey, James, Jr.
Hemphill, Merlyn W.
Hensel, Eric J.
Herrick, Owen W.
Irvine, Charles G.
Johnson, Clark A.
Johnson, Gordon R.
Johnson, Roger H.
Johnson, Thomas N.
Kale, Wilson S.
Knutson, Stanley K.
Kracium, Raymond G.
Kundrat, Andrew V.
Long, Gary R.
McMahon, Arthur W.

Martin, Thomas C.
Maurek, Peter A.
Michael, Albert C.
Morgan, Donald J.
Morris, John C.
Overeen, Jack M.
Pamnuel, James D.
Peak, Thaddeus B.
Potter, Roland D.
Porter, Mark P.
Richards, Merrill E.
Runncals, Larry G.
Schennum, Earl C.
Setzer, Theodore S.
Shaw, Adelbert F.
Spain, Charles F.
Stewart, Charles W.
Thurber, John D.
True, Marion G.
Uhl, Kenneth P.
Forestry Summer Camp 1949

IOWA STATE COLLEGE Summer Camp had five instructors this summer. Professor Bendsend was in charge of the camp with Professor Kellogg instructing Silviculture, Mr. Thomson with Mensuration, Mr. Herrick taking care of Utilization and Professor MacDonald handling National Forest Operations.

The camp was located in the Kaniksu National Forest on the experimental forest. It was an old abandoned CCC camp, F-127, located 15 miles north of Priest River, Idaho.

Former students will remember one of the cooks, Ethel Rukers, who was assisted by Faye Kelly this year. They were excellent cooks, supplying us with plenty of jelly on our peanut-butter sandwiches.

Weekly campfires helped to break the monotony of writing reports. Each week, on Thursday night, one of the barracks would supply the entertainment, consisting of skits, jokes and songs. One of the most successful campfires was held the last week of camp when all of the barracks combined talents to present a going-away show.

Although fishing remained poor this summer, many trout and sunfish were fried on the old cookstove. Chase Lake also furnished excellent bass fishing.

The students took advantage of several trips during the summer. Over the Fourth of July weekend, two trucks went to Grand Coulee Dam in eastern Washington. Several trips were made to Cavanaugh Bay and Coolin on Priest Lake. Other points of interest visited were Spokane and famous Coeur D'Alene Lake. Some of the fellows were even fortunate enough to get into Seattle one weekend.

Volleyball and softball games were a regular feature in the camp's recreational program. An intramural volleyball tournament was held with cherry pie and ice cream for prizes. Every Sunday there was a softball game with ISC coming out on top with a 100 per cent winning average.

Only one real accident happened during the summer besides numerous cuts, bruises and bee stings. When the second course

1. Come on fellows let's sing louder.
2. Honest! the Biltmore wasn't big enough.
3. Iowa was never like this.
4. We also have to take a "few" notes.
5. You "guys" back here again this year.
7. "Kellogs Croners" let go with a few melodies.

Nineteen Fifty
of Utilization went to see E. C. Olson’s logging operations on East River we nearly lost two of our Foresters. Watching a two man felling crew in action, several of the men were standing on a pine log on the side of a steep hill. The log gave way and Albert Taube found himself being chased down the hill by it. Fortunately for him he tripped and fell in a small depression and the log rolled over him leaving him none the worse for his experience. Less fortunate was Fred Moehler, who was standing on the log. He dove for safety when the log started rolling but was hit in the back before he reached safety. Although it was nothing serious, he was mighty stiff in his joints and will carry the scars for many a day.

Another great problem during the summer was the dry weather. Dusty roads were a daily occurrence which kept everyone very unhappy. Also, the fire problem was the worst since 1918.

1. “Dave” and “Benny” thinking up a hard problem.
2. The “Ponderosa Five”.
3. He’s getting practice for Paul Bunyan Day.
4. Sure is a big log.
5. You guessed it! Priest River Summer Camp.
6. We made it and didn’t even need the ax, but where does this go?
7. Where did all these logs come from?
Iowa State College, Department of Forestry, 1949 Slumber Camp

Now it can be told! Written especially for the "Ames Forester" the true story of the Iowa State College Forestry Summer Camp of 1949. This authoritative article has been carefully compiled by two "Forester" reporters who disguised themselves in red hats, dirty tin pants, faded work shirts, and loggers' boots and mingled with the campers in order to get the true facts. Unfortunately, these courageous workers must remain anonymous, as they are still in school here and wish to remain. Here, then, is their story.

* * * *

A few days after we had been informed of our secret mission out to summer camp, my colleague and myself decided to really see the West and save a little gold by riding out to camp on the trucks. As you may know, the Forestry Department maintains a fleet of five, 36 passenger, forest green convertibles for the sole purpose of transportation to and about camp. It was in one of these deluxe limousines that we left Ames one sunny morning in the early part of June. The trucks rode thru three rainy mornings and arrived in Idaho one sunny morning five days later. After the trip we felt just like the guy that joined the Navy to see the world; here we ride out West in the open trucks so that we can see the country and it is just like riding in a submarine.

The camp itself was an old C.C.C. camp that was used during the war to house prisoners of war. It now serves as a winter home for rats, mice, coons, ground squirrels and other assorted denizens of the woods. We shared our quarters with some of the regular winter residents and paid tribute to them all during our stay in the manner of cookies, candy bars and the remainders of yesterday's lunch. Several of these little fellows breathed their last during our stay and I can honestly say that their passing was smelt by all.

The barracks were beautiful little cottages number more or less four. They measured about twelve bunks long by about

1. We were amphibious also.
2. The "cocks" even helped out with the campfires.
3. It sure is a long climb up.
4. The famous flume again.
5. Bear-face Haskill.
6. Those logs will sure make a lot of matches.

Nineteen Fifty
two bunks wide. The distance from the center beam was a scant T. J. Bauer . . . hence the absence of many of the light bulbs along this beam in barracks one. The outside of the barracks was done in peeling green and white while the inside was tastefully festooned with dirty clothes, half dirty clothes, and foresters' dainties which just recently had been exposed to the gentle cleansing action of Chlorox and Oxydol. All these added a woody aroma to the already woody atmosphere. Each of the barracks side walls was decorated with a full length mural. These two murals were more or less in a modern vain, their design having been worked in such unorthodox mediums as grime fingers, knives lumber crayons and the like. Since the work on this mural was done by a number of artisans it was only fitting that they all sign the work, and some even went so far as to write tender inscriptions to lady friends and others on the wall. The woody occupants of the shack played an important part in the completion of the mural in that they served as moving targets for an almost endless stream of boots, whose prints made delightful patterns on the wall.

But as to the real purpose of our stay in scenic Northern Idaho—Most of our time was taken up in such uplifting occupations as: eating, reading (westerns and other high type slush), sleeping, shooting the bull, eating, writing T. S. stories to loved ones, sleeping, going to town for that occasional soda (well, anyway, it had froth on the top!) and last but not least, sleeping. Optional with those who wished to remain in school, the department set up four courses more or less pertaining to forestry and designed to take up our slack time.

Each of the courses was about 12 days in length and was as follows:

Forestry 214; picnic sites, their location and utilization. The work in this course consisted of riding around in the limousines for four hours in the morning inspecting various likely picnic sites in the general area. At about noon, we chose a suitable site and utilized it. The rest of the day was spent in promiscuous burping, and studying other sites that we might have stopped at and often wished we had. Entertainment was frequently provided by Prof. Kellogg who required that we chew down a tree

1. Valentine-Clark-Pole treating plant of Newport, Wash.
2. Boom logging—E. C. Olson operation.
5. One of our future “Foresters”.
6. Diamond Match Co.—Newport, Wash.
now and again (with a double bitted axe), dig holes and make notations on various things. Prof. Kellogg, realizing that most foresters are most proficient in the art of judging and interpreting curves of various sorts, had us transform our daily observations into curves for quick easy interpretation . . . whatever that means.

Next was Forestry 242; a snappy little course in natural and applied fudge factors. This course may also be sub-titled "taming the wilds", for it was here that we learned how to transform the timber in a 7 million acre tract of completely untamed wilderness into a nice neat row of figures copied in a round hand on a clean sheet of engine problems paper. The whole process called for skill with the compass, accuracy in judging, fluency in "french", accuracy in fudging, the patience of Job, a mathematician's brain, and just a hell of a lot of a lot of luck. 'Nuff sed!

Ahhhhh . . . and then there was Forestry 250; N. F. O., which stands for National Forest Operation. We did lots of things in this course. One time we spent a whole afternoon fighting a string stretched thru the woods. We hacked down trees, grubbed out underbrush, dug down to mineral soil and sweated blood for three hours to keep the string from advancing across our fire line. I might add that the contest was successful, and so far as I know the string has not advanced a single inch since we left it. Another day the whole camp, seated comfortably in the limousines, toured the whole of scenic Northern Idaho looking at various forest developments . . . and playing pinochle. The crew saw Canada that day, or at least a mountain that was reputed to be in Canada.

Last but not least came Forestry 234; utilization or something. This was a course to end all courses. Each day the class visited a wood utilizing industry (usually this meant a saw mill). Upon arrival at the mill, the class divided themselves into three groups. The first group, consisting of about half of the class members, immediately dispatched themselves to the log pond. Here they spent several happy hours at an occupation which they called log hurling. They frolicked about in the pond, falling on and off logs, ducking and splashing each other for the whole length of our visit. The child-like cries of this crew warmed the heart of many a mill worker. Of the remaining half, one large portion went into a group, which, on arrival at the mill, would seek out some nice, quiet place to sit and lounge. Here away from all the rush and bother of the civilized world, they (or perhaps better, we, but this is a story, not a confession) would smoke a home roll, eat their lunch and otherwise bide the hours until it was time to return home. The remaining two or three

Ames Forester
students were the ones that went thru the mill. They took notes on everything, made sketches of machinery and asked all manner of pertinent questions of the employees (and invariably got, "I da-know, 'ass that fella over dare,' he's-ah boss" for an answer). Later that night, back home, these workers carefully transcribed their notes and wrote up big fat reports on the day's activities. As soon as they had finished, they would be besieged with all sorts of requests.

"Say, Sig," one of the requesters might be heard to say, "let me check my data with yours, huh?" or maybe, "I'm a little confused on this carriage detail, Sig, can you let me see how you did it for a sec?"

All these fancy words mean the same thing—let me copy your report will you? (Copy is such a cruel word!)

These utilization boys were the boys who got to go to town almost every day. It was quite a sight to see one of the I. S. C. pseudo-loggers, his lustrous beard and his red hat, strolling down the streets of one of the nearby towns. More than one of the little town kiddies was heard to remark to his mother, "Oh, mommy, look at the funny man!"

* * * * *

All joking aside we had a great bunch of men out there in the wilds of northern Idaho this summer, and our profs can't be beat. To attempt to tell about all of the good times that we had last summer would be sheer folly in itself. So I am afraid that I will have to leave the tails of Canoe Shoe Clark, Hungie George gate, Toby, the barracks "wars", of our camp fires and all the other real goodies to the fellows that lived them . . . after all, I guess I have to leave them some stories to tell their grandchildren.

And while I am still rambling, I want to be sure and mention two of the greatest gals in the world. Known for their good humour and for their understanding of a guy's stomach, Ethyl and Kelly, the camp cooks, will long remain dear in the memories of all.

A toast to the summer campers of 1950, "May your camp be one-half as riotous as the immortal one of 1949!" And as one final bit of advice . . . when you go out to camp, leave the silk pajamas at home 'cause you will hardly ever use 'em.

*Nineteen Fifty* 103
Forestry Club Members

Front Row: Ramsey, Evans, Grimes, Ewing, Gallaher, Neveln.
Fifth Row: McCrory, Hensel, Finley, Wiant, Maynard, Gates.
Top Row: Schlotter, Gill, Potter, Dose, Rist, Haas, Hansen.

Second Row: Kuefner, Smith, Riddle, Anderson, Jones, Keister.
Third Row: Sapousek, Barnes, Stamy, Ehrlich, Rush.
Fourth Row: Kenneally, Wahlgren, Hartman, Merritt, Lang, Marsh.
Fifth Row: Connor, Jahnke, Lodge, McMillan, Hennings.
Top Row: Brabham, Merriam, Schadt, Simon, Jensen.
SENIORS


JUNIORS


Nineteen Fifty
SOPHOMORES


FRESHMEN

A new high in interest was shown by the Forestry Club Members during the past year. Not only did we have a near record in total membership but truly a new record in meeting attendance and participation.

Under the leadership of the spring officers a very well rounded program was sponsored which included Hoedown, Paul Bunyan Day, Spring Campfire and Veisha. A Forestry Library was also initiated at that time by Milt Sherbring and through the combined efforts of Hank Haskel, Keith Homan and Floyd Lodge, it is now in operation.

Under the guidance of the fall officers an increased interest was aroused in club activities. A Smoker, Fall Campfire and Game Banquet were sponsored; also a new constitution was drawn up and presented to the club for action at the regular mid-winter election.

One can easily see that the club experienced, as usual, another flourishing year.

Presented in the following pages is a brief resume of each of the past year's activities.

**FORESTRY CLUB LIBRARY**

In the Spring of 1949 Milt Sherbring and several other graduating seniors suggested that the Forestry Club organize their own library. The seniors felt that it would be invaluable aid in writing reports to have a file of recent publications on Forestry in the Forestry Department.

Floyd Lodge, Hank Haskell, and Keith Homan volunteered to organize the library. At the present time the Forestry Club Library has several hundred publications with more coming in all the time. Valuable contacts have been established with Research institutes, experiment stations, and wood-using industries. These organizations have expressed interest in the project and their contributions of literature have been a great asset.

The Forestry Department set aside bookcases, tables, and half of a large classroom for the library and a study room. The librarian work is done by the Forestry students themselves.
Paul Bunyan Day

The Iowa State forester's brawn, beards and brains were well demonstrated April 29 at the annual Paul Bunyan Day.

The 1949 event, the biggest and best since Paul himself swung an axe, provided two and a half hours of entertainment for over 500 spectators.

This year for the first time, a typical forester was chosen by vote and honored with the title "Son of Paul." Edwin "Moose" Zaidlicz received the title and the axe that went with it.

Managed ably by Bill Jordan, the thirteen events went off without a hitch.

The woodchopping contest was won in the record time of two minutes, eleven seconds by Ollie Sapousek.

Arnold Ewing and Clifford Finch looked like they had a power saw, winning the cross cut contest in thirty seconds, less than one-third last year's time.

Jim Pinneo and Rich Burns tied for top place in the tobacco spitting contest. Both were accurate in hitting a funnel at five feet. Although he didn't win a prize, Don Riddle displayed beautiful form in expert chin dribbling.

The block splitting contest was again cursed by those blocks that just didn't want to split, but Art Jensen bullied through his in twenty-five seconds.

While the women folk waited around for someone to "throw" a chain like the program said, Ewing coiled his in two minutes and ten seconds for the best time.

Three twenty-five foot creosoted poles were used in the pole climb. Wally Fixsen and Art Jensen tied at seventeen seconds. At last report, the winners seemed more interested in methods of removing creosote than in their prizes.

Bob Hansen won the prize for the bushiest face with a crop that looked like a marcelled door mat.

Joe Tomascheski topped the compass pacing contest with an error of three-fourths of a chain.

John Evans lead the field in wood identification and Palmer Erickson in leaf identification. No scores were announced for the protection of all concerned.

Art Jensen won the log tossing contest using an unorthodox wind-up that scattered the crowd. Luckily, the only injuries were the contestants' pulled muscles.
Veishea Open House
The ladies again donned blindfolds and hunted for an elusive stake set about 100 feet in front of them. Mrs. Dale Campbell won by coming within nine feet of the stake.

With a daring disregard for LaVerne's famed microbe concentration, Hubert Ward dethroned last year's birling champion, John Evans.

Veishea 1949

Many people visited our open house this year and were surprised to find that we had a Forestry Department at Iowa State. However, after seeing the forestry department float and open house display, there was no doubt in their minds that Iowa State has an active forestry department.

This year's open house display was located in the group of Oaks just north of Curtiss Hall. Over the entrance to the Open House was an arch which read "Forestry Open House" in evergreen. Also pointing to the exhibit was an arrow in evergreen reading "Forestry".

In the judging for the best open house we were given second place in the Agricultural division. Much credit should be given to J. A. Buchholz, general chairman, and especially to L. E. Horton and John Evans for their efforts in the setup and organization of our exhibits, and also to all the students who took part and cooperated in readying the exhibit.

The first exhibit one saw as he entered was the model saw-mill. The sawmill was obtained through the extension service and used as a center for the exhibit. Small aspen logs from the Holst State Forest were cut during Veishe. Panels were obtained which showed where home grown lumber could be used in farm construction to the best advantage. A power chain saw was also demonstrated in contrast to hand sawing.

The next exhibit was the post treating area. This exhibit showed the farmers how they could save money by treating their own fence posts with Penta-chloro-phenol. A full scale home treating device was featured by using a 55 gallon barrel. Pamphlets were also given out which explained how they could treat their own posts and the value of various species used. Many farmers paid particular attention to this exhibit.

The next exhibits were found in a large tent. The tent was one that was used by the forestry students during the summer. The first exhibit inside the tent was a recently completed relief map of the Holst State Forest. Another map was made up showing the plantings, etc., on the forest. Trees and rivers were simulated. Through signs, the origin of the Holst State Forest was explained and the part that the Forestry Club plays in its

Nineteen Fifty
management. By the use of actual models the public was shown how a relief map is constructed.

In the next exhibit a miniature forest was made up with small fire towers which showed the people how the lookouts work in connection with the Forest Service in the location of forest fires. An actual fire map was used to demonstrate how the fire is located in the dispatcher’s office.

The most interesting exhibit in the tent was the Forest Products exhibit. A picture of a forest drawn on a forester’s shield with the names of major forest products radiating out from it. From the box marked Special Products a ribbon ran to a large display which was broken down into different categories according to derivation, such as mechanically derived products, chemically derived products, etc. Also on a special panel was a pulp and paper display. Products for this exhibit were obtained from Prof. Bendsend.

On their way out of the tent small blocks of wood were handed out as souvenirs. The blocks of wood were cut and stamped with a special stamp, which was made in the form of the forester’s shield and inside it read, Compliments of the Forestry Department, Iowa State College, Veisha, 1949. Small pins which called attention to prevention of forest fires were also given out.

The last or first exhibit, and by far the most popular, with the public, was the hot dog stand. Many a hot dog was consumed; also, pop and ice cream ran a close second.

The Forestry float was one of the very important phases of the forester’s Veisha. The float displayed the progress that has been made in the field of logging. One part of the float showed the cave-man style of trying to buck a log, while the other showed the modern method of bucking by the use of the chain saw.

The Forestry Club and the faculty of the department were pleased and gratified by the enthusiasm and time devoted by the departmental members in making the ’49 Veisha a great success.

Back in the Old Days

Sit down, young’n. I was just tellin’ about a shindig we had at school back in ’49. Now as I was sayin’, this here dance was no ordinary affair. An annual thing, you know—once every year. Held in the spring, just about the time the buds start to pop. Pass me the jug.

Well, this here Hoedown as we called it was held out at the country club. When we went in, all the wimmen and men—

Ames Forester
folks got a crack at judgin' the age of a tree cross-section. That was for door prizes.

Inside, the place was all dressed up with pine boughs. Down at one end of the floor was a danged clever model of a high lead logging system, with trees, logs, cables, donkeys, and all.

The band was a real hep job, and there was plenty of fancy jiggin' done that night. 'Course all the faculty and extension members and their wives were there as our guests. Which reminds me, you shoulda' seen them young teachers gobble sodie crackers and whistle all at once, in a little contest we cooked up. "Benny" Bensend came out winner on that one. Jim Pinneo was em cein' the program—now there's a feller with a real wit. Told some mighty good jokes. He gave out the prizes, too. Besides the door prizes, there were prizes for the fastest woman cigarette-roller and her coach. Jim introduced a skit about experiences at summer camp, put on by some of the boys. Sure did get "dusty" in there. When we needed refreshin', we grabbed pretzels and punch at the bar. Pass me the jug.

Yessir, the committee done a right good job. There was Don Clay headin' it up, with Jack Gates handling the tickets and business end, Don Riddle as chief punch-mixer, Tom Cochran plannin' entertainment, Wally Gallaher on guests and transportation, Lyle Raun as publicity chairman, and the whole place was decorated under Glen Potter's direction.

Yep, it was sure some Hoedown. I never will fergit—ah, pass me the jug.

**Foresters Shine at Fall Campfire**

"O ur boys will shine tonight," . . . and they did if this statement is to be based on numbers.

The Forestry Club's Annual Fall Campfire took place at Sunset Park, west of Ames. The club's first big social event of the fall quarter was under the general chairmanship of Elmer McDade.

Everyone had a good share of weiners, beans, salad, coffee, cider and other refreshments.

After chow, "Bugs" Firkins spoke on "The Relationship of Agronomy and Forestry". Most of the foreasty profs and a good share of botanists were there.

As is usual, there is always some form of entertainment at forestry campfires. The program was started off by the "Un-wholesome Fore", who, among other things, sang "The Bird Song." This was followed by Brown's harmonica suite, which
was then followed by the star of the program—Ollie (Burl Ives) Sapousek.

The evening was rounded off by group singing. As one plodded along the path to the truck, he could hear in the background—"Oh, I wooed her in the summertime . . ."
1949 Fall Smoker

The Forestry Club's Annual Fall Smoker was held in Great Hall Memorial Union on Tuesday night, December 6. Due to a profusion of last week tests and the nearness of final week itself, only a fair sized crowd was in attendance. Undergraduate students were conspicuously absent: presumably more non-smokers in that group now.

Much credit should be given to the chairman, Fritz Lendman, and co-chairman, Art Jensen, for the efficient manner in which the "Smoker" was planned.

The atmosphere was notably lacking that traditional dull blue haze, either due to lack of numbers, or the Union's air conditioning. The finest 10 cent cigars available were on hand, and more than a sufficiency of popular brand cigarettes.

Those in attendance consumed a remarkable quantity of Union coffee and doughnuts. This was partially due to the efforts of "Shorty" Knoll who played the part of the perfect waiter, being at hand to furnish a refill the minute a cup got below the halfway mark.

Movies of the Oklahoma vs. Iowa State football game furnished entertainment and was handily narrated by Dean Norman, varsity right end.

Underclassmen missed a wonderful opportunity to get acquainted with their professors and upperclassmen as an air of informality persisted, and many bull-sessions were prevalent that evening.

Game Banquet

The annual game banquet was held at the Presbyterian Church, February 9th.

A very tasty dinner, with roast buffalo as the main course, was prepared by the ladies of the church. Speaker for the banquet was Ries Tuttle, Conservation writer for the Des Moines Register and Tribune. His talk, accompanied with excellent slides, was very well received.

The banquet was well attended, making it another successful social event sponsored by the club.
Front Row: Muhm, Needham, Kuefner, Imlfield, Barnes, Warren.
Second Row: Roman, Sapousek, Blomquist, Grimes, Olson.
Third Row: Riddle, Evans, Fye, Stickes, Price, Byers.
Top Row: Dale, Knop, Jensen, Potter, Allen, Jirsa.
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Nineteen Fifty

117
The twenty-second annual Honors Day Program, held in the State Gymnasium, last May 19, found the names of our fellow foresters mentioned often for honors they received.

Our department was well represented by high scholarship students in the Division of Agriculture. In the Class of 1949, Thad Harrington and "Moose" Zaidlicz were recognized. Paul Needham was named as high scholarship student for 1950, while Bill Claycomb was named as honor student of 1951. Siegfried Kiemle and Jim Dale were recognized from the Class of 1952.

Perhaps two of the most distinguished foresters among us were duly recognized. Thad Harrington and Ed (Moose) Zaidlicz were initiated into Phi Kappa Phi national scholastic honor-ary. This honor fraternity selects seniors from the highest sixteenth of the class.

Seven of our fellow foresters were initiated into the honor society of Alpha Zeta last spring. Those initiates were: Ted Allen, Darle Doolittle, Dean Einspahr, Thad Harrington, Wayne Kuefner, Jim LeRoux and Donald Strong. Three other men were initiated this fall. They were as follows: Arnold Ewing, Jack Gates and John Stockes. This society elects juniors from the upper one-fifth and seniors from the upper one-fourth of their respective classes in the Division of Agriculture on the basis of scholarship, leadership, and character.

Gamma Sigma Delta selects seniors in the upper one-fourth of the Class and graduate students who have shown research ability in Agriculture and related departments. Among the faculty members selected was Professor John E. Granson. Among the seniors selected were Jack Deinema, Dean Einspahor, Thad Harrington and Ed (Moose) Zaidlicz.

These men have upheld every tradition of the foresters. They have achieved high honors and have been duly recognized. It is now up to all of us, by the example they have given us, to strive on for greater achievement in our chosen field.
The Hoist State Forest

Development of the Hoist State Forest took a big step last spring with the reconstruction of the only road on the Tract—that leading from the gate in the southeast corner to the creek well toward the northwest corner. It was a remnant of an old logging road and was usable only in the best of weather. Its entire length, approximately 1 1/4 miles, is now ditched, cindered and servicable to two lane traffic except in some steeper parts near its northern limits. Two conveniently located parking areas were also cleared so that visitors can park their cars and do some exploring on foot.

Eighteen different species of coniferous trees were planted last spring ranging from native Iowa species to Swiss and Short-leaf Pine. Each species was planted in a 1/5 acre plot and was part of a survival and growth experiment for the Extension Service. Owing to adverse weather conditions last spring, the mortality rate was quite high for all species except Red Pine.

With the cruise finished, Charles Barnes and Gaylord Robertson compiled the data needed for the drawing up of a management plan. This consisted of growth data and volume tallies according to species and also the complete history of the tract.

Something new was initiated on the Hoist Tract this fall to discourage Christmas tree hunters who annually ruin many of our pines by cutting out the tops. By Russian pruning these pines it is hoped that they will become useless as ornaments for this purpose. Many of our Douglas Fir seedlings were lost, presumably to someone's yard, so these got the Russian pruning treatment also.

This past year the Hoist State Forest Advisory Committee was under the chairmanship of Ollie Sapousek. The remainder of the committee consists of Don Clay, Senior representative; Albert Taube and Dick Posekany, Junior representatives; Floyd Lodge and Jim Dale, Sophomore representatives; and the newly elected representatives from the Freshman class are Bob Connor and Dick Chance.

Nineteen Fifty
Prof. Hartman Speaks

Dear Alumni:

For the past two years I have been hoping to have issued by the department an alumni news letter in which I could tell you something about the department and the college. Because of the press of other duties this news letter has never materialized. Therefore, I am grateful to the Editor of the 1950 AMES FORESTER who has asked me to give him something which could be published in the Forester addressed particularly to the alumni.

Nothing spectacular has occurred in the department during the past year. We have spent considerable time in trying to rearrange the course offerings of the department so that our graduates will have expanded opportunities for good fundamental training on which to build their experience. We have added an advanced course in wood technology which we call "Mechanical and Physical Properties of Wood" and, an advanced course in forest products both of which are elective for those students who plan to enter the field of wood technology or utilization. For students who are more interested in silviculture and forest management we have added elective courses in forest influences and advanced silviculture. We plan to expand the present course in forest mapping to include not only mapping but also photogrammetry as it applies to all phases of forestry practice. We have been using aerial photography in the course in forest mapping but have not had time enough to apply it to mensuration. The proposed five hour course in forest mapping and photogrammetry should give our students very fine training in this field.

One of the very real needs of the department has been forest land on which we could carry out research and demonstration work. Last year a citizen of Delaware County bequeathed to the department a very fine timber tract of 293 acres. As soon as some legal matters are straightened out this tract will be used by the department to carry on research work and as a demonstration forest. At the present time prospects are extremely bright that we shall be allotted the use of a small farm forestry tract near the campus and also a fairly sizeable area on the Ankeny farm. With the addition of these pieces of forest land we will
be in a much better position to carry on research and resident teaching work in forestry.

Many of you will be interested to know the men who constitute our staff at the present time and the major courses which they are handling. Prof. Mac, who is loved by every forestry alumnus of Iowa State, is with us teaching on a full-time basis. He is handling the classes in freshman forestry and in seeding and planting. Dr. A. L. McComb heads the work of our graduate students in forestry, devotes one-half time to research work and teaches courses in silviculture and seeding and planting. Dr. D. W. Bensend, a Minnesota graduate, teaches the utilization subjects and advanced wood technology. Professor L. F. Kellogg, with degrees from California and Yale, came to us last year after long experience with the Central States Forest Experiment Station to head up the work in forest management. He teaches management, finance, and a part of the work in mensuration. Dr. J. A. Larsen, under whose influence many of you have come, is now on a one-half time teaching basis as he has reached the retirement age. He still teaches some of the courses in silviculture and wood technology. Professor J. E. Granson, who has been on our staff for about four years, teaches history and policy, administration and forest economics. Professor R. E. Getty, after many years of experience with the Indian Service, joined our staff a couple of years ago primarily to carry on research work. At present he devotes one-fourth of his time to resident teaching and three-fourths to research. We expect him to handle the proposed new course in photogrammetry along with some work in mensuration. Wm. W. Chilcote, who has been an instructor on the staff for several years, will receive a Ph.D. degree this year from Iowa State with a major in plant physiology. He has been teaching some freshman forestry courses, some wood technology and has been responsible for all of the teaching in range management which is his primary interest. George W. Thomson, another of our fine group of young instructors, is very capably handling classes in mensuration and is doing all of the teaching in farm forestry which is his particular interest. David E. Herrick is the youngest of our instructors being now in his second year on our staff. He helps in the utilization courses, in mapping and in wood technology. Dave had some experience before joining our staff in the operation of a small sawmill in southern Iowa. This experience gave him a very fine insight into the problems of the small operator. The time of the writer is pretty largely consumed in the job of making out teaching schedules, classroom schedules, catalogue material, etc., but some time is found to teach courses in wood preservation, lumber markets and lumber manufacture. It has been my happy privilege to have been associated with a great many of you particularly those who have passed through Ames since 1935.

In addition to the teaching staff as listed above we have two very fine Extension Foresters in the persons of Professor Richard B. Campbell, State Extension Forester, and Edmund T. Gardiner, who is his assistant. They are doing a very fine job in the state in promotional work in forestry. The business end of our office is being handled at the present time by Mrs. Dee Anderson and Mrs. Betty Jane Hain. Mrs. Anderson will be leaving us this year due to the fact that her husband will be one of our March 1950 forestry graduates.

As most of you know, Iowa State, like most of the other forestry schools of the country, has a rather large student body at the present time. We expect to have our largest graduating class this year. Through this letter I am making a personal plea that all of you appoint yourselves

**Nineteen Fifty**

121
committees of one to seek jobs for some of these graduates. I do not doubt that there are plenty of jobs for all of the young men who will be leaving this year if they can only be discovered. Therefore, if you know of any possible openings for foresters we hope you will let us know about them promptly. We will either follow up such leads by letters or by a personal visit on the part of some young man who may be interested. The record of the Iowa State College in the placement of forestry graduates is extremely good. A lot of the credit for this record must go to those of you who have been in the field who have kept the department advised about job possibilities for foresters. We hope that you will continue this interest in the department.

I solicit letters from any of you regarding improvements which you think could be made in the training of foresters. You are in the field and know at first hand what the needs may be. Whenever we can, you may be certain we shall consider seriously suggestions for improvements and betterment which may come from those of you who are in the field. I send greetings from all of our staff members and best wishes to every one of you for continued success in whatever field of endeavor you are engaged.

Very sincerely yours,

George B. Hartman

Ames Forester
Afield With The Alumni

SHIRLEY W. ALLEN, 1909. "... am working on a new book, *Conservation of Natural Resources.*"

WILLIAM P. HARLEY, 1915. "re-elected President of Mountain States Lumber Dealers Assn."

ROBERT E. FENNELL, 1922. "... only recent forestry work was moving two red oaks and two white spruce to my daughter's home."

C. SVENDBY, 1926. "... have made some progress in getting farmers and ranchers to take better care of their woods, but have a long ways to go."

WILLIAM M. LEPLEY, 1928. "... am still hoping to see an Ames forester someday."

JOHN W. KULP, 1929. "... assisting with research projects on preservative treatments, R.E.A. pole service tests and related work."

SYLVAN T. RUNKEL, 1930. "... still working at conserving the good earth of Iowa."

JOSEPH H. STOEKELER, 1930. "... attended the third World Forestry Congress in Helsinki, Finland, then toured forest and experiment stations in other countries of Europe."

WENDELL H. HARMON, 1932. "... new management plans are a big part of work here in the Black Hills."

KEITH CRANSTON, 1936. "... this office is set up to provide accurate and unbiased inventories and estimates on large tracts on a commercial basis."

H. C. COOK, 1937. "... am enrolled in the Inter-American Institute of Agric. Science in Costa Rica, working on rubber research and tropical agriculture."

WAYNE C. CHAMBERS, 1939. "... see a lot of good timber show in my work with the U.S.G.S. Haven't beat the bushes since my discharge."

ROBERT B. GRAU, 1939. "Private enterprise is rough but intriguing."

ROBERT N. HOSKINS, 1939. "... serving as vice-chairman of Agric. of Conservation for Jr. Chamber of Commerce of U.S. Looking for more Ames foresters in the southeast."

MARTIN B. APPELQUIST, 1940. "Moved into our new home and would welcome the chance to put up an Iowa Stater for the night."

GEO. A. BUCK, 1942. "Would like to hear from some of you foresters in the field—your positions and accomplishments."

WILLIAM RICE, 1942. "Got tired of raping the Maine woodlands so am now selling fishing rods which gives for a good audience to talk over watershed protection and eliminating stream pollution."

HANS UHLIG, 1945. "Am working on small-game research and would like to hear from some of my classmates."


GEO. BRECKENRIDGE, 1948. "... dragged the wife and son into

*Nineteen Fifty*
Canadian bush. . . Guys like Fisher can sell their lots, and Dirks can sell his oats. . . I like the bush."

Ed J. Hoffman, 1947. "Never expected to engage in Range work. I'm finding it very interesting and well diversified."

Robert H. Jackson, 1947. "The Southwest is a good place to start in Federal forestry—good climate, pleasant associates, and lots of challenging problems."


Joe C. Patton, 1948. "Mierstein and I are going to try and cover the Missouri Valley with trees to provide jobs for other Ames foresters so we can have company. Foresters are scarce in Omaha."

Ross L. Tueber, 1948. "Don't sell the Forest Service short on opportunities for advancement."

Raymond Anderson, 1949. "The foundation is a self-perpetuating, non-profit organization to increase wood production."

Richard Grist, 1949. "I am convinced there is a place for foresters in the coal industry."

Thaddeus Harrington, 1949. "Have been estimating timber in eastern Kentucky and spent some time on drain survey."

Elmer McDade, 1949. "Working on the Oregon & California Lands. The ownership plan is a dilly. Managing these lands is like playing checkers."

Eugene Reynolds, 1949. "... work is mainly Forest Management, giving advice to small woodland owners. Hope to be flying fire patrol next summer."


Howard Schmidt, 1949. "Had an easy summer—not many fires. Big Wind of Oct. 10 gave us a telephone line headache. Fire Protection in Wis. is a good field for foresters."

Ed "Moose" Zaidlicz, 1949. "Any personal advice I could give you would be worthless and could possibly land you in the 'clink'."
Alumni Directory

1904

Balthis, R. F., Vicksburg, Miss. Retired.

1908
Heaffner, H. E., 4242 N.E. Failing St., Portland 13, Oregon. Chief Forester, St. Helen's Pulp and Paper Co.

1909
Allen, Shirley W., School of Forestry and Conservation, University of Michigan, Ann Arbor, Mich. Professor of Forestry. 820 Daniel St., Ann Arbor, Mich.

1911
Barrett, R. L., 323 S. Ripley St., Neosho, Missouri. District Agricultural Agent, University of Missouri.
Reynoldson, L. A., 6319 33rd St. N.W., Washington, D. C., Senior Agricultural Economist.
Smith, P. T., 107 23rd St., Sioux City, Iowa. Manager, Animal Feed Dept., Cudahy Packing Co.

1912
O'Bannon, A. C., Park Rapids, Minn. County Agent.
Richmond, H. H., Cass Lake, Minn. Timber producer-owner.
Smith, William A., 501 Hall of Records, Los Angeles 12, California. Los Angeles County Supervisor.

1913
Clark, Hal B., 4902 Underwood Ave., Omaha, Neb. Construction Supt., Parsons Construction Co.
Hensel, R. L., Texas Agricultural Experiment Station, College Station, Tex. In charge of Pasture Investigations.
Ringheim, H. I., c/o Monarch Lbr. Co., Ltd., Winnipeg, Manitoba, Canada.

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Sterrett, John C., 249 S. Villa Ave., Villa Park, Ill. Real Estate.
Wolf, E. T.

1915

Bode, I. T., Missouri Conservation Commission, Jefferson City, Mo. Director.
Hicks, L. E., 5531 28th Ave. N.E., Seattle, Wash. Utilization Officer, War Assets Administration.

1916

Cornell, Harvey H., 717 Camine del Monte Sol, Santa Fe, N. M. Regional Landscape Architect, National Park Service.
Geisler, Max, 925 Wesley Ave., Evanston, Ill. Sales Promotion Mgr. The Harry Alter Co.
McCarthy, C. C., Webster City, Iowa. City Manager.

1917

Hartman, George B., Head of Forestry Dept., Iowa State College, Ames, Iowa.
Henry, A. S.
Quint, J. H., 611 Olmstead Drive, Glendale, Cal. Dentist.
Veach, C. H.

1918

Davis, Edward M., Forest Products Laboratory, Madison, Wis. Principal Wood Technologist.
Donahoo, John F.
Haddock, Frank D., R.F.D. 1, Stanton, N. J. Engineer, Western Electric Co.
Rehmann, Theodor W. 210 37th St., Des Moines, Iowa. Real Estate and Investment.

1920

Baker, C. J., 5308 Clinton Ave., Minneapolis, Minn. Teaching.
Deming, Milo H., P.O. Box 833, Burns, Ore. Range Examiner, U. S. Bureau of Land Management.
Fletcher, R. A., 10 Murdock Court, Oakland, Calif. Insurance.

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Hoyer, V. B., Box 325, Cottage Grove, Ore. Public Accountant.
Loy, Elmer C., 910 3rd Ave. N.W., Kalispell, Mont. S.C.S.
Moorhead, John W.
Poshusta, D. C., 222 2nd S.W., Mason City, Iowa.

1921
Cormany, C. P., 201 N. Wells St., Chicago, Ill. Private Lbr. Broker.
Helm, Harley J., Box 713, Lincoln 1, Nebraska. Range Conservationist S.C.S.
Ling, Wen M., Univ. of Nanking, Cheng Tu, Szechwan, China. Handling Vocational Agric.

1922
Eggers, William C. 1057 58th St., Des Moines, Iowa. Dist. Sales Representative, Wood Preserving Division, Long-Bell Lbr. Co. of Kansas City.
Pohle, Edwin, 1402 So. 1st St., San Jose, Calif. Owner-Manager Southern Lbr. Co.

1923
Bogen, A. J.
Dunn, Paul M., Oregon State College, Corvallis, Ore. Dean, School of Forestry.
Prout, Clarence, 5552 24th Ave. S., Minneapolis 6, Minn. Deputy State Forester, Minnesota Dept. of Conservation.
Trenk, Fred B., 2606 Gregory St., Madison, Wis. Extension Forester, Univ. of Wisconsin.

1924
Martin, Chester W., Old Lyme, Conn.
Miller, Allen F., Box 411, Sonora Calif. Forest Supervisor, Stanislaus Natl. Forest.
Rutter, Frank J., 2301 N. Racine Ave., Chicago, Ill.

1925
Durrell, Glen R., Dept. of Forestry, Oklahoma A&M College, Stillwater, Okla. Head of Dept. of Forestry.
Howell, Joseph, Jr., Box 711, Clarendon, Tex. Head of the Dept. and Prof. of Science, Clarendon Junior College.
Lough, William M., 5641 Cerritos Ave., Long Beach, Cal.

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FARNSWORTH, C. EUGENE, 5559 S. Salina St., Syracuse, N. Y. Assoc. Prof. of Silviculture, New York State College of Forestry.
GREEF, CHARLES H., 2111 Parker St., Amarillo, Texas. Sales Manager, Oliver & Wiggins Lbr. Co.
HARRISON, C. LEWIS, 115 Crestview Road, Columbus, Ohio. Asst. Supervisor, Wayne Purchase Unit.
KOUBA, THEODORE F., 1 Langdon St., Madison, Wis. Pathologist, Bureau of Entomology and Plant Quarantine, U.S.D.A.
MEYER, RUSSELL E., 1149 N. Academy St., Galesburg, Ill. Packaging Engineer, Chicago Mill & Lbr. Co.
SCHULZE, NATHAN C.
SVENDBY, C., 514 S. Wellesley, Albuquerque, N. M. Chief, Regional Forestry Division, SCS Region 6.
THARP, ORLO, Bellefontaine, Ohio. Farmer.
WALLING, CHESTER W., 9823 Lake Ave., Cleveland 2, Ohio. Sales Manager, Cozier Container Corp.

1927

FULLERTON, NEIL, Box 331, Thompson Falls, Mont. Asst. Forester, Cabinet Natl. Forest.
GIBBS, JOSEPH A., Rt. 3, Spartanburg, S. C. Chief, Regional Forestry Div. SCS.
HUTCHINGS, GORDON C., Rt. 1, Henderson, Colo. Trout Farm.
JACKSON, M. D.
LATHAM, ORRIN, New York State Ranger School, Wanakena, N. Y. Assoc. Prof. of Forestry.
MCKINLEY, RAYMOND M., Box 497, Cleveland, Tenn. Asst. Supervisor, Cherokee Natl. Forest.
RINDT, CHARLES A., Post Office Bldg., Portland 8, Oregon. Timber Management, Regional Office, USFS.
SCHIPULL, WALTER L., Room 4204, South Bldg., USDA, Washington 25, D. C. Chief of Division of Watershed Management, USFS.

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131
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Turney, George A., Bottineau, N. D. Farm Forester USFS.
Wiggins, Verne, Story City, Iowa. Town Clerk.

1928
Armstrong, George W., Federal Bldg., Los Angeles 12, California. Supervisor's Staff, Angeles Natl. Forest.
Ball, Donald R., 520 S. Baird Ave., Rhinelander, Wis. Supervisor, Nicolet Natl. Forest.
Hill, Edwin, 1230 Arthur St., Wausau, Wis. SCS.
Kahlert, Leslie H., State Tree Nursery, Jonesboro, Ill. Supt., "Producing and Shipping 7 million seedlings in '49".
Lau, Victor C.
Lester, Orville, Rt. 1, Indianola, Iowa. Farming.
Lundberg, R W., Sequoia Natl. Park, Cal. Park Ranger.
McLaren, C. G., Tomahawk, Wis. Vice President & Genl. Mgr. of National Container Corp. of Wisconsin.
Sonner, Orville, Hamburg, Iowa. Farming.
Wicks, Walter, 409 E. 29th St., Sioux Falls, S. D. Territory Inspector, Altec Service Corp.

1929
Battey, Lawrence, Salem, Mo. Dist. Ranger, Clark Natl. Forest.
Beveridge, William M., 603 Bremen, Silver City, N. M. Supervisor, Gila Natl. Forest.
Christensen, Irving L., SCS., Elkader, Iowa.
Kulp, John, 509 N. Owen Dr., Madison, Wis. Personnel Div., U.S. Forest Prod. Laboratory.

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MOREY, HAROLD F., 111 Old Federal Bldg., Columbus, Ohio. Chief, Div. of Flood Control.
OLSON, ROY W., Harrisburg, Ill. Supervisor, Shawnee Natl. Forest.
SCHOLZ, HAROLD F., Box 265, Richland Center, Wis. Silviculturist, Lake States Forest Exp. Station.

1930

ABELL, MARGARET STOUGHTON, Mt. Hebron, Cal. Housewife, Girl Scout Leader, School Trustee Gardener.
BURKETT, LUTHER B., 21 N. Pelham, Rhinelander, Wis. Forester, Nicolet Natl. Forest.
DEBOWER, RICHARD M., 604 Hinman Ave., Evanston, Ill. Teaching, Chicago Public Schools.
HAWKINS, V. T., Dallas, Iowa.
HEACOX, E. F., P.O. Box 1645, 810 No. G. St., Tacoma, Wash. Managing Forester, Weyerhaeuser Timber Co.
HOLTZ, ROBERT DEAN, Whiteriver, Arizona. Supt., Fort Apache Indian Reservation.
KLUG, BILL, JR., Box 207, Newport, Delaware. Wood Preserving Div., Koppers Co., Inc.
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MICKEY, MYRON H., JR., 702 Kansas, Walsenburg, Colo.
MOESSNER, KARL E., 39 W. Patterson, Columbus, Ohio. Forester, Central States Forest Exp. Station.
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Ames Pantorium—410 Douglas .................................................... 33

CLOTHING
Joe’s Men’s Shop—212 Main ....................................................... 86
2536 Lincoln Way ................................................................. 21
Berck’s—Sheldon-Munn Building ................................................. 715

DAIRY PRODUCTS
Woodland Farm Dairy—819 Lincoln Way ....................................... 435
O’Neil Dairy—308 5th Street ...................................................... 62
Moore’s Dairy—428 5th Street ................................................... 369

DEPARTMENT STORES
Younker’s Ames Store—323 Main ............................................... 3280

DRUGS
Peterson Drug Co.—2816 West Street ......................................... 2865
Campus Drug—2430 Lincoln Way ............................................... 1195

ENGRAVING
Ames Engraving Co.—Tribune Building ....................................... 54

FLOWERS
Evert’s Florists—208 Main ....................................................... 490
Cos’s Flower Shop—2542 Lincoln Way ......................................... 110
Sheldon-Munn Building .......................................................... 111

FOOD
L-Way Cafe—2418 Lincoln Way .................................................. 1819
Topsy’s Cafe—117 Welch ........................................................... 1845
Campus Cafe—2312 Lincoln Way ................................................ 2822
The Grid—Sheldon-Munn Building .............................................. 1900
Nibble Nook—West on Lincoln Way ........................................... 1840
Way Side Inn—405 Main .......................................................... 1840
White House Boarding Club—2717 West Street ............................. 3622

FURNITURE
Shiery’s Hardware & Furniture Co.—121 Main ................................ 685
Hoversten Furniture Store—412 Main Street .................................. 68

GROCERIES
Rushings Super-Valu—South of Tracks on Kellogg ......................... 34
Ames Wholesale Fruit & Grocery—2nd and Elm ............................... 84

HARDWARE
Carr Hardware—304-306 Main Street .......................................... 124

Nineteen Fifty
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>BUSINESS</th>
<th>ADDRESS</th>
<th>PHONE</th>
</tr>
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<tbody>
<tr>
<td>JEWELRY</td>
<td>Bates Jewelers—2400 Lincoln Way</td>
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<tr>
<td></td>
<td>Charles G. Ray, Jeweler—220 Main</td>
<td></td>
<td>230W</td>
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<td>LUMBER</td>
<td>Ames Lumber Co.—501 Lincoln Way</td>
<td></td>
<td>83</td>
</tr>
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<td></td>
<td>H. L. Munn Lumber Co.—107 East Main</td>
<td></td>
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<td>S. Hanscn Lumber Co.—212 Duff</td>
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<td>Schoeneman Bros. Co.—413 Northwestern</td>
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<td>264</td>
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<tr>
<td>MOVING</td>
<td>Wilson Transfer &amp; Storage Co.—113 Kellogg</td>
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<td>Mattox—420 Main</td>
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<td>270</td>
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<td>MUSIC</td>
<td>Eschbach Music House—302 Main</td>
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<tr>
<td>PAINTS</td>
<td>Irvine's Paint &amp; Wall Paper Store—214 5th Street</td>
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<td>765</td>
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<tr>
<td>PHOTOGRAPHS</td>
<td>Hill's Studio—2530 Lincoln Way</td>
<td></td>
<td>347</td>
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<tr>
<td></td>
<td>College Town Studio—109 Welch</td>
<td></td>
<td>49</td>
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<tr>
<td>PIPES</td>
<td>McGuire Pipe &amp; Gift Shop—231 Main Street</td>
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<tr>
<td>RECREATION</td>
<td>Memorial Union—Campus</td>
<td></td>
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<td>Carr's Pool—East 16th Street</td>
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<td>623W</td>
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<td>SERVICE STATIONS</td>
<td>Riverside Service Station—1408 Lincoln Way</td>
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<td>1891</td>
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<td>Sorenson Oil Co.—Lincoln Way &amp; Elm</td>
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<td>162</td>
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<td>Ashley's D-X Service—Main &amp; Burnett</td>
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<td>Yates Service Station—503 Duff</td>
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<td>SHOES</td>
<td>Trueblood's Shoe Store—2544 Lincoln Way</td>
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<td>SOFT DRINKS</td>
<td>Ames Dr. Pepper Bottling Co.—105 Kellogg</td>
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<td>SPORT</td>
<td>Ames Sport Shop—2526 Lincoln Way</td>
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<td>2598</td>
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</table>
Seniors

March or June Graduates

B.S.
M.S.
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