 Ames Forester

1955
50 Years of Progress

This year marks the 50th anniversary of the U. S. Forest Service. During a half-century of public service in the management of the nation's forest resources, the Forest Service has compiled an enviable record. In tribute to the Forest Service, and in anticipation of future progress in the multiple use of our forests, this issue of the AMES FORESTER is respectfully dedicated.
In the relatively short time that forestry has been an organized profession in this country, research has played a major role in the development of its practices and policies. Through a continually expanding research program we are seeking and finding the answers to the wise management of our forest land. In commemorating the 50th anniversary of the U. S. Forest Service, the Ames FORESTER presents a picture of some significant research developments in several phases of forestry.

The staff wishes to express its appreciation to the authors for their generous contributions in support of this issue.
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The financial success of this publication is due largely to the generosity of the above persons. We thank them for their patronage.
PONDEROSA PINE MANAGEMENT
IN THE BLACK HILLS

By Wendell H. Harmon
Timber Management Assistant
Black Hills National Forest

PHOTOS BY BOB GAGE

The Black Hills National Forest is located in western South Dakota and northeastern Wyoming. Compared with other national forests, it has the longest history of regulated cutting and forest management.

The first sale of timber known as Case 1, involving 15,000,000 board feet of ponderosa pine sawtimber and 5,100 cords of wood, was made on this Forest to the Homestake Mining Company on February 28, 1898.

In this and other early sales, the seed tree method of leaving two of the larger seed trees per acre was used. Earlier unregulated cutting, following the first established mining camp at Custer in 1875 until the Black Hills Forest Reserve was established February 22, 1897, has been estimated conservatively at 1,500,000,000 board feet of ponderosa pine.

It was natural that the longest and best quality trees were cut to supply the early day mining camps and settler needs. In addition, wood was the only fuel and the forest was completely cleared for an area of several townships in the vicinity of Lead and Deadwood.

Fortunately, establishment of ponderosa pine on cut-over areas does not present a problem in the Black Hills. This may be attributed to the favorable moisture conditions in spring and early summer. Following the heavy cutting in the period of settlement, dense stands of pine reproduction became established. Conservative cutting of the national forest, starting about 1910 using a selection system, provides the forest manager with a good distribution of mature timber 161 years plus, thrifty merchantable 101 to 160 years, post-poles 51 to 100 years, and reproduction stands 1 to 50 years old.

Management in the Black Hills

Forest management, as practiced in the Black Hills, was confined, with minor exceptions, to the cutting of sawtimber sized trees until the era of the Civilian Conservation Corps. Management was then given a big assist when the CCC's thinned 204,600 acres of young timber.

Marking guides as written, appeared concerned with perpetuating the old stands. It was difficult to get uniformity in marking from district to district.

Recently a guide has been developed which places the emphasis on the establishment and development of the young stand, utilizing a group shelterwood system of cutting. The method has been on trial since 1952 and has systematized the marking. Although some revisions will be necessary as forest management is intensified, the guide as now used has a number of advantages. One of the most important is the recognition of the regeneration habits of ponderosa pine as the basis for marking. An advantage to the manager is that marking has become more uniform. By using this system, markers can more readily understand the overall management objectives, and marking is made easier.

The cutting cycle for the Black Hills ponderosa pine has now been established as 20 years. This fits in well with the growth habit of the tree since the young stands respond to the thinning standards by increasing their increment for a period of about fifteen years, with several years added for root and crown development at the beginning of the cycle and a like period for quality growth at the end of the cycle.

The marking system includes a guide for marking sawtimber, age 101 plus, and a second growth guide for younger timber. Marking of mature timber is designed to assure regeneration, develop the ponderosa pine reproduction, and spread the cut of sawtimber products through additional cutting cycles until the young timber of the second rotation is ready to take over the growing site. For the younger age class, periodic thinnings will assure a steady rate of growth on crop trees and will provide posts, small poles, and pulpwood.

Pine reproduction will develop at a satisfactory rate for a period of forty years under mature crop trees which are given periodic removal cuts. With this in mind the management of the mature timber is based on the condition of the reproduction. The marker's job is to recognize the development state
of the reproduction. Since ponderosa pine grows naturally in small, even-aged groups, the marker concerns himself with the tree group. A group is defined as two or more trees, each competing with the rest for light and water.

In a group of mature trees, without reproduction, competition exists between all members of the tree group. Although the trees are even-aged, there usually is a wide variation in diameter size and crown classification. During intermediate cutting cycles the most thrifty trees of good quality are reserved. These are usually in the larger diameter classes.

**Marking Guides**

Marking is done according to the following guides:

1. **Reproduction is less than 6 feet in height, varying from fully stocked to non-existent; overstory is usually dense.** The objective is to remove the overstory in three major cuts, plus a fourth cut to remove the remaining seed trees. The volume to be cropped at the first cut will be approximately 35%, but may be as high as 45%. The most thrifty trees of good quality will be reserved for the second and third cuts. The cut volume will be made up of low vigor, defective trees of poor form and quality. This cutting is designed to establish reproduction and advance its growth by approximately 6 to 12 feet in height.

2. **Reproduction ranges from 6 to 18 feet in height, often growing in clumps; overstory is moderately dense to open.** With reproduction of this height, marking is designed to remove the overstory in two major cuts, plus a third to remove the remaining seed trees per acre. The cut will average 50% of the volume of tree groups in this classification. The plan is to reserve the most thrifty trees of good quality for the next cut. Cut volume will be made up of defective, low vigor trees.

3. **Reproduction over 18 feet in height, and the largest or dominant trees ranging form 4 to 8 inches d.b.h.; overstory is open to scattered.** This is the final major or harvest cut for the current rotation. In unmanaged stands, it usually consists of removing the overstory of mature timber, often as old as 250 years, but reserving approximately 5 seed trees per acre. These trees are to be of the best form and vigor available in the mature age class.

4. **Reproduction is fully established and the crowns of the immature dominants are safely above the reach of ground fires. D.b.h. of immature dominants 8 inches and larger. Overstory very scattered, usually seed trees.** Seed trees are to be removed when the young stand has reached this development stage. In fully managed stands, cutting of seed trees will be co-ordinated with commercial thinning for posts, poles, or pulpwood. Overstory trees less than rotation age should not be cut, except for reasons of form and defect.

This guide applies to even-aged tracts of ponderosa pine not over 100 years old. It has been designed
for simplicity in field application, recognizing the factors of site, soil, and moisture as they affect the board foot volume of basal area which a particular acre can support.

The forest is divided into three general classes—Area 1 including best sites, Area 2 including average sites, and Area 3 including poorest sites. There will be variations in each area class. The quality of the growing site affects both the diameter and height of the trees within the area. Figure 1 is a description of area classification.

Since it is possible to measure quickly the diameter of standing timber in contrast to height measurement, the d.b.h. measurement is to be used in determining stocking.

**Field Procedure**

1. Determine classification of area by a quick ground appraisal. See Figure 1.

2. Determine the diameter class of the stand. This is done by measuring 3 dominants and 2 co-dominants within a 1/10 acre plot (1 chain x 1 chain). Avoid selecting the largest tree for a sample tree. The average diameter is designated in inches and the fraction, if any, is disregarded. For example: 10.2” + 10.7” + 10.6” + 8.7” + 8.4” = 48.6”

   48.6"/5 = 9.7" average diameter.

   The fractional inch (.7”) is disregarded and the resulting inch class (9”) is used. Refer to Table 1 to determine the desired stocking and spacing.

3. Sample check plots of one square chain or 1/10 acre can be laid out to check the marking adherence. Stocking of plus or minus 10% of tree numbers listed in a given d.b.h. class will be satisfactory. Use Table 1.

Trees reserved for future cutting will be of the largest diameter and best vigor available. They will usually be in the dominant or co-dominant class. The objective will be to retain the dominant trees for the last two cuts of the current rotation (at least 140 years and 160 years for areas 1 and 2). Approximately 40 crop trees should be pruned, if funds are available, on areas 1 and 2 at time of thinning.

**Summary**

The mature and second growth marking guides for ponderosa pine now recognize the regeneration habits of this species. The use of the guides have provided uniform forest wide marking. The mature timber guide has been designed to meet silvicultural requirements of this species, treating the stand on a small group basis. Its application will provide sufficient sawtimber for industry until the second growth stands are of sawtimber size.

**About the Author**

Wendell H. Harmon received his high school education at Waverly, Iowa, and graduated from Iowa State College with a B.S. in forestry in 1932. The next three years were spent in homesteading in Lincoln County, Oregon.

Harmon entered the U.S. Forest Service in August, 1935, and his first position was foreman of Estes Camp in the Black Hills National Forest. Following experience in thinning, pruning and cruising in Colorado and South Dakota, he was assigned in 1937 as assistant ranger on the Hill City District of the Harney Forest. He was district ranger from 1939 to 1945, serving in the Harney and Black Hills Forests. From 1946 to June, 1949 Harmon was farm forester stationed at Humboldt, Nebraska. He returned to the Black Hills Forest in 1949 as staff assistant in charge of timber management. When the Black Hills and Harney Forests were combined in February of 1954, he continued as timber management staff assistant.

Harmon has published several articles, and has been active in The Boy Scouts of America. He was born in Waverly, Iowa, in 1910. He married the former Florence E. Thiirer, Spencer, Iowa, an Iowa State College graduate of 1931. They have four children.
THE APPLICATION AND PROPERTIES OF IMPREG

By Ray M. Seborg, Chemist
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The dimensional stabilization of wood by impregnation with phenolic resins as developed by the Forest Products Laboratory has been described rather extensively in many reports, magazines, and technical journals during the past two decades. However, because of the recent application of resin-impregnated wood (impreg) (4, 8, 9, 11, 12) for patterns and die models by the Ford Motor Company, this method of dimensionally stabilizing wood has been given considerable publicity in newspapers and trade journals during the past several months.

The results of the investigation by the Forest Products Laboratory and the Ford Motor Company of the suitability of impreg for patterns and die models was first given in a paper (7) presented at the annual meeting of the Forest Products Research Society, May 5, 6, and 7, 1954, at Grand Rapids, Mich.

At present resin-treated wood has been chiefly used in its compressed form. This stable form of resin-treated compressed wood (impreg) (4, 5, 6, 10, 11, 13) is sold under various trade names by the manufacturers of this product. Compreg is being currently used for cutlery handles, musical instruments, strain insulators (and other applications in the electrical field where a high-strength, high-dielectric material is required), electrical transformer parts, spar and connector plates, tooling jigs and forming dies, sporting goods, decorative applications, and for many applications in the textile industry.

Impreg is uncompressed, resin-impregnated wood. Impreg is made by impregnating the wood with an aqueous solution of phenolic resin, followed by drying and curing of the resin within the cell walls of the wood. This process has been chiefly limited to the treatment of thin sections of wood such as veneer, or to wood in short lengths, because of the difficulty encountered in obtaining uniform impregnation and in the subsequent drying of the treated wood in lumber-size dimensions. Of course, laminated panels of any desired thickness can be built up from the treated veneer.

This process involves the impregnation of veneer by an aqueous solution of phenolic resin, then first drying the veneer at approximately 175°F. to remove most of the water, and then curing the resin in the wood by heating for approximately 30 minutes at 300°F. In commercial practice the drying and curing of the treated veneer is generally done in a veneer roller drier. The treated veneer can then be glued into the panels by the conventional methods used in making plywood.

Advantages of Resin Impregnation
The chief properties imparted to wood by resin impregnation are:
1. Reduced shrinking and swelling and moisture absorption.
2. Increased resistance to heat.
3. Increased electrical resistance.
4. Increased resistance to chemicals.
5. Increased resistance to decay.
Except in hardness and compressive strength, which are slightly increased, the mechanical properties (2) of wood are not improved by this treatment. Toughness and impact strength are materially reduced.

Industry has taken advantage of some of the properties of impreg, including its high chemical resistant property, in the construction of Keller duplicating machine.
chemical storage tanks and filter frames from this material. Impreg also shows promise as a superior chemical-resistant material for fillers in Jordan refining machines used in the pulp and paper industry. The electrical-resistant properties (14) of this material have been utilized in its use for housings for electrical control equipment. Until recently, however, industry has been slow to take advantage of the most improved property, dimensional stability, imparted to wood by resin impregnation. In many applications where the lack of dimensional stability of the untreated wood has been a problem of major importance, the increased cost of impreg over that of untreated wood could be readily justified.

One of these applications is the use of impreg for die models in the automobile industry. Since the beginning of mass production of cars, the body parts have been stamped out of steel dies. In order to make the steel dies, models of the correct size and shape must be first made of wood, and from these wooden models the surfaces are duplicated in steel by Keller machines (fig 1). Since the wooden models determine the shape of the steel dies, it is highly important that these models do not change dimensions appreciably from the time the models are made until the steel dies have been completed. Changes in dimensions in the wood models, unless corrected, would be reflected in the dimensions of the steel dies with the result that the final products (car body parts) would not fit together exactly as designed. Frequently these changes may be of sufficient magnitude to require reworking of the entire surface of the models. Since each step in the engineering and tooling for production of a new model is closely timed, any delay is costly from a time and monetary standpoint. The fact that wood changes in dimensions with changes in moisture content therefore represents a serious problem, and one which has been faced with difficulty for the last 40 or more years in the automobile industry.

Most of the efforts that have been made to eliminate or reduce this difficulty involve attempting to prevent mechanically the entrance and exit of moisture with surface coatings (1, 3) such as paint, varnish, water repellents, and related products. These treatments have proved effective in retarding the rate of moisture changes, and are therefore effective in reducing changes in moisture content and dimensional changes when exposure to high or low moisture conditions is for short periods of time. Since surface coatings affect only the rate of moisture absorption and do not significantly change the amount of moisture that wood can absorb, this type of treatment is not effective in reducing changes in moisture content or dimensional changes of wood when exposed to long humidity-change cycles such as seasonal changes.

**Impreg in the Automobile Industry**

Because of the difficulty encountered in trying to maintain accurate dimensions of the die models, the Ford Motor Company sponsored a research project at the Forest Products Laboratory to determine the suitability of impreg for making die models and patterns.

The properties of impreg in general had been well established. However, the effect of phenolic resin on mahogany for this application had yet to be determined. This research project was therefore chiefly devoted to determining the effectiveness of resin impregnation on the reduction of dimensional changes of die models, the gluing and carving properties of this material, and the technique of manufacturing impreg panels for this application.

The effect of varying amounts of resin on reduction in swelling of mahogany veneer from ovendry to water-soaked conditions is shown in figure 2. The resin content was based on the weight of the untreated ovendry wood. The dimensional stability increases with increase in resin content up to approximately 30 percent. Additional amounts of resin do not significantly increase stabilization. Bakelite resin, BR15100, was the impregnating resin used in making impreg for these tests and for the impreg die models discussed in this paper.

In order to determine the dimensional stability of die models made from this material, two die models were made from impreg. Comparable models were made from conventional mahogany lumber. All four models were then subjected to high and low moisture conditions, and their relative dimensional changes were determined.

Since the standard die models are built up from mahogany boards, this practice was followed in the

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fabrication of impreg die models; that is, the treated veneer was first made into boards or panels of comparable thickness and width of mahogany lumber. A conventional hot-press phenol resin glue was used in the gluing of the veneer into panels. Impreg die models were then built up from these panels by using a room-temperature-setting resorcinol or epoxy resin as the bonding agent.

Honduras mahogany (Swietenia) has been used for making die models because of the low dimensional-change properties and the good working qualities of this species. With the increased stability and superior working quality imparted to wood by resin impregnation, other species of wood may be suitable for making impreg for this application.

The first batch of impreg for this application was made at the Forest Products Laboratory. This batch consisted of approximately 300 board feet of laminated panels (approximately 1 x 12 x 48 inches). Each panel was laminated from 17 plies of one-sixteenth-inch sliced Honduras mahogany (Swietenia) veneer. Later tests have shown that either well-cut sliced or rotary-cut veneer in thicknesses up to one-tenth inch is suitable for this application.

From this material, the first impreg die model with its comparable model from mahogany (upper back panels) was made by Deutsch and Sons Pattern and Machine Works, Milwaukee, Wis. Both models (fig. 3) were subjected to 90 percent relative humidity at 80°F, for a month and then to 30 percent relative humidity for the same length of time. The dimensional changes were determined periodically. The comparative dimensional changes of the two die models when subjected to 90 percent relative humidity are shown in figure 4. Each value represents the average measurements made at 24 different positions in each model. The results show that a 65 percent reduction in swelling was obtained for the impreg model. Similar values for reduction in shrinkage were obtained when the models were subjected to 30 percent relative humidity.

In the fabrication of models from untreated mahogany lumber, polyvinyl resin glues are currently being used for gluing the boards together. This type of glue depends on the partial loss of moisture to the wood; that is, the partial drying of the glue to give a good initial bond. Such a glue appears to be satisfactory for gluing untreated wood that will absorb moisture during the desired pressure period. This type of glue, however, was found to be unsatisfactory for the bonding of impreg panels, since the absorption of water by the treated wood is too slow and incomplete to give a good bond during the period of time that the material is clamped together. It has therefore been necessary to use a glue that does not depend primarily on the absorption of moisture by the wood to give a good glue bond. The various thermostetting resin glues, which harden or cure by undergoing a chemical reaction, naturally suggest themselves for such an application. Such glues, which are capable of reaction at normal room temperatures, are most desirable. Resorcinol resins or epoxy resins that set up at a room temperature of 70°F, or higher have proven satisfactory for this purpose when properly used.

Tests conducted on the impreg die model made from the original 200 board feet of mahogany impreg and on the conventional die model made from mahogany lumber, showed that impreg is far superior

Die models from mahogany lumber (left) and resin-impregnated laminated lumber.
to normal wood for this application. It was therefore desirable to further test the suitability of this material in larger die models. Consequently, two roof die models were made, one from impreg (fig. 5), and one from mahogany lumber. A roof model was chosen because it is one of the largest die models made, and also because experience has shown that it will change dimensions extensively due to moisture changes.

Comparative exposure tests at 90 percent relative humidity and at 80°F were made at the Forest Products Laboratory on the two models. Dimensional changes were determined after each week of exposure for a period of 4 weeks. Comparable dimensional changes in the width and length directions of the two models are shown in figure 6. The reduction in swelling of the impreg die model as compared to that of the conventional die model is in close agreement with the results obtained on the smaller die models (upper back panels) previously tested.

**Figure 6.--** Comparative dimensional changes in, A, width, and, B, length of a roof die model made from mahogany lumber and one made from resin-impregnated laminated lumber when subjected to 90 percent relative humidity.

**Production Begins**

For the construction of the roof die model and for various other tests, approximately 5,000 board feet of impreg panels were produced by Haskelite Corporation, Grand Rapids, Mich., and by Nickey Brothers, Memphis, Tenn., in cooperation with Koppers Company Wood Preserving Division, Orrville, Ohio. A second batch of 30,000 board feet of this material has been produced by these firms for the Ford Motor Company and manufactured under specifications set up by the Forest Products Laboratory. Plans are already being made for additional material. From this supply of material, each die-model shop and pattern shop in the Chicago, Milwaukee, and Detroit areas that makes models for the Ford Motor Company made experimental models. From their experience, there is no indication that it is any more difficult to make a model from impreg than from conventional mahogany lumber. In fact, there is
every indication that it will be easier. Generally, no increased dulling of the tools was experienced while working with this new material, and the surface of the models made from impreg is easier to sand to a smooth finish than the surface of the models made from conventional mahogany.

Several die models for the 1956-model cars have been made from this material, and they are now at the various tool and die shops, where the hard dies are being Kellered from them. It is expected that no difficulty will be experienced. The use of models made from this material will enable the tool manufacturers to take from the die model as many plaster casts as desired without experiencing any changes of dimensions or extortion of the original model. Also, from a practical usage standpoint, the model will be dimensionally stable throughout its life.

The Ford Motor Company has made from impreg, wood crankshaft patterns that were used to make experimental shell-molded crankshafts. In this application advantage is taken both of the dimensional-stability and heat-resistant properties of this material, inasmuch as the pattern is heated for the duration of an hour to 400°F, before the mixture is set and resin is applied. No apparent disintegration of the impreg occurred after over 50 cycles of heating at these conditions, which will readily char and disintegrate untreated wood.

From the results of tests on patterns and die models made from impreg, and from the performance of die models currently being used, it is reasonable to expect that this dimensionally stable material will possible replace the six million board feet of conventional mahogany lumber that is used annually for pattern and die models that require a high degree of dimensional stability. The application of impreg for patterns and die models is an extremely important technological advance that promises to effect substantial reduction of cost and improvement in product quality.

Literature Cited


About the Author ..

Mr. Seborg graduated from Montana State College in 1928 with a B.S. degree. He came to the Forest Products Laboratory directly after graduating, and has been there since, except for a period of six months in 1945 when he was a member of the Technical Industrial Intelligence Committee which investigated the technical developments in the various branches of science in Germany.

Seborg is a member of the American Chemical Society, the Forest Products Research Society and the Alpha Chi Sigma Chemical Fraternity.

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There can be no progress without research. No industry can continue to meet the present day competition unless it is continually developing new products or new and better methods of production. This fact is well illustrated in the field of plastics—a recent product developed by research. The importance of this research is emphasized by the financial budget of such industries as Dow Chemical, DuPont, and others. It is of no less importance in the field of range management.

Helpful information can be obtained in several ways. Sometimes new methods and procedures are discovered by observation through trial and error. But this procedure is costly and indefinite. Controlled field studies and laboratory investigation are essential in research. In range management research, as conducted by the Forest Service, emphasis is placed on controlled field studies supported with detailed studies of individual plant responses to certain stimuli.

**Range Research Problems**

The type of range management research being conducted at the Manitou Experimental Forest, in central Colorado, can be used to illustrate the work of the Forest Service in this field. The Manitou Experimental Forest is located in the ponderosa pine zone at an elevation of 7,600 feet. This area is typical of the foothills and low mountains of the Colorado Rockies.

Three major problems are being studied. They are: (1) Management of native bunchgrass ranges; (2) management of wornout and abandoned farmlands that have been reseeded to grass; and (3) the relation of water runoff and soil erosion to different conditions resulting from different types of range management.

One of the most important basic factors of range management is proper utilization of the range forage. If grazing use is too heavy, the health and vigor of the plants will be destroyed and production of forage and grazing capacity will decrease. If use is too light, maximum efficiency will not be obtained from a livestock operation. In order to determine proper use of pine-bunchgrass forage, six 300-acre experimental ranges have been grazed at three intensities of use since 1941. This study has shown that proper utilization of this native bunchgrass range is 35 to 40 percent of the total annual yield of grass and sedge herbage.

Studies of cattle on these ranges have shown that moderate grazing (Fig. 1) will produce 40 to 50 pounds more grain per animal during a 5-month season than will heavy grazing. (Fig. 2). Most of the gain, made by young animals, regardless of stocking rate, occurs during June, July, and August. During September and October little or no gain is obtained. For market cattle the forage consumed during this period contributes very little to the value of the animal and could best be utilized by the breeding herd or replacement heifers. Thus, earlier sales of market animals are indicated.

Moderate grazing use has maintained a healthy vigorous stand of native bunchgrasses, but heavy grazing has severely weakened the good forage species and inferior plants are increasing in abund-

![Moderate grazing—more forage, better livestock.](image-url)
During 1953 the production of grass and sedge herbage on open grassland parks in moderately grazed ranges amounted to 807 pounds per acre. Similar areas in heavily grazed ranges produced 540 pounds of herbage per acre. Of this amount 347 pounds were produced by blue grama—(Bouteloua gracilis)—an inferior and less palatable grass than the native bunchgrasses. In contrast, blue grama produced only 140 pounds per acre on moderately stocked pastures.

**Watershed Control**

Moderate grazing also maintains a satisfactory watershed condition. Studies of surface runoff and erosion on permanent pine-bunchgrass plots have demonstrated that although moderate grazing does allow more surface runoff to occur, the healthy plant cover prevents accelerated erosion. On the other hand, heavy grazing permits both excessive runoff and erosion to occur. Studies of the infiltration capacities of soils using temporary plots in the grazing intensity ranges have substantiated these results.

Economically moderate grazing is far superior to heavy grazing. Estimated net income from pastures moderately stocked may be from 50 to 100 percent more than income from heavily stocked pastures. Three factors are primarily responsible: (1) Greater gains per animal and equal or greater gains per acre; (2) less interest on the investment in livestock grazed; and (3) higher market values for animals sold in the fall. This last factor may be the most important of all. Appraised valuations for cattle from moderately stocked ranges at the Manitou Experimental Forest are $1.50 to $2.00 more per hundredweight than for similar animals grazed on the heavily stocked ranges.

The results of this research on native bunchgrass ranges are far reaching. They point the way to more successful management of livestock operations. They furnish both the private and public land managers with guidelines to follow in maintaining productive ranges. Properly applied, they will enable the mountain rangelands to compete more successfully with the inherently more productive lowland areas.

Unfortunately there are many thousands of acres of mountain rangelands that through overgrazing, or farming, or both, no longer produce good stands of native bunchgrass. On these areas improvement through livestock management alone may be a long process. Recent research in range reseeding has pointed the way to improve these lands rapidly and economically. In many cases production due to reseeding is often higher than could be expected from the original good native bunchgrasses.

The Manitou Experimental Forest may again be used as an example of research in this field. Three main steps in this program are: (1) What to seed? (2) how to seed? and (3) how to manage the stands after they are established?

**Reseeding Experiments**

In order to find out what to seed in the Front Range area of Colorado, all available promising plants were first seeded in small row plots. (Fig. 3). This was a screening process to eliminate those plants that were not adopted to local soil and climatic conditions. Species that were rated good or excellent in these tests were then tried under field conditions at different elevations, with varying climatic and site conditions. These trials furnished the basic information on species adaptability. Approximately 180 different range plant species have been tried in the row-plot tests with about one-half being rated as good or excellent for planting in the foothills and low mountains of the Front Range. Only 35 of these have been tried in extensive field-plot plantings. Of these, drought, winter cold, and inability to resist invasion by other plants has reduced the number of recommended species to six. These are crested, intermediate, and beardless wheat-grasses, (Agropyron cristatum, A. intermedium and A. inermis) smooth brome, (Bromus inermis), big bluegrass, (Poa amplo), and Russian wildrye, (Elymus juncus). These grasses can fill a wide variety of needs in the grazing requirements of livestock.
Reseeded ranges may be highly productive.

Even the best of these grasses will not produce good stands unless proper methods of planting are used. Studies have shown that the best stands of grass are produced on areas that have been plowed to remove existing plant competition, packed to provide a firm seedbed, and planted with a drill to get proper and uniform depth of seed coverage. Whenever it is necessary for any reason to shortcut this procedure, poorer stands inevitably result.

Range seeding does cost money. In most cases it means an investment of from $5.00 to $10.00 an acre. In order to protect this investment it is necessary to graze properly and manage efficiently. Perhaps less information is available in this than in any other phase of reseeding. At the Manitou Experimental Forest reseeded pastures of crested wheat-grass, smooth brome, a mixture of these two grasses, intermediate wheatgrass, and Russian wildrye are being studied to determine what constitutes proper utilization of these grasses. Under the soil and climatic conditions of the Experimental Forest it has been found that for smooth brome and intermediate wheatgrass at least 4 inches of ungrazed stubble must be left at the end of the grazing season if the plants are to remain healthy and vigorous. On the other hand, crested wheatgrass has been grazed to a 2-inch stubble height for six consecutive summer seasons without apparent injury.

Effects of Reseeding

The productivity of reseeded ranges cannot be denied. (fig. 4) Herbage yields will range from 1,000 pounds per acre to as much as 3,000 pounds or more depending upon the kind of grass used. Good stands of native bunchgrasses under the same condition will produce 600 to 800 pounds per acre. Beef production or total pounds of gain per acre is also high. At the Manitou Experimental Forest total gain from summer grazing has ranged from 50 to over 100 pounds per acre. This is considerably higher than the 12 to 15 pounds obtained from good condition native bunchgrass ranges. Furthermore, the productivity of these reseeded ranges has been obtained on wornout, abandoned farmland that produced less than 50 pounds of palatable forage per acre before seeding.

Reseeding, however, is not a cure-all for problems of range management. In fact it presents new and even more difficult problems of management not encountered on native ranges. For instance, yields of crested wheatgrass may vary from 2,900 pounds per acre one year to 600 pounds per acre in another year. This wide variation is due to fluctuations in rainfall and is more pronounced on reseeded ranges than on native ranges. This problem can best be solved by maintaining a flexible livestock unit, such as a cow-calf-yearling type of operation.

The Future

There are many other problems of management of both reseeded ranges and native ranges that are in need of research to find the most efficient methods of management. For example, one field of intermediate wheatgrass in private ownership is grazed extremely heavy during the spring—cattle are then removed and growth recovers sufficiently to cut for hay in September. This treatment would seem to be more severe than grazing to a 2-inch stubble height for the summer period but it has not damaged the stand of grass nearly as much. This emphasized the importance of season of use in the management of reseeded grasses. This and other problems are recognized by research groups and should be studied as funds and manpower become available.

ABOUT THE AUTHOR . . .

W. M. Johnson is employed by the Rocky Mountain Forest and Range Experiment Station as a range conservationist, and is assigned to the Manitou Experimental Forest. He graduated from Utah State Agricultural College in 1933 with a B.S. degree in range management. He obtained his advanced work in plant physiology and soils from the University of Minnesota in 1937. His first active assignment to research was with the Forest Service at the United States Sheep Experiment Station at Dubois, Idaho. Later he was assigned to the Davis County watershed project in northern Utah. In 1936 he was transferred to his present assignment in Colorado. He is the author of numerous publications dealing with range management and watershed problems in both the ponderosa pine and shortgrass types of vegetation.
During a meeting of the Memphis Lumbermen’s Club in the early spring of 1950, the words of two men initiated one of the most unique research programs ever known in biological circles. On this day, Dr. Curtis May, a government forest pathologist, had been asked to speak to this group on the relatively new disease of oaks, oak wilt. At the conclusion of Dr. May’s discussion, the late Leonard R. Steidel, a Club member, challenged his group to do something constructive in meeting this threat to their chief lumber tree. From this simple beginning, the National Oak Wilt Research Committee was born.

What Did This Mean?

Although oak wilt research had been conducted previously in some states, Iowa and Wisconsin for example, the organization of the National Oak Wilt Research Committee met the need for a national program in combating this threatening menace. This committee is composed of representatives from the American Forest Products Industries, Inc.; Appalachian Hardwood Manufacturers, Inc.; Associated Cooperage Industries; Hardwood Dimension Assn.; The Veneer Association; National Hardwood Lumber Assn.; National Manufacturers Assn.; Railway Tie Association; and Southern Hardwood Producers, Inc. They asked the research institutions of the states affected by oak wilt to develop and conduct an all inclusive research program on this malady of our mighty oaks. These institutions responded and were led by Dr. A. J. Riker of the University of Wisconsin who acted as chairman of their Technical Advisory Committee. The first industrial grant was made in 1951 to five institutions. During the four intervening years, these industrial associations through the National Oak Wilt Research Committee have contributed approximately $180,000 to oak wilt research.

Expanded Research Program Brings Results

Oak wilt research can be grouped under four main headings. These are the host and geographical distribution of the disease, studies on the organism causing the disease, the transmission of the disease, and controls for the disease.

All known species of oaks which have been tested are susceptible to oak wilt. Of other tree species studied, the American and Chinese chestnuts have also been shown susceptible. The reaction of the disease is different within the oaks. The trees within the red oak group die within one growing season from oak wilt, while those of the white oak group can have the disease for a period of years with only a few branches dying each year. Although this reaction is not understood fully, differences in lateral translocation rates within the trees of the two groups is thought to be part of the answer.

The geographical distribution of oak wilt has been determined by aerial and ground surveys. At the present time, oak wilt has been found in eighteen states east of the Rocky Mountains.

Effect of oak wilt in an Iowa state park.

Ames Forester
The organism causing oak wilt was originally described in 1944 as a fungus with an imperfect or asexual name of *Chalara quercina*. In 1957, the perfect or sexual stage of this fungus was found and the fungus was renamed *Endoconidiophora fagacearum*.

Most of the early studies on the oak wilt organism were done under artificial, laboratory conditions. In 1951, the fruiting structure of this organism was found in nature. This structure, the mat and pad as it is called, appears between the bark and wood of oak wilt killed red oaks. They are rarely found on trees of the white oak group. The mat portion of the fruiting structure produces the spores, both sexual and asexual, by which the organism can spread. The center portion, the pad, is cushion-like and produces enough pressure to crack the bark. This mechanism exposes the fruiting structure to the external environment. These structures also exude a cider-like odor which attracts birds, rodents and insects.

Oak wilt is transmitted in two ways; by root grafts between healthy and diseased trees and by some type of vector. Root graft spread was shown quite early in oak wilt research. Studies on overland transmission have produced much in the past few years. Several workers in 1953 showed experimentally that a few insects, principally the sap and fungus feeders, were able to spread the disease. Later that same year the disease was transmitted experimentally by squirrels.

Evidence at this time points to the need for the presence of certain conditions for usual vector transmission. These conditions can be briefly stated as the need for mats and pads on oak wilt killed trees, a fairly fresh wound on the tree to be infected, the spring or early summer growth period, and the presence of sexual spores on the mats. When all these conditions coincide, vector transmission appears to be at its maximum.

Although birds have also been suspected as carriers of the oak wilt fungus, no studies to date have placed them as vectors.

**Control Possibilities**

Control work has been slow but indications of progress are present. Root graft spread within a forest can be effectively stopped by the quick establishment of buffer zones around the diseased tree or trees. This zone acts as a break in the root connections of the trees. This can be done by cutting the roots with a blade, cutting the trees down which are within fifty feet of the diseased area or poisoning this ring of healthy trees with a silvicide.

The latter method has been shown to be the best under most conditions. The silvicide work in Iowa shows that a 10% solution of 2,4,5-T in kerosene applied to basal frills at dormant and budbreak conditions is the best. The use of such silvicides gives good root kill. Merely cutting trees does not produce this desired reaction.

Control of overland transmission has not been achieved yet. The only recommendation that can be made at present consists of destroying the diseased tree. This destroys the fungus which is needed for future overland spread. Studies are also being conducted on keeping these diseased-killed trees mat
A sap and fungus feeding beetle known to be an oak wilt vector. (Courtesy W. H.)

and pad free, and to discourage insects from populating these trees.

The other control studies in oak wilt research have been on chemotherapy. This constitutes the application to a plant of a chemical which is absorbed by the plant and acts against the disease within the plant. Although much empirical testing has been done, no chemical shows promise on large trees. Our fundamental knowledge of the oak wilt disease reaction within the oak tree is so lacking that an approach of this kind to control is very difficult.

The Future

Although our knowledge of oak wilt has increased much during the past few years, the future still holds many secrets. How long does the organism remain alive in wood, what are the disease reactions that cause the death of the tree, are the sap and fungus feeding insects the only probable vectors, and why are the disease reactions different within the oaks are some of the questions to be answered.

In conclusion the writer would like again to pay tribute to the oak-using industry for their support of this scientific endeavor. This is truly, another example of our free, competitive, enterprise system at work.

ABOUT THE AUTHOR . . .

Dr. McNabb graduated from the University of Nebraska in 1949 with a Bachelor of Science Degree. His major subjects were botany and chemistry. Upon his graduation, he entered the Graduate School at Yale University for advance study in Forest Pathology under Dr. J. S. Boyce. He received his M.S. in 1951 and his Ph.D. in 1954 from Yale.

McNabb's experience includes six summers with the U. S. Forest Service on the Kaniksu National Forest in Idaho where he advanced from a lookout-fireman to a district fire dispatcher. During the school year he held teaching assistantships both at Nebraska and Yale. While at Yale, he also worked on the Navy Tropical Wood Project. In February 1953 he became affiliated with Iowa State College as Assistant Professor of Forest Pathology in the Department of Botany and Plant Pathology. Besides being responsible for the work in Forest Pathology at the college, he also acts as coordinator for the forestry research at the college which is sponsored by the Iowa State Conservation Commission. In 1954, he also became an official member of the research staff of the Department of Forestry.

Professional and honor societies to which Dr. McNabb belongs include: Sigma Xi, American Phytopathological Society, Society of American Foresters, Iowa Academy of Science, National Shade Tree Conference, American Forestry Association and the American Association for Advancement of Science.

Sunde, as he is known to his friends, was born at Lincoln, Nebraska in 1927. He married Marguerite L. Nootz of Lincoln in 1949. They have a son and a daughter.
A MAN AND HIS SCHOOL

Banquet, Department of Forestry, Iowa State College
Fiftieth Anniversary

DeWitt Nelson, Director
California Department of Natural Resources
October 15, 1954

During the past two days we have been reviewing and reliving fifty years of Forestry at Iowa State College. We have brought into focus the influence which the school has had on the lives of each of us. We have renewed our acquaintance with a campus of outstanding beauty and inspiration. All of us have thrilled to the clear tones of the Campanile in the Indian Summer dusk, the crystal sharp morning after a dawn's ice-storm, the crunch of snow as impatient feet beat a path to the girls' dormitories on the eastern knoll and the peal of the Victory Bell following a football game.

It is significant in the history of our State and College that we gather here to commemorate the Department's Golden Anniversary with reminiscence of the past and contemplation of the future.

Few of us have spent much time on the campus in recent years. It is stimulating to renew old friendships and to see the growth that has taken place in the College. Many of us recall the biennial problem that "Prof. Mac" had in convincing the State Legislature that in this great corn state we needed a department of Forestry in the College of Agriculture. This spring, while visiting California, President Hilton assured me that there no longer is any question about the permanence of Forestry at Iowa State. With fifty years of history and 993 graduates I'm sure it would be hard to dislodge.

During this time many professors have devoted their best years to teaching at Iowa State. It is good to remember these men with whom we had such valuable associations. They left indelible impressions upon us. They taught us more than that found between the covers of a book. Among them were the strict disciplinarians, the idealists, and the realists. They all went beyond the call of duty in trying to teach us the theories, principles and facts of forestry; and more than that, the common sense application of that knowledge in the field. Theirs has been a hard task—one that has required the utmost in faith, hope and charity. To them, our professors, on behalf of all Ames Foresters I pay great tribute. To them, we owe a great debt of gratitude—a debt that can be paid only by passing on to others the same type of devotion, leadership and inspiration that they gave us.

In 1904 Forestry was an embryonic profession—something practiced in the Old World, but many doubted its need in this land of abundance. As a profession, Forestry still is young, but fifty years of growth and experience has well-justified the visions and dreams of those pioneers. This half century has seen it grow from a land full of federally-employed foresters drafting presidential proclamations which established great National Forests, to scientists working in laboratories, to trained foresters building and executing long term management plans for continuous forest production, and to teachers training more foresters for tomorrow. In every field of forestry endeavor Iowa State is well represented. A check of the 1954 roster shows 841 employed in private forest industry, 244 in the several federal services, 68 by states and counties, and 34 in education. Seventy percent of our graduates stayed with their profession or in directly allied fields. In each of these categories we have men who have risen to top levels of responsibility. To mention any of them by name would do an injustice to the others. After all, how can we judge success? Who is contributing the most—the man at the policy level, or the man with the marking gun? Each plays an essential part in this drama of the woods.

The romance of forestry is one of the magnets that has drawn men to it throughout the years. I know of no young forester who did not dream of working in the "Big Woods", of planting trees, or of being responsible for a small empire.

It has been said, "What would man do without his tomorrow? The past, though usually pleasant to remember, is over and done with. The present is always tugging us. But tomorrow, that is the dreamer's paradise. Everything is possible with tomorrow; no dream too foolish, no goal too high."
I think this quotation bespeaks that which has been the keystone of education at Iowa State College, particularly of its Department of Forestry. It has turned out men with dreams, and the desire and the courage to make those dreams come true.

The founders of this Department probably did not think of the day fifty years hence when we would be celebrating its Golden Anniversary. They could not have foreseen that in fifty years this prairie state would produce a thousand professional foresters whose "dreams of tomorrow" would play such a dynamic role in the forests of every state in the Union.

Today we dedicated a young forest to Professor G. B. MacDonald—"Prof. Mac" to us all. In that forest there grows something more than trees. In it is "Prof. Mac", and fifty years of forestry professors, and a little bit of each of us. It symbolizes the years of work and vision on the part of those leaders; the disappointments and heartaches they had with us as undergraduates; the struggles with the Legislature to continue the forest school in a state that grows few trees, the romantic appeal that grips most young Paul Bunyans, and the hard, practical sinew of the professional practicing his trade. To us it is the heart of a growing monument that is multiplied many times over by Ames men throughout the forests of every state. The MacDonald Forest, for decades to come, will transmit to each new class lessons of the past and inspirations for the future.

What are some of these lessons and inspirations? First, there are the lessons of history which reach into antiquity—the stories of the forests and their relationship to land and people. We know that forests and species have disappeared from once-lush countries. Many fascinating historical tales include the forests and the use of wood—the Trojan Horse, the ships of the Phoenicians, the Sherwood Forest. There are also the pages of history which tell of men and nature working together to maintain a forest economy, such as those of Switzerland, Germany, and Scandanavia.

Close association with nature brings out the best in a man. It creates a comradeship which first is felt when a student goes to summer camp, and it continues throughout his career. While recently reading an English History of Forests, published in 1853, I noted this passage—"when civilized men take up their abode in forests, they relapse into a state of semi-barbarism." I'm sure the author must have been a forester professor just returned from summer camp.

We have a wealth of humorous anecdotes and lusby tales. No patron saint he, but Paul Bunyan has sat beside every forester's campfire. The songs of the French Canadian lumberjacks and the memory of the ring of the woodsmen's axe and the shrill whistle of the steam donkey engine are sounds dear to the heart of every forester.

And then there are the men—men of courage and vision. Some in forestry schools some in government and some in industry, but all driving toward a common goal.

And then there are the women—the women who have played a major role in the making of our traditions. Just as the close association with nature brings out strength of character in men, it also brings out strength of character in women. A forester's wife must say, as did her sister Ruth, "Whither thou goest I will go, and where thou lodgest I will lodge, thy people shall be my people", and, if I may paraphrase, because the groves were God's first temples, "thy devotions will be my devotions."

Each present time is destined to add its bit of wealth of the past. The aspect for foresters today is the necessity for, and the privilege of, working with large numbers of people. Population no longer is a static thing. The ratio of urban and rural population has changed alarmingly in the last decade. The impact of fuller use of the forest lands, and the demand for more forest products, has created a new concept in forest administration and management. There are ever increasing conflicts of interest and philosophies of use as more people seek the forests for homes, recreation, sport and commercial enterprises. More and more the forester must adjudicate and integrate these uses with each other.

The need is for more than just a good technician. The forester today should be grounded in sociology, psychology and the humanities, for at nearly all levels he works with people as much as with trees. Learning does not cease when he receives his degree—it has just begun. A forester must keep abreast of a rapidly-expanding science, and follow the developments in other related fields, sciences and industries; for there is an interdependence of many of them. He should affiliate and actively participate in his professional societies, for by so doing he not only gains personally but also makes a greater contribution to his profession.

In what fields are men exemplifying their ideals in practical application? They are being exemplified in the search for factual knowledge in the class room, in the field, in the laboratory; and in the translation of this knowledge into techniques of application. The real tests of practical application are: first, the teaming of wood technology and forest management; second, the task of solving the problems of a widely-dispersed pattern of forest ownership and intensive competition for land use; and third, taking full advantage of the ground swell of industrial expansion in tree growing, in woodland management and in utilization. In these areas we can deal only with facts stripped of emotionalism.

It has been only during recent years that we have had adequate facts with which to work. Each year our library of knowledge is growing. Early American forestry was an attempt to transplant European techniques to a land where neither the people nor the woods were receptive to the application of such a rigid science. But the early foresters—and many of

Ames Forester
them still are active—were resourceful and soon learned to adapt basic principles to our far-flung forest lands. The forests adapted themselves to intensive management more readily than the people could adapt themselves to the philosophies of such management in a country that could see no end to a great resource.

As time progressed many good forest practices were developed extemporaneously and by trial and error methods. Both are costly in time and timber. Gradually research and experience is enlarging our background of knowledge for application in the field. At the same time the development of this new knowledge and these techniques exposes great new areas of ignorance into which we must grope. One basic principle we know, but one which is not yet sufficiently practiced—our great forest areas can be better managed and improved, or poorly managed and impaired.

Forestry today is going through its greatest period of transition. Forestry is coming of age. It is beginning to be truly recognized as a profession and to be accepted by the public, by the land owners and by the forest industries. Forestry is on the threshold of great opportunities and greater responsibilities. Can we as professionals meet the new challenges? Forestry's future cannot be left to chance. Our schools and practicing foresters have an obligation and a responsibility to exert real leadership—leadership that is both technically sound and practical of application; leadership that is willing to compromise issues but not principles; leadership which recognizes that, in our form of government, progress is made through a process of evolution and not revolution.

Here is a challenge for all of us. Here is a task that can we achieve only through understanding and teamwork between the people, the public foresters and industrial foresters striving for a common goal. We must stimulate progress and yet be tolerant when it comes painfully slow.

On a firm foundation this college has been built brick by brick and building by building. It has sent men and women throughout the world to apply their knowledge and to teach others. As foresters our greatest task is to teach others the methods and techniques of good resource management. No longer is a timber famine feared by those who know and understand the productive capacities of our lands. The only danger is the lack of willingness on the part of the people to make full production possible.

Today's concept is that of more effectively blending the theoretical with the practical; the fusion of the using industries with the science of land use and timber production. More and more the laws of economics are playing a leading role in sound forestry. No longer are there great frontiers of virgin forests to tempt exploitation, yet there still are many who give little heed to tomorrow's crop. Opposing these are an ever-growing number of land owners and operators who are applying the principles of sound management and utilization as rapidly as the economics of their industries can absorb them. The idea of "Tree Farms" is taking hold from coast to coast. While these gains are being made within the limits of prudence and practical vision, the scientist must look to distant horizons; he must continue to strip the shroud of mystery from the problems of the field. We must learn the relationship between plants, soil and water. We must realize that soil, like a tree, is a living thing—it has physical structure, chemical composition and biological components. We must learn how to get the most from our soils and climates. The science of chemistry is opening new opportunities in forest growth, protection from insects, disease and fire, as well as in the fields of utilization. There undoubtedly are biological controls of forest pests which we must discover. We must seek better ways of integrating the production from many small mills to secure better utilization of valuable raw material. In this field many large operators have accomplished complete utilization. These are among today's frontiers. They are the uncertain and undeveloped regions in the field of forestry and utilization. They will provide new opportunities for the younger generations.

The Department of Forestry at Iowa State can be proud of its 50 year record; proud of its professors who have produced continuing crops of skilled foresters; and proud of its men who have given outstanding leadership in a profession that is little older than the Department itself.

Many years ago President Wheeler of the University of California told a graduating class, "Our future concerns the use we make of our training here—the result will be what we make it. Destiny is a great word, but so far as each of you is concerned, it is a home-made article." Iowa State has produced many skilled craftsmen, each of whom is playing a part in shaping the destiny of America's forest resources and industries today. We, as alumni, are proud of our school and we pledge our best to make the school proud of us.

I have spoken of the inspiration that comes from our associations and from the traditions of our past. I have tried to present for your consideration some of the present problems and some of the future aims of professional foresters. There is a phrase which I wish to add which extends my meaning—an eye on the stars and feet on the ground.

The challenge to the school becomes simply this—can it train young men who, armed with idealism, can apply their ideals as well as their technical knowledge to their profession? Those of us who have graduated from this school of forestry believe that this challenge has been met during these past fifty years, and that this school will continue to educate men who will be a credit to their profession, who will be confident in their technical knowledge, and who will follow their lodestar and lift their eyes unto the hills.
Feature Section
## In Memoriam

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(Known deceased alumni)
CONSERVATION . . .

Investment for the Future

Conservation is America's investment for a bright future. We must conserve the forests — conserve the fields — control erosion — build up the soil . . . and protect our other resources.

In the twentieth century, scientific care and cultivation of forest resources have become a prime necessity toward adequate conservation.

Iowa State College is one of America's greatest technological institutions preparing men for this kind of work as well as for the purely commercial aspects of the wood industry.

Developing fully the educational program of the College is the responsibility of the alumni and of all friends of Iowa State. And yet the work is only begun.

To help you personally share in building an even greater Iowa State College, the Alumni ACHIEVEMENT Fund is providing an opportunity that is stirring the hearts of great men and women. To help the College meet needs which cannot be satisfied through regular appropriations is the Fund's primary objective.

The Alumni Association has established a broad-based annual giving program to accomplish this objective. Each year all able alumni, former students and friends of the College are encouraged to contribute to the achievement of the Fund's objectives. These objectives represent real needs of the College that can be your investment in the future.

ALUMNI ACHIEVEMENT FUND
IOWA STATE COLLEGE
AMES, IOWA
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MEMORIAL UNION
Life Member
Paul Bunyan

is a life member of the Iowa State College Memorial Union and is entitled to all the rights of membership in the Union building and in meetings of the corporation.

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Secretary.

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BY COMPLETING YOUR MEMBERSHIP

Erected and operated without the use of tax funds

The great and bountiful forests of America represent a heritage entrusted to the forester’s skill and knowledge for future America.

The Memorial Union, providing a well-rounded cultural and social program for Iowa State men and women, depends upon its loyal Alumni for its future life of service and opportunity.
To the Seniors of 1955

During the fall of 1954 we paid tribute to fifty years of professional training in forestry at Iowa State College. In February of this year the Forest Service also had a fiftieth birthday. A number of our sister schools have recently observed fiftieth anniversaries. Forestry in the United States, along with its many allied fields, is no longer an infant. It is a big boy and yearly growing bigger.

Along with the “growing up” of forestry the opportunities for men trained in this field have become both more varied and numerous. There are opportunities with public agencies, with private industry and in the field of self-employment. Never have foresters had greater chance for success than today. The formal training which you have received, the practical experience which you have had and the many college, divisional and departmental activities in which most of you have participated should help you to find and hold a place in your chosen field.

Those of us on the staff who have had the privilege of working along side you for the past few years will watch your progress with pride. We shall rejoice over each new success you achieve. On behalf of the staff and department let me say “thank you” for all that you have done to make forestry prosper at Iowa State.

SENIORS

   After completing two years of military service Al hopes to find a job in forest management with private industry. He has worked two summers with the Forest Service and one summer in a paper mill. Al has been a member of Holst Tract, Festival Chorus, Gamma Delta, and a M.R.A. activities chairman. During his leisure hours Al enjoys hunting or singing.

   John is the editor of this year’s AMES FORESTER, and was assistant editor of the ’54 AMES FORESTER. Other activities include events chairman of the ’54 Veishea Paul Bunyan Day, and a member of Alpha Zeta, agricultural honorary. He has spent one summer working on the Upper Peninsula Experimental Forest, and another summer with the Iowa Coop. Wildlife Research Unit. His major interests are in wildlife and management. John’s plans for the future include a hitch in the service, working for the Forest Service, and graduate school. His hobbies are golf, archery, and wildlife. He is a member of the Society of American Foresters and the Forestry Club.

EUGENE CHELSTED—Somers, Iowa—Summer camp, Hiles, Wisconsin, 1952.
   Military service will get Gene upon graduation, but he has hopes of pulp cutting in Wisconsin after his tour of duty. He is a forest management major with two summers forestry experience as a dispatcher for the Lewis and Clark Forest. Gene was four years on the Holst Tract Committee and vice president of Forestry Club in ’54. His sporting interests are hunting and fishing.
DON A. COLLEN—Mason City, Iowa—Summer camp, Texas, Arizona, 1950—Married.

Don is most interested in the chemical utilization phase of forestry. He has spent a summer connected with the nursery business. His hobbies are hunting and fishing. His plans are to start working in his field as soon as possible after graduation.


Marv is the alumni editor of this year’s AMES FORESTER, and has served as summer camp photographer, summer camp reporter and local ad assistant in the past. Other activities include treasurer of the Forestry Club and work on the Forestry Float and Forestry Concession Stand. Marv spent a summer as Forest Recreation Aid in Michigan. His hobbies are hunting, fishing and wood-working. He has taken the general forestry major and hopes to work for the Forest Service.

JOHN O. EVenson—Austin, Minnesota—Summer camp, Wyoming, 1953.

John’s plans after graduation include at least a year of graduate school and then a job in private industry along wood utilization lines. He has worked for the Forest Service one summer on the Superior National Forest in Minnesota. John’s activities include M.R.A. house president, Paul Bunyan Days, Game Banquet, Hoe-down, Forestry Club, AMES FORESTER reporter, and associate editor ’55. His hobbies are hunting and fishing. John is a member of the Forest Products Research Society.


Bert’s interest is in retail lumber, and he hopes to run a retail yard someday. He will have a tour of duty with the Signal Corps upon graduation. Bert has been local ad salesman for the AMES FORESTER and publicity chairman for Paul Bunyan Days in ’54. One summer with the Forest Service and working in a retail lumber yard constitute Bert’s experience. He is a member of Acacia social fraternity. Bert’s hobbies are hunting, baseball, basketball and photography.


Wayne’s interest lies with private industry, but first comes a hitch in the Navy followed by graduate school. He has worked one summer on the Targhee National Forest in Idaho. Wayne’s activities include national ad manager of the ’55 AMES FORESTER, Game Banquet Chairman ’55, Paul Bunyan Days, Order of the Sextant, Forestry Club Librarian and Representative to Agriculture Curriculum Committee. He is a member of Farm House social fraternity. Wayne’s hobbies are drawing and fishing.


Jim’s main interest is in forest management. He was assistant sales manager, and is sales manager for this year’s AMES FORESTER. He is a member of Pi Kappa Alpha society fraternity, Society of American Foresters, Forest Products Research Society, Society of Advanced Artillery Cadets and a member of the Forestry Club. His hobbies are hunting and fishing. Jim spent a summer working for the Ames Nursery. His immediate plan for the future is military service.
WILLIAM E. GRUENING—Blairsville, Iowa—Summer camp, Hiles, Wisconsin, 1952. Bill has had practical experience in cruising and mapping for a private concern. He is interested in forest management which he hopes to follow after serving his hitch in the Army. Bill has been active as assistant circulation manager of the AMES FORESTER in ’54, and as a member of Inter-fraternity council, Festival Chorus, Army Rifle Team and Forestry Club. His hobbies are target shooting, hunting and music. Bill is a member of Lambda Chi Alpha social fraternity.

OWEN HERRICK—New Milford, New Jersey—Summer camp, Texas & Arizona, 1950—Married. Owen hopes to become an industrial forester. Forest management and utilization in the northeast are his specialties. Photography is his main hobby. Owen gained his forestry experience in New Jersey and New Hampshire where he worked in sawmilling, timber cruising and stand improvement.

SIDNEY D. HERZBERG—Des Moines, Iowa—Summer camp, Hiles, Wisconsin, 1952. Sid’s interest lies with private industry in the products and selling line. He has worked one summer for the Forest Service in Montana. Sid has a tour of duty to serve with the Army upon graduation. His hobbies include sports in general and fishing.

JACK S. HOLLAND—Pleasantville, Iowa—Summer camp, Wyoming, 1953—Married. Jack is a utilization major and plans to work in the manufacturing phase of utilization after graduation. His practical experience was spent with the Forest Service on the Flathead National Forest. Hunting, fishing, and trapping are Jack’s favorite outdoor sports.

DAVID C. HOW—Brookfield, Illinois—Summer camp, Hiles Wisconsin, 1952. Dave’s interest is in forest management. He worked in Idaho as a Forestry Aid for two summers. His hobby is leaf collecting. After a hitch in the army, Dave hopes to work in the west in forest management. He is a member of the Frisbie Fellowship.

BOB HUNT—Scranton, Iowa—Summer camp, Wyoming, 1953—Married. Bob is majoring in forest management and has hopes of Forest Service employment after graduation. He has one year’s experience with the Iowa State Conservation Commission. Bob’s activities include assistant editor and circulation manager of the ‘54 and ‘55 AMES FORESTER. His hobbies are gun collecting and photography.
Ron's interest lies with the Forest Service after graduation. He has had one summer's experience with them in Montana. Ron is assistant sales manager of the '55 AMES FORESTER and a member of the Forestry Club. He was on the wrestling team in '50. His hobbies are gun collecting and repairing, hand loading and hunting.

Lyle has been very active as president and secretary of the Forestry Club. He is a member of Alpha Zeta, Agriculture Council, and Veisheo Open House committee. He has worked three summers on the Kootenai National Forest on blister rust control. Lyle's interest lies in the forest management field and he hopes to work for the Forest Service after completing his tour with the Air Force. His hobbies are hunting and fishing.

HOWARD C. JOHNSON—Clinton, Iowa—Summer camp, Hiles, Wisconsin, 1952.
Howard has been a trail foreman on the Umpqua National Forest and a timber marker on the Nezperce National Forest. He is a utilization major, and would like to work in private industry. Howard was local ad salesman of the '54 AMES FORESTER. His hobbies are singing and sports.

Jack is particularly interested in forest management. His practical experience has included two summers work for the Forest Service in Oregon; one as lookout, the other as a guard station. Upon graduation he plans to go into timber management work in Oregon. His activities include assistant events chairman for 1954 Paul Bunyan Day and work on several campfires. He is a member of the Society of American Foresters and the Forestry Club. Hobbies include photography and hiking.

PAUL R. LORENZ—Des Moines, Iowa—Summer camp, Hiles, Wisconsin, 1952.
Paul's interests lie in forest and wildlife management. He has had experience as a fire suppression crew member on the Williamette National Forest in Oregon. He was a member of '53 Fall Campfire committee, '54 Spring Campfire committee and '54 Veisheo Open House. Paul is a member of Delta Upsilon social fraternity. His hobbies are hunting, fishing and photography. Member of Forestry Club.

Clarence has served in the capacity of assistant business manager of the '54 AMES FORESTER, and is business manager of this year's AMES FORESTER. Other activities include secretary of the Forestry Club, co-chairman of the '54 Veisheo Open House and chairman for '55, member of the Society of American Foresters, Iowa State Singers, Alpha Zeta, Phi Mu Alpha music honorary, Treasurer of Adelante social fraternity, Student Deacon of Collegiate Presbyterian Church, member of the Collegiate Presbyterian Church Choir and Transportation Chairman of Westminster Fellowship. He is currently vice-president of Forestry Club. He has worked as a Forest Recreation Aid in Utah. His hobbies are fishing, hunting and music. Clarence's main interest is in the field of wood utilization in which he hopes to be employed after finishing his tour of duty in the service.
Bob hopes to find work with the Forest Service following graduation. He has spent two and one-half summers working for them in fire fighting and timber stand improvement. Bob's activities include the Winter Sports Club and the Promenaders. His leisure pastimes are weight lifting, bird watching and Western music.

DELBERT L. PLOEN—Clinton, Iowa—Summer camp, Hiles, Wisconsin, 1952.
Suppression work for the Forest Service in Oregon was Delbert's forestry experience. His option is forest management. Delbert will see three years of Air Force duty after graduation. Del has been very active in department circles. He holds the position of assistant sales manager for the '55 AMES FORESTER and was on the president's cabinet of Forestry Club. He is the current president of the Forestry Club. He worked on the '53 & '54 Veishea Open House, was co-chairman of the '53 Spring Campfire and '53 & '54 Campfire; and sales manager for the '55 Game Banquet. Del is a member of the Society of American Foresters. His hobbies are athletics, hunting and fishing.

JAMES F. TORRENCE—Oskaloosa, Iowa—Summer camp, Hiles, Wisconsin, 1952.
Jim's interest is in forest management and he hopes to work for the Forest Service in this capacity. He has been active as publicity director of the '54 AMES FORESTER and as a member of the Forestry Club and the Society of American Foresters. Jim has worked one summer as an engineering aid on the Ochoco National Forest in Oregon. He is a member of Pi Kappa Alpha social fraternity. Hunting, fishing and camping are his hobbies.

Jim has had 17 months of experience working for the Forest Service. He hopes to continue working in this same capacity when he graduates. When not busy with school Jim enjoys carpentry work and any type of sports.

Roger's experience includes work in the nursery business and in a milling yard. His hobby is jazz music. Forest utilization is Roger's main interest. He is a member of the Forestry Club, and Veishea Open House committee. Roger's plan for the near future is a hitch in the army.

LAWRENCE P. WILHITE—Moberly, Missouri—Summer camp, Texas & Arizona, 1950.
Larry's forestry experience was scaling for the Forest Service on the Ochoco National Forest in Oregon, and Coeur d'Alene National Forest in Idaho. He is a timber management major with Forest Service employment as a goal after graduation. Larry's hobbies are hunting and fishing. He is a member of Forestry Club and Gamma Delta religious fraternity.
THE FACULTY

PROF. G. B. MacDONALD
general forestry
conservation
(partial retirement)

PROF. J. A. LARSEN
(partial retirement)

PROF. A. L. McCOMB
silviculture
forest influences
graduate research

PROF. G. E. GATHERUM
silviculture
range management

PROF. R. B. CAMPBELL
extension forester

PROF. G. W. THOMSON
mensuration
photogrammetry
advisor, Forestry Club

PROF. G. B. HARTMAN
Head of Department
lumbering
wood preservation
logging

PROF. L. F. KELLOGG
mensuration
finance
management
advisor, Ames Forester

PROF. D. W. BENSEND
logging
products
wood technology
Holst Tract committee

PROF. J. G. YOHO
general forestry
economics
policy

Ames Forester

FORESTRY CLUB OFFICERS

<table>
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<tr>
<th>Spring ’54</th>
<th>Fall ’54</th>
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<tr>
<td>President</td>
<td>Charles Goff</td>
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<tr>
<td>Vice-president</td>
<td>Malcolm MacPeak</td>
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<td>Secretary</td>
<td>Clarence Lutz</td>
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<td>Treasurer</td>
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<td>Senior Ag-Council Representative</td>
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<td>Junior Ag-Council Representative</td>
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Under the able leadership of the above men, the Forestry Club concluded another successful year.

Veishea Open House and Paul Bunyan Day, Holst Tract, Game Banquet, Hoeclown and Campfires were the main activities of the club throughout the year. A new endeavor to be considered during the coming year is the possibility of starting a Christmas tree plantation.

Club meetings are held every other Thursday at 7:30 p.m. in Curtiss Hall. To increase interest in Forestry Club some meetings are being held in the pleasanter atmosphere of the Memorial Union. Entertainment in the form of movies, slides and guest speakers is arranged, and coffee and doughnuts are served as refreshments.
Forestry's Fiftieth Anniversary
At I.S.C.
1904 – 1954

Homecoming at Iowa State had a special significance for the foresters this year. On October 15th and 16th, alumni and former students came to Ames from all parts of the United States to help celebrate the 50th Anniversary of professional forestry education at the college.

Nearly 200 foresters and their families gathered from 25 states renewing acquaintances with old friends and trying to "place the face" of some equally forgetful classmates. For many, this was the first reunion since graduation. As additional foresters gathered in the hall around the registration desk, the intervening years were rolled back and almost forgotten events of summer camp, hoedowns, and camp fires were recalled.

Alumni and their wives met Friday morning, Oct. 15, in the newly redecorated auditorium of Curtis (formerly "Ag") Hall. After a message of welcome by Professor G. B. Hartman, Head of the Forestry Department, President J. H. Hilton presented two degrees.

Thomas R. Truax, '12, Chief, Division of Wood Preservation, Forest Products Laboratory at Madison, Wisconsin was awarded the Doctor of Agriculture degree for his world leadership in wood technology.

Fritz J. Poch, who attended Iowa State from 1916 to 1922, received the Bachelor of Science degree. He retired last July as Forest Supervisor of the San Isabel National Forest in Colorado.

To most old grads, the most impressive point of the morning session was the dedication, by Fred Trenk, of the MacDonalds Woods. This tract of timber, recently acquired through contributions of alumni and friends, will be a living memorial to "Prof. Mac." The 8-acre area, lying just northeast of Ames along the Skunk River, will be used for laboratory purposes.

After an informal luncheon at the Memorial Union, the foresters met again in Curtis Hall where the present and proposed forestry program at Iowa State College and in Iowa was presented by members of the college faculty and forestry leaders in Iowa and the midwest. The wives spent the afternoon touring WOI-TV studios and the Memorial Union.

Friday evening a very successful banquet was held in Great Hall, Memorial Union. There President Hilton presented special awards for meritorious service to forestry and conservation to:

- I. T. Bode, '15, Director, Missouri Conservation Commission.
- Fred E. Boeckh, '28, Assistant General Manager, Minnesota and Ontario Paper Co., International Falls, Minn.
- Paul M. Dunn, '23, Dean of Forestry, Oregon State College, Corvallis, Oregon.
- DeWitt Nelson, '25, Director, California Department of Natural Resources.
- George J. Pecaro, '30, Vice-President and General Manager, Pioneer Division, The Flintkote Co., Los Angeles, Calif.
- Fred B. Trenk, '23, Extension Forester, Wisconsin.

DeWitt Nelson addressed the overflow crowd of 342 foresters, their wives and friends. Professor Hartman showed a number of pictures of former staff members and various summer camps to wind up the evening.

Saturday, the foresters sat in a reserved section at the Homecoming game with Colorado. During the half time period, the Iowa State band honored the foresters with a number of spectacular formations featuring Paul Bunyan. The Buffs were too much for the Cyclones, but most foresters enjoyed the game.

The committees in charge of the anniversary celebration did an excellent job. Faculty and students alike contributed generously of their time and energy to make the show a success. The alumni who attended were unanimous in expressing their appreciation of a well-planned, well executed program.

Note: For those unable to attend the anniversary, DeWitt Nelson's inspiring banquet address is reprinted in this issue.

Ames Forester
DeWitt Nelson speaks at banquet

Registration
Curtis Hall

Alumni luncheon
State Gymnasium
The Iowa State College Forestry Camp, for the second consecutive summer, pitched its 19 tents on the Medicine Bow National Forest near Ryan Park, 'via Saratoga', Wyoming, about 60 miles north of Laramie. Uh-huh, sometimes even the mail had a little difficulty in finding us.

Camp included 39 students—38 guys and a gal. Four of the five instructors brought their families out for at least part of the 8 weeks to add variety to camp life. Mr. and Mrs. Larson had the gigantic job of feeding all the monstrous appetites, and also saw that we had enough bread for our sack lunch sandwiches—one meat, one cheese, and all the peanut butter we could eat!

The courses were again mensuration, under Prof. Thomson; silviculture under Prof. Gatherum; utilization under Dr. Bensend; and Forest Operation under Prof. Kellogg. The course work included side trips to Colorado and the Black Hills to visit wood using industries and forest range management operations.

Every camp must have its colorful characters, and everyone at the 1954 camp seemed to have something to offer. According to the authorities of recent years, last summer's session had the whip cracked harder over them than any other camp. In fact, with the plainly stated rule of 'no firearms discharged in camp', the crack of McCormick's bull whip brought our camp director, Prof. Thomson, to a full trot in an effort to discover who was shooting the revolver at the east end of camp. The sound fooled a good
CAMP — 1954

many people, including the visiting district game warden.

Nick-names also had their individualistic touches. Fred Omundson, who ran the P-X, was dubbed “Abie” or sometimes “Abie Omundstein.” He may still be using the Lava soap left over from the summer’s supply. Senior Don Larson was more or less respectfully referred to as “Ranger Larson.” Wisconsin’s proud son, Lee Andreas, emerged as “Ambrose.” Ed Harvey promptly became “Rabbit” (you know, Harvey, the six foot tall invisible rabbit). When Ivan Cackler was at the wheel of the truck, the battle cry was “Roll ’em, Cack!” or “Give it to her Ivy!” If you were in a hurry to get back to the mail on Monday, Wednesday, or Friday, you made a dive for Duane Breon’s truck. He could make it do double time on mail days.

Beards and Bull-Durham reigned high in popularity with quite a few. The former took the time, the latter took the practice. Until the art had been mastered some rather oddly shaped cigarettes were smoked and often drew such comments as: “Hey, Don, what brand are you smoking these days?” to which another onlooker would reply, “It’s a Camel, I can tell by the hump!”

The third day of camp brought us in contact with fire fighting. It was a mighty tired and hungry crew that rolled into camp that night. A low flying comment heard: “Today we fight fire, tomorrow we get a lecture telling us how.” The automatic response to any griping was, “If you can’t hack it, GO HOME!” (Camp was dismissed with the original 39 students.)
Meals were all pretty important, from breakfast, a miss and hit situation—miss it and it hits you before noon—through those sack lunches including the ever faithful peanutbutter sandwich, and dinner which the Larsons generally worked all day to prepare. I'll have to hand it to those KP's, too. They all did a swell job, but how they all hated to clean the muffin tins that the Monday morning eggs were cooked in.

There weren't more than two or three evenings all summer when the volley ball wasn't in full action. Many of those rousing games included Profs. Thomson, Gatherum and Einsphar.

Horseshoes was another favorite. There were some wicked shoes pitched during these sessions, weren't there Prof. Hartman? The football and baseball even saw some action.

Some of the campers enjoyed fishing and brought back some nice fish from the river. A couple of attempts at rattlesnake hunting were made but the sole catch was a lonesome little horned toad. No one was heartless enough to take him out of his home territory, although he traveled via shirt pocket for quite awhile.

Over a three day holiday, two of the hardiest hiked up to the Snowy Range and back, some 60 miles round trip. How is that for a brisk outing? And, of course, there were many trips made up to Kennedy Peak and its lookout station, some of them involving compass work, and others just luck—the Irish kind.

The time the skunk moved into the kitchen tent will be a memorable one, at least for Mrs. Larson. Who knows how long he had been behind the range, but when he moved out under the serving counter he created quite a stir. Apparently deciding that being a target for a female forester's marble shooting with moth balls was no fun, he ambled back behind the range again, and, if left alone, seemed perfectly contented. He left as quietly as he came, to Mrs. Larson's great relief.

One of the spectacles of the special Thursday night campfires was the performance of the camp combo, 'The Shiels of Laramie.' Good? I guess so! How could they help it with Bill Warner on trumpet, Jim Phillips on washboard, Duffy Pillsbury on Jews harp, Hilton Muntz on banjo, Lee Andreas on wash basin and tub, Don Omodt on slide whistle, and Ron Christensen on the two gallon Hilex jug.

All in all, everyone seemed to agree that it was a pretty successful camp. Wyoming treated us royally and even the weatherman was cooperative. Good luck to future summer campers and may your camps be as successful as ours of 1954.
The 1954 Open House was again held in a tent north of Curtis Hall. An archway built over the entrance of the tent invited visitors to view the exhibits. Small jack pine and douglas fir trees were scattered throughout the tent to add to the atmosphere. An estimated crowd of 7,000 people passed through the tent to see the displays, proving again that Open House is one of the main attractions at Veishea. The 1,200 spruce seedlings from Wisconsin, given as souvenirs, were gone in three hours, but this still seems like a slow way to reforest Iowa.

The object of this year's Open House was to show the public what foresters do, both in school and out. A curriculum display showed the schedule of courses taken during the four years at Iowa State. A number of technical instruments used in class work and in the field were displayed along with textbooks representing different subjects.

An aerial photogrammetry display showing campus photos and stereograms was set up stereoscopically. A simple test of stereoscopic vision was included for all to view. Some visitors are still wondering what the little message had to say, and maybe some of the students who haven't had a course in aerial photogrammetry are wondering the same.

A scale topographic map of the Holst Tract was displayed. Areas were delineated showing the type of work being done. Photographs taken on the area were displayed in the background.

Of the exhibits showing work foresters engage in after graduation, the model dry kiln attracted the most interest. It was a scale model complete with model loads and all the mechanical operations of a real kiln. Problems of air-drying and kiln-drying were explained to the public. Examples of shrinking, swelling, checking and splitting of wood were shown.

A fine retardent demonstration consisted of actually burning untreated and retardent treated wood, and comparing the results. Along with this was a preservation display which consisted of a large panel flow chart showing the steps in wood preservation. Small samples of treated and untreated materials were displayed in front of the exhibit.

The displays were well received by the public who directed a constant stream of inquiries at the attending foresters.

Much appreciation is due Ray Renaud and Harold Sieverding, chairman and co-chairman, and their hard-working committee for producing a successful Open House.
PAUL BUNYAN DAY

May 14, 1954, was the date of the forester's annual Paul Bunyan Day. Early in the morning of this day many foresters were busy in the area of central campus in front of Curtis Hall getting things ready for the day's festivities. Early in the afternoon everything was in readiness.

Professor Hartman, department head, opened the celebration with a short welcoming address and then announced that Charlie Miller had been elected "Son of Paul." Charlie was awarded a double bit axe.

The program continued with Onnie Pakkonen serving as Master of Ceremonies. The various tests of skill among the foresters now began. The events were judged by staff members. Lyle Jack and Gene Chelsted made the sawdust fly fast and furious in winning the log bucking contest. They each received a pair of leather hunting mittens for their efforts.

Bill Byrns received a knife and axe set for winning the log chopping contest. Dale Lucas awed the spectators with a mighty heave in the log throwing and completely overshadowed his competitors, thereby winning a knife and compass set. Neal Peyton split his log in four very neat quarters and won the splitting event. Neal won a gun case. Charlie Goff had sworn to win the chain throwing contest, but had trouble and broke his chain, so Charlie Miller went on to win the gun cleaning kit. The most exciting event of the afternoon was the canoe tilting. A record number of entries made standing on the gunnels a necessity. After several broken canoes and bruised foresters had been dragged out of Lake La Verne, Kathy Clark and Jim Bulman emerged as the victors. They each received a set of fishing lures.

A near record crowd witnessed Paul Bunyan Day this year. It was held near the Open House to help attract visitors to that function. Paul Bunyan Day continued to be one of the highlights of Veishea.
THE Holst State Forest, an area of 316 acres near Frazer, Iowa, continued this year to provide valuable practical experience for Iowa State foresters.

A committee of eight Forestry Club Members, headed this year by seniors Lyle Jack and Gene Chelsted, has continued the plan of managing this area as a model for multiple use of Iowa woodlands. Also under the administration of the Holst committee is an area known as Pilot Mound, also located near Frazer.

The highlight of activities on the Holst Tract this year was the completion of cuttings on the eight plots which are being used to determine reproduction under different cutting methods. The plots, including buffer strips cut by the same methods, have been cleared of cut material and are awaiting developments during the growing season. An incidental chore on the plots included the taking of growth data on each of the trees removed. It is hoped a volume table may be compiled from these data in the future.

Projects in the fall included clearing trails to the plots, trampling weeds in the plantations, and installing some "thank-you-mams" on the road. The "thank-you-mams", a suggestion of faculty advisor "Howdy" Gatherum, are intended to stop erosion which has been cutting away at the steeper parts of the road.

Committee members reported good progress by the seedlings and cuttings which were planted on the Pilot Mound area last spring.

It is hoped that the Holst State Forest will continue to serve as a proving ground for techniques in wood production, wildlife protection and erosion control as well as recreation.
FORESTRY STUDENT WIVES CLUB

RECOGNITION DAY
FOR
IOWA STATE
FORESTERS

ON JUNE 4th outstanding foresters during the 1953-54 school year were paid special tribute at the annual Forestry Recognition Day Convocation.

Darrel F. Parker was honored as valedictorian of the senior class.

Lyle Jack and Clarence Lutz received membership in Alpha Zeta, agricultural honorary recognizing juniors and seniors in the upper two-fifths of their class who exhibit high scholarship, leadership and character.

The following foresters were initiated by Gamma Sigma Delta as representing the upper one-fourth of the senior class and showing exceptional ability in agricultural research.

Charles Coyle  Conrad Schallau
Malcolm MacPeak  Verner Schmidt
Darrel Parker

HERE we pay tribute to the women who have played major roles in our lives as students. They are the women who have stood beside us these four long years and who look forward to that final day with as great an anxiety as that of their husbands, for it means that many of them can now relinquish their positions as the money earner and devote full time to being wives and mothers to their families.

The Forestry Wives Club meets every other week at the homes of the members, where they discuss the latest in everything and "coffee clutch."

Officers are elected each quarter, and twice each year a meeting of the faculty and student wives is arranged.

The annual Christmas party and pot-luck supper will be held again this year to get the families better acquainted, and to welcome new members.

Verner Schmidt for the second consecutive year was awarded the George W. Catt Memorial Scholarship.

Darrel Parker received the Society of American Foresters Award as the outstanding senior on the basis of scholarship, attitude and leadership.

Jim Dale, '52, again received a National Research Foundation scholarship to further his graduate study.

Student participants in departmental and all-college activities were also honored, but are too numerous to mention here. Many of them are cited in the coverage of these activities in this issue.

Ames Forester
FORESTER'S HOEDOWN

On the evening of March 4, all of the "timber-beasts" turned out to McKay Auditorium to entertain their lady friends at the annual Forester's hoedown. The "shin-dig" warmed up to music from a Ward Combo. Although all the musicians were engineers, they turned out a few creditable tunes. The climax of the evening was a number by a charming backwoods group (Bill Svenson, Bob Clauson, Dick Brown and Andy Lindquist), and the presentation of the prizes. The prize for the best lumber jack outfit somehow went to a non-forester, but the boys should be able to recover it next year.

Following refreshments featuring "sourdough" and "red-eye", the floor was worn thin to square dancing called by Wayne "All-right-you-knockers" Scholtes.

FORESTER'S GAME BANQUET

"Teton" elk was served at the 1954 forester's Game Banquet, February 9, at the Collegiate Presbyterian Church. The meat was a gift to the Forestry club from Bruce Strotman's brother-in-law. Novaply samples, donated by the American Plywood Company, and cigarettes were furnished as table favors.

The speaker was Mr. Albert Powell, field representative for the Douglas Fir Plywood Association, who centered his talk on job opportunities for graduating foresters in the plywood industry. Mr. Powell, an agricultural engineer, was sent to the Central States purposely to create a demand for plywood construction in farm buildings. Mr. Powell's interesting and stimulating speech gave all the foresters an encouraging view of their demand in a growing and stable plywood industry.

Special guests at the banquet were Mr. and Mrs. Floyd Andre, Dean of Agriculture; Mr. Roy Kottman, Assistant Dean of Agriculture; and Mr. and Mrs. Mans Ellerhoff, Superintendent of Iowa Forests.

The "Agenizers" furnished musical entertainment. The quartet was made up of Chuck Miller, Al Bar- den, Ken Cosgriff, and Bob Franklin. The master of ceremonies and chairman was Charles R. Goff. The committee consisted of Lyle Jack, Gene Chelsted, Wayne Geyer, and Mary Schwarte.
'54 Spring Campfire

Despite the wet weather a large crowd turned out for the Spring Campfire. Dry wood was hard to find, but after an extended search by the committee enough was gathered.

Volleyball and touch football started the festivities and increased appetites for the evening meal. The menu consisted of wieners, beans, potato chips, donuts and coffee. It was prepared by Bruce Strotman, campfire chairman, and his staff of Gene Chelsted, Lyle Jack, Del Ploen and Clarence Lutz.

MC Bruce Strotman did a fine job of handling the evening's program. Each graduating senior introduced himself and told of his future plans. Professor Thomson then announced the new Forestry Club officers in his usual enjoyable manner.

The principal speaker of the evening, Larry Seick of the C. E. department, then gave a very interesting account of his recent trip in the Amazon River country of South America.

A quartet composed of Al Barden, Charlie Miller, Ken Cosgriff and Bob Franklin sang several selections after which group singing took place to end a very enjoyable evening.

'54 Fall Campfire

This year's Fall Campfire opened the 50th Anniversary Celebration of Forestry at I.S.C. Some of the alumni who had arrived early for the celebration were present at the campfire. Among these were DeWitt Nelson, principal speaker at the anniversary banquet, and his wife.

After enjoying the evening meal which consisted of wieners, beans, potato chips, donuts and coffee, the crowd was entertained with humorous anecdotes by MC Bruce Strotman. Professor Hartman introduced the alumni that were present and briefly told of each one's present position.

The main speaker of the evening was Dr. Aikman of the Botany department. His subject pertained to the potentialities of forestry in South America. He has spent some time in this area during the past several years, and presented some useful information to the foresters attending the campfire.

Compliments go to Bruce Strotman and Del Ploen, co-chairmen, and their able staff, Lyle Jack, Paul Lorenz and Gene Chelsted, whose combined efforts provided an enjoyable and successful Fall Campfire.
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ALLEN, SHIRLEY W., B.S. 1909, M.F. 1929, 820 Daniel Street, Ann Arbor, Michigan. Professor of Forestry, Emeritus, University of Michigan.

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ALMDALE, ROY W., B.S. 1941, 5213 W. 70th, Prairie Village, Kansas. Southwest Lumber Company.


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ANDERSON, RAYMOND E., B.S. 1949, Midway Trailer Park, Newton, Conn. Field Executive, Boy Scouts of America.

ANDREWS, CHARLES W., B.S. 1950, 517 South Welch, Villa Park, Illinois. Forester, Cook County Forest Preserve.

APPLEQUIST, MARTIN B., B.S. 1940, Baton Rouge, Louisiana. Assistant Professor, School of Forestry, Louisiana State University.


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BALL, GLENN, B.S. 1938, 2301 Twelfth Street, Meridian, Mississippi. Manager, Filmkote Company.


BARMER, MAURICE P., B.S. 1943, Box 15, Hebo, Oregon. Forester, Siuslaw National Forest.


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BARRETT, JAMES W., B.S. 1911, 1330 Robson St., Detroit, Michigan.

District Agricultural Agent, University of Missouri.


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BLYTH, JAMES E., B.S. 1954, Ames, Iowa. 

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BOYCE, JOHN T., B.S. 1949, Address Unknown.


BRADDOCK, DONALD L., B.S. 1950, Address Unknown.


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Getty, Russell E., B.S. 1936, Route 3, Box 480, Dundee, Oregon. Division of Forest Bureau, Land Management.

Gibbs, J. A. M.S. 1927, B.S. Colo., 180 Lardenville, Wilmington, Ohio. Staff Member, Ohio University.

Gibson, Lawrence M., B.S. 1935, 7th Avenue and 7th Street, Park Falls, Wisconsin. Sulphite Superintendent, Flameboard Paper Division, Kansas City, St.


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Gochnauer, Thomas B., B.S. 1940, 4400 A Street, Lincoln, Nebraska. Ford Motor Company (Tractor Division).

Gossard, Dean C., B.S. 1949, Beefhead Route, Magdalena, New Mexico. 60 National Forest.

Gottschalk, Fred W., B.S. 1933, M.F. Yale, 3912 Stoneway, Seattle 9, Washington. President, Mackintosh and Truman, Inc.


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Green, Charles H., B.S. 1926, Box 385, Amarillo, Texas. Commission Lumberman.

Green, Duane L., B.S. 1953, School of Forestry, Bottineau, North Dakota. Farm Forester.

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Gulick, Miles J., B.S. 1952, North Fork, California. Timber Sales, Sierra National Forest.

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MOESSNER, KARL E., B.S. 1930, Federal Building, Ogden, Utah. Photo Interpretation, Intermountain Forest and Range Experiment Station.
MOLLISON, ALLAN N., B.S. 1942, Box 390, Billings, Montana. Range Examiner, Office of Indian Affairs.
MOREY, HAROLD F., B.S. 1929, 172½ Second Street, S.W., Minot, North Dakota. Department of Fish and Wildlife.
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MULLER, PAUL M., B.S. 1935, 725 East 48th Street, Savannah, Georgia. Area Forester, Gaunt Woodlands Corporation.

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MURPHY, WILLIAM E., B.S. 1952, 1918 Golden Valley Road, Minneapolis, Minnesota. Sales Representative, Chicago Rivet and Machine Company.

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OLSON, OLIVER L., B.S. 1935, Route 1 #1 Kalamazoo, Michigan. Owner, Grocery Store.

OLSON, PAUL L., B.S. 1950, 511 South Ninth Street, Oregon, Illinois. Farm Forester, Illinois Division of Forestry.

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PARKER, DABIEL F., B.S. 1954, 1300 S. 27th, Lincoln, Nebraska. City Forester, Lincoln, Nebraska.

PARSONS, JACK D., B.S. 1951, Gardiner, Oregon. Gardiner Lumber Co.


PATTERSON, ARCHIE E., B.S. 1937, M.S. 1939, 520 Catalia Street, Athens, Georgia. Professor, School of Forestry, University of Georgia.

PATTERSON, DEAN E., B.S. 1951, Ogden, Iowa. E. A. Milligan & Sons (Retail Lumber).


PATTIN, JOE C., B.S. 1948, 2105 Crawford Street, Bellevue, Nebraska. Forester, U. S. Army Engineers.

PAULSEN, HAROLD A. Jr., B.S. 1948, c/o Rocky Mountain Forest & Range Experiment Station, Colorado A&M College, Fort Collins, Colorado. Rocky Mountain Forest & Range Experiment Station.


PECARO, GEORGE J., B.S. 1930, 1060 Lind Flora Drive, Wes Los Angeles 49, California. Vice-President and General Manager, Filnkote Corporation.

PERRIER, JOHN D., B.S. 1949, Winterset, Iowa. Hawkeye Lumber Company (Retail).

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PROUT, CLARENCE W., B.S. 1923, 5552-24th Avenue, South, Minneapolis 17, Minnesota. Deputy Commissioner of Conservation, Minnesota Department of Conservation.


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REHM, ROLAND S., B.S. 1951, 1521 Scott Street, Little Rock, Arkansas. E. L. Bruce Service.

REHMANN, THEODOR W., B.S. 1918, 210-37th Street, Des Moines, Iowa. Real Estate and Investments.

REISTROFFER, LIEUT. ROBERT J., B.S. 1939, Address Unknown, Military Service.

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SKVARIL, WARREN J. B.S. 1944, Address Unknown.
SMITH, CLYDE T., B.S. 1931, Route 2, Campbellsville, Wisconsin. Area Coordinator, Forest Park Management, Wisconsin Conservation Department.
SMITH, MAYNARD J., B.S. 1930, Okoboji, Iowa. Manager of Smith’s Cottages.
SMITH, F. T., B.S. 1911, 107-23rd Street, Sioux City, Iowa. Manager, Animal Feed Department, Luidia Packing Company.
SMITH, R. F., B.S. 1915, Address Unknown.
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SMITH, WALTER F., B.S. 1958, Box 345, 126 Orchard Road, Norris, Tennessee. Division of Forestry Relations, Tennessee Valley Authority.

SODERBERG, GORDON, B.S. 1930, 1140 North 1 Street, Fremont, Nebraska. Foreman, Christianum Lumber & Coal Company.
SODERLING, DONALD E., B.S. 1950, 603 Elm Street, Prineville, Oregon. Farley & Loetcher Manufacturing Company.
SOMBERG, SEYMOUR, B.S. 1928, Percival, Iowa. Farming.

SORENSEN, WAYNE M., B.S. 1951, DeQueen, Arkansas. Dierks Lumber and Coal Company.
SPAIN, CHARLES, B.S. 1917, Couer d'Alene, Idaho. The Long-Bell Lumber Company.

SMITH, ROBERT E., B.S. 1951, 1219 Hobbs Street, Sac City, Iowa. Military Service.
STIEHL, JAMES, B.S. 1939, Taylor Road, Barrington, Illinois. Assistant Sales Manager, Edward Hines Lumber Company.
STONE, WENDELL E., B.S. 1933, 748-13th Street, Laurel, Mississippi. Redwood Dealer.
STOUT, MARGARET, (Mrs. C. A. Abell), B.S. 1930, Mount Hermon, California. Ranger’s Wife, Shasta National Forest.

SUDER, ROBERT G., B.S. 1934, Canby, California. Modoc National Forest.

SULLIVAN, WILLIAM F., M.S. 1928, Address Unknown.

SVENDBY, CLARENCE, B.S. 1926, 1701 Horton Street, Fort Scott, Kansas. Owner, Nursery and Greenhouse.

SWANSON, CARL G., B.S. 1942, Address Unknown.
SWANSON, CHARLES M., B.S. 1932, Address Unknown.
SWANSON, CLIFFORD O., B.S. 1938, Slater, Iowa. Hardware Dealer.
SWANSON, HAROLD V., B.S. 1941, Address Unknown, Military Service.
SWEM, THEODOB R., B.S. 1940, 2419 South Dahlia Lane, Denver 22, Colorado. Land Management Officer, Region 7, U. S. Bureau of Reclamation.

SCZYMCEK, FRANK O., B.S. 1953, 851 10th Street, Mason City, Iowa. Forester, Gauford Container Corporation.

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TAYLOR, PAUL K., B.S. 1950, Manson, Iowa. Wisconsin Lumber Company.


TEUBER, ROSS L., B.S. 1948, Apache Creek, New Mexico. District Ranger, Apache Creek National Forest.

THARP, ORLO E., B.S. 1936, Bellefontaine, Ohio. Farming.

THAYER, MARSHALL, B.S. 1926, Address Unknown. Biologist, State Department of Fisheries.

THIEKLING, KARL F., B.S. 1931, Box 1391, Santa Fe, New Mexico. State Forester, Soil Conservation Service.

THOMAS, GAIL M., B.S. 1936, 735 E. Franklin, Bend, Oregon. District Forest Engineer, Western Pine Association.


THOMPSON, DEAN W., B.S. 1940, Address Unknown. State Forester, Soil Conservation Service. 

THOMSON, GEORGE W., B.S. 1943, M.S. 1947, 224 Howard Avenue, Ames, Iowa. Assistant Professor, Department of Forestry, Iowa State College.


TOMASCHESKI, JOSEPH D., B.S. 1951, Box 313, Myrtle Creek, Oregon. Timber Cruiser, Fir Manufacturing Company.

TORGERTON, GEORGE H., B.S. 1942, 803 Crayton Avenue, Gurdon, Arkansas. Forester, Gurdon Lumber Company.

TOW, EDWIN E., B.S. 1937, 1649 Finley Street, Dubuque, Iowa. Manager, Wage Incentive Standards Department, Farley and Loetscher Manufacturing Co.

TOWN, CHARLES R., B.S. 1923, 656 Meeker, Delta, Colorado.

TREEMAN, RALPH W., B.S. 1942, Box 1181, Lawton, Oklahoma. Treeman Nursery.

TRENBERT, ORLO E., B.S. 1936, 735 E. Franklin, Bend, Oregon. District Forest Engineer, Western Pine Association.


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