The IDAHO FORESTER

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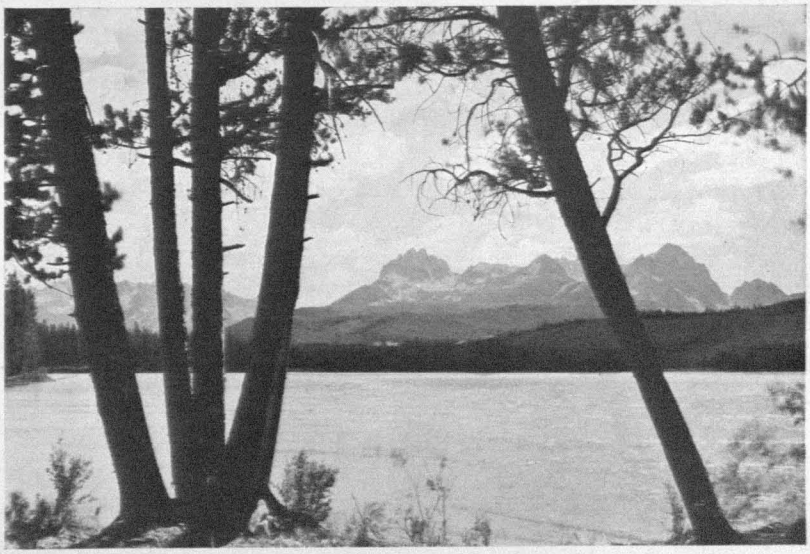

" . . . I love Idaho for its far-flung forests, . . . "

" . . . where one may go in solitude, and in the soughing of the pines, hear the whispering of nature's music. . . . "

THE IDAHO FORESTER

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CONTENTS

Page

Dedication, Honorable H. C. Baldridge 4
The Relation of Forests to Irrigation, by Honorable H. C. Baldridge 5
The State House, Boise, Idaho 6
The Benefits and Services Rendered by the National Forests to the State of Idaho, by M. H. Wolff 8
Range Management on Indian Lands, by J. P. Kinney 11
Big Game Management, by Orange A. Olsen 13
The New Public Domain, by M. H. Wolff 14
The Place of Chemical Research in Forestry, by Dr. E. C. Jahn 15
Planning a Forest for the University of Idaho, by E. A. Sherman 17
Income from Recreation Sources to New England 17
Gift of Experimental Forest, by Dean F. G. Miller 18
Branded a "Biler," by Stanley Foss Bartlett 19
Extension Forestry in Idaho, by Stanley C. Clarke 20
Vice President Curtis Plants Spruce on Campus 22
Learn From the Trees 22
The New State Forester 23
Tractor Course Proves Popular 23
Blasting Demonstration Practical 23
Paul Bunyan's Big Top, by Dr. Ernest E. Hubert 24
Class of 1933 25
Graduate Students 26
Fishin', by Stanley Foss Bartlett 26
The Associated Foresters, by Corland James 27
Here and There (Field Trip Pictures) 28
Banquet Better Than Ever, by William V. Cranston 29
The 1932 Junior Field Trip, by J. P. Brown 31
Junior Field Trip Pictures 32
A Forest Mystery Solved 33
Xi Sigma Pi, by G. Lloyd Hayes 34
Do You Remember? (Musings of the Alums) 36
Idaho's Record Trees, by Floyd L. Otter 37
School Has Distinguished Visitors 39
A General Comparison of Aerial and Ground Surveys, by J. A. Chamberlin 40
Appreciation 44
An Address to the Associated Foresters, by George M. Fisher 45
George Washington Memorial Dedicated 47
Idaho White Pine Saw Logs (Picture) 48
Juniors Repeat Barbecue Win 49
Directory and News of Alumni and Former Students, by Wm. D. Miller 53
Index to Advertisers 64

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DEDICATION

In grateful recognition of his service to the cause of forestry in the State this edition of The Idaho Forester is dedicated to
The Honorable H. C. Baldridge
Former Governor of Idaho

THE RELATION OF THE FOREST TO IRRIGATION

HONORABLE H. C. BALDRIDGE
Governor of Idaho 1927 to 1930

THE relation of the forest to irrigation is a close one and without the coverage incident to the growth of the forest our irrigation would be materially reduced. That we may get the value of this relationship I shall first discuss the irrigation development of our state. I shall then endeavor to show what the forest means and has meant to this vast irrigation development of Idaho.

Idaho is blessed with the largest supply of water of any irrigated state on account of having within her boundary a very large percentage of the Snake River and its tributaries. Idaho also has a large body of land which on account of the character of the soil is well adapted to irrigation. Having the water and this fine area of land, coupled with ideal climatic conditions, a progressive and enterprising citizenship has placed Idaho in the front rank among the irrigated states.

FARMING PRIOR TO CIVIL WAR

Irrigation development began in Idaho about the middle of the nineteenth century in the southeast section of the state near the present town of Franklin, the first project being developed in that section by a group of Mormon pioneers. It is estimated that in 1860 the total amount of irrigated land in the State was less than 1,000 acres. Irrigation now extends entirely across the southern portion of the State, following generally the Snake River with sections here and there along the way still in sagebrush.

In the northern end of the State there are some irrigated tracts also, among the largest being the Rathdrum prairie and the Lewiston tract. The Boise River Valley and the so-called upper Snake River Valley began irrigation development about the same time as those in northern Idaho.

In southwest Idaho, some irrigated tracts are found in the Bear River Valley while others are in the Snake River Valley and its tributaries.

TWIN FALLS PROJECTS IMPORTANT

The development since 1900 has included two of the largest tracts in the State, the Twin Falls and South Side, and the Boise projects. The completion of the great American Falls reservoir in 1927 was an outstanding event in irrigation accomplishment both in the State and in the Nation. It is the largest reservoir in the State, having a capacity of 1,700,000 acre feet.

At the time of the dedication of the American Falls dam Dr. Work, then Secretary of the Interior, made the statement that in its construction we had the most outstanding evidence of co-operative effort between the Government and private interests that had ever been undertaken by the Government up to that time.

The latest development in irrigation enterprises is the Gooding division of the Minidoka project which was completed in 1931. This project includes new lands, but the greatest urge for its construction was to give a full water supply to lands with a partial water right and which were urgently in need of additional water.

More than 2,500,000 acres of land are now under irrigation in Idaho. It is estimated that these 2,500,000 acres comprise some 30,000 farms, which should have, and will have under normal conditions, a value of $375,000,000. In normal times these irrigated acres will produce annually approximately $75,000,000 of wealth.

IDAHO HAS POTENTIALITIES

A large percentage of our population finds employment in the cultivation of our irrigated farms, without which our agriculture would be of little consequence as a State. The major portion of our people have employment for which our irrigated farms are directly or indirectly responsible.

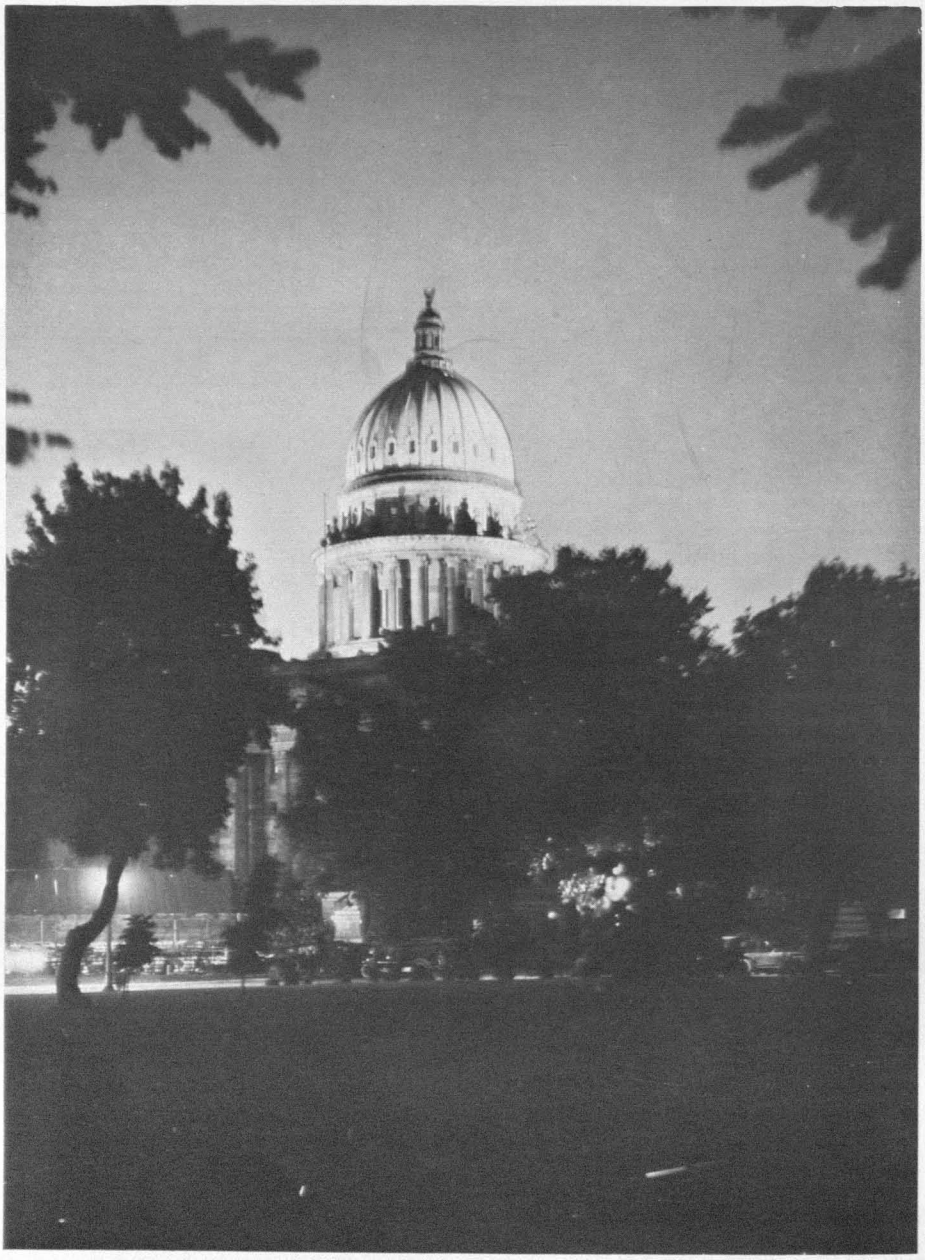
Idaho still has thousands upon thousands of acres of land from the standpoint of soil, topography and climate which are well suited to irrigation. Great quantities of water running away each year unused doing no one any good save and except possibly developing electrical energy of which we have a potential development of at least 5,000,000 horse power. When the time comes, as it will, when we need more land in cultivation, Idaho can furnish the land and the water which will continue to produce food and give employment to other thousands yet to come to our fair State.

PROTECTION OF WATERSHEDS VITAL

We shall now give our attention to the discussion of our watersheds which hold the source of the water which annually comes down to make our thirsty lands produce and which, after all, is the thing which makes our deserts "blossom as the rose."

These watersheds, for the most part, are covered with forests, brush, and other vegetation. Much of the watershed area lies within or adjacent to national forests.

In times past much discussion has been provoked because of the manner in which our forest areas have been handled, with regard to cutting of timber, grazing, fire protection, and all factors which in turn have more or less affected the plant cover. This plant coverage



The State House, Boise, Idaho

in turn may and does influence the water supply and its usability. Until recent years little attention has been given to reforestation and the protection of our watersheds without the thought in mind of continuing and perpetuating the coverage which is needed to conserve the water supply.

The conservation of the plant coverage such as the forest tree and other vegetation is necessary that the snow be retained to prevent early "runoff" of which we have heard much complaint in recent years from our irrigation farmers. The Forest Service from its inception has recognized the need for protection of these forest areas from the standpoint of the water supply and its use.

General Public Concerned

The writer, in 1929, as a member of the State Land Board, in company with representatives of the Forest Service, Southern Idaho Timber Protective Association, and lumber operators, made a survey of the Boise and Payette watersheds for the purpose of studying plans for protection of the forests and forest vegetation and the conservation of the water supply for irrigation. The same year a group of farmers and irrigators made similar investigations. This all indicates the interest of the public which is very great in the subject of the relation of the forest to irrigation.

There is no doubt of the need for study of the use and handling of the forest and forage and other resources on the watershed in such a way that the handling of the same may be compatible with the welfare of irrigation development. These resources supply the basis for range livestock production and the lumbering industry, both of which are not only essential to the State, but are also interrelated with irrigation farming in the interchange of commodities and all interested in the general upbuilding of the State.

The U. S. Forest Service realizing the importance of protecting our watersheds started about 1929 an intensive and continued study of erosion. This is being done because Forest Service officials recognize the menace of erosion to reservoir and canals, as well as the need for preservation of vegetation upon our watersheds.

Future Generations Considered

Methods of cutting timber on our watersheds, slash disposal and grazing are all being studied that we may preserve and perpetuate forest growth and all vegetation for the benefit of ourselves and posterity.

Another factor in the relationship between the forest and irrigation is the development of electrical energy which is now being used by the farmers almost all over the irrigated section. Were it not for the conservation of water upon these forest-covered watersheds which results in stream flow in our rivers being maintained throughout the year, power development could not have been promoted. This utility has come to be a valuable asset to our State and especially to our farmers. Electric power for use in pumping plants for irrigation and the use of electricity upon Idaho farms has become more or less common. Perhaps no single thing has done so much to remove drudgery from the farm as the use of electricity.

The annual flow of water from our forest-covered watersheds, the development of power upon our rivers, the use of water for our irrigated lands, has made Idaho a leader among the intermountain states. Our great diversity of crops, and our large acreage production are not excelled by any state and equalled by few if any.

Lumbering Idaho's Second Industry

Again our large and extensive forest areas furnish summer range for vast herds of sheep and cattle which in turn, in winter, find feed upon our irrigated farms to the profit of both the farmer and livestock man. Our forests provide a large amount of lumbering which is the second largest industry in the State, agriculture being the largest. The lumber industry employs a large number of men in normal times and thereby furnishes a market for no small amount of the products of the farm.

Our irrigation farmers are interested, along with all our people, in the large State holdings of the largest stand of white pine to be found in the United States. The timber owned by the State was valued at $35,000,000 a few years ago. Though it is not worth that amount now the time will come when it will be worth even more.

The writer has endeavored to outline some facts which show the relation existing between our forests and irrigation. The loss of either our forests or our irrigation would ruin our State. It is therefore necessary that we preserve both. So as a state we have sought in recent years to protect our forest by legislation which we believe is proving beneficial to the public and to those who are interested privately in the conservation of our forests for the benefit of posterity.

Timber protective associations are functioning throughout the State, which organizations co-operate with the Federal Government, the State, and private interests to the end that all may receive a maximum benefit in the protection of our forests.

The writer desires to express appreciation to Dean Francis Garner Miller for the very fine service he has rendered as Dean of the School of Forestry of University of Idaho and especially for services rendered during the period the writer was Governor of Idaho.

The writer desires also to express his appreciation to former Commissioner of Reclamation George N. Carter and Harry C. Shellworth, President of the Southern Idaho Timber Protective Association for data furnished in preparation of this article.

THE BENEFITS AND SERVICES RENDERED BY THE NATIONAL FORESTS OF THE STATE OF IDAHO

M. H. Wolff
Assistant Regional Forester, Lands, Region One, U. S. Forest Service

PRIMARILY Idaho's welfare is founded on its lands. Its small proportion of manufacturing activity is essentially involved in the conversion processes of the raw materials from its own forests and mines. The state's welfare depends primarily on the products of the fields, the ranges, the mines, and the forests. Land is the basis of all these—land and its utilization.

Of Idaho's gross area of 53,000,000 acres about 23,000,000 are forest lands. The federal government owns about 79 per cent of the timbered area, practically all within the national forests, the State of Idaho about 4 per cent, and the private owners the remaining 17 per cent. Just so much as the large forested proportion of the state area is a material influence on the social and economic development and welfare of the state, so correspondingly have the national forests, composing virtually three-fourths of the total area of forest lands, a very considerable place in serving local social and economic needs.

The helpful influences of the national forests in Idaho on the state's welfare are many and varied. They are the basis of direct financial returns to the local government units and to the people in the form of actual cash payments or equivalents to the counties and the State, and of a source of employment and a market for local trade as the result of the national forest work.

Indirect Benefits Varied

Very appreciable as are these direct financial returns, of far greater importance in the immediate and long-time economics and social welfare, locally, are results of the beneficially planned utilization of the national forest resources and their development and protection. These might be termed, for distinction from the direct financial contributions to the state, as indirect benefits. The national forests are a source of raw materials for the timber-using industries, logging and milling of lumber materials and the production of other timber items, such as poles, posts, and pulpwood. They insure a certain degree of stability in the production of these materials and provide a feasible way for continuing in timber production lands not now government owned, which otherwise threaten in large part to become waste and idle. The national forest ranges, under constructive management, provide forage for livestock producers and also furnish this pasturage in a manner which promotes the stabilization of the livestock business. The beneficial effect of the forests on erosion and floods and other injurious variations in waterflows is reflected in nothing but good for irrigation interests and water power users. The forests provide an enormous recreation ground for the inspiration, diversion, and play, first, of the local population, and secondly, for outside people and through that an additional source of business revenue.

Most immediate of the direct financial benefits to the state is the federal government's payment to the counties for road and school purposes of 25 per cent of the *gross* revenue obtained from the payments and fees coming from the use of the forests and their products. This virtually amounts to a 25 per cent nonassessable equity in these lands. The value of any land is in direct relation to the net rentals therefrom. Considering that the rental returns cannot be obtained without at least some expenditure, and that the payments to the counties are based on *gross*, not net receipts, the counties' interest might be considered as even materially in excess of 25 per cent. It is to be noted that these incomes are truly current rentals and not the removal of principal values, since a fundamental of national forest utilization is use without depreciation. This 25 per cent when applied to timber is really the equivalent of a 25 per cent yield tax; this far exceeds the most hopeful yield tax rate ever proposed in this or any other state.

Road and School Revenue Large

This 25 per cent contribution in Idaho for the six-year period preceding the fiscal year 1931, when the effects of the depression became evident, totaled $979,686, indicating a normal average at this stage of development of about $163,000 per year. This income is based on only a partial utilization of the national forest resources; with the more complete utilization fully to be anticipated in the future the returns to the counties can be expected to increase.

In addition to contributing this 25 per cent of its gross income to the counties, the federal government spends 10 per cent of its gross income in any state for road construction within that state. An appreciable part of this replaces an equivalent amount that would otherwise have to be expended for this purpose by the local governments. Hence, that amounts to an additional financial contribution. The 10 per cent road fund apportionment to Idaho has reached an aggregate of close to $1,000,000.

While the 10 per cent road construction has attained considerable proportions, it has been vastly exceeded by the direct appropriations made by the federal government for forest highways and forest development projects. These have been separate and apart from Post

Road or other Federal Aid projects. The amount of money allocated to the state from these appropriations has been dependent in considerable part on the acreage of federal forest lands in the state. At one time these contributions were figured at three cents per acre per annum based on government-owned lands in the state. In recent years they have been much greater. Up to July 1, 1932, the funds thus expended for direct road construction and road maintenance work by the Federal Government aggregated $9,500,000 for major public roads and $8,900,000 for forest development roads and trails. Since the major roads are of primary importance to communities in or near the national forests, their construction by the government replaces an equal cost of construction which would have had to be undertaken by the counties or the state, if not carried on by the government. The forest development projects in part provide development which otherwise would have had to be undertaken by local agencies.

Government Spends Other Money Here

The government's expenditures for administration protection and development of the forests aggregate a very appreciable total. Practically all of the payroll expenditures in the state are put into circulation locally. There are close to 200 year-long forest service employees living in the state, varying from the highly trained, long experienced forest supervisors with heavy responsibilities, to the newcomers among the rangers, all of whom in normal times receive salaries aggregating about $475,000 annually.

The recurrent seasonal employment of temporary men for prevention and control of fire and forest diseases, for the construction of forest development roads, trails, telephone lines, lookout houses, and other necessary structures, provides a tidy payroll. In the seven national forests in northern Idaho alone this is estimated conservatively to have averaged during late years upward of 2000 men for an average of about three months each year. These 6000 man-months represent around $500,000 in wages alone. This employment is in large part made up of local residents, and a very great proportion of their compensation is put into local channels of trade. The temporary occasional crews, specially recruited for suppression of large fires, have aggregated 2000 men yearly; while many of these have been obtained from outside the state, practically all available and suitable local men have been used first, and a very large proportion has been local, and a large part of their wages has been spent within the state. Large aggregates are spent on such things as subsistence, materials, equipment, transportation, rent, horse feed, and similar items necessary for carrying on this large field enterprise. The state's usual annual income from the government's national forest activities is indeed of considerable moment in the prosperity and welfare of the state.

Civilian Conservation Corps

This year a new enormous expenditure by the federal government is in the way of being made in the national forests of Idaho. The Civilian Conservation Corps, while it will largely be composed of men recruited from other states, will include a great number of Idaho citizens likewise and will liberate large amounts of money into the local channels of trade.

Altogether it can safely be said that the direct financial contributions of the federal government, as a result of its national forest enterprise in the eighteen forests in Idaho, far exceed what would have been the tax returns to the counties if the land now in national forests had been permitted to lie open to public entry (mining laws are still, of course, unrestrictedly applicable) and had been privately acquired. It is to be noted that after all but a small proportion of the national forest property would have been privately acquired and retained in private ownership as worth while for a private owner to hold, administer, protect, develop, and pay taxes on.

Of the indirect benefits of the national forests the government's timber production efforts have been and will prove permanently to yield the greatest return to the state and its people. This is by providing a source of timber conversion activities both present and potential. It is not in filling the needs of the state for lumber itself, although it is not at all amiss to have available near at hand at no great cost of transportation virtually an unlimited supply of timber for use by the mines, the farms, and other less prominent activities in the state, and although the government policy is to sell, at cost of making and administering the timber sales, all material needed by local settlers, and to give away all dead material free of charge.

Idaho's output of lumber alone has averaged between 800,000,000 and 850,000,000 feet annually. It has been estimated that each thousand board feet of timber logged and manufactured brings between $20 and $25 in labor, supplies, and equipment paid out in the local community. While most of the cut in the past has come from privately owned lands, the end of privately owned timber as a material quantity exploited annually is not very many years away. In northern Idaho, for instance, private timber holdings will at normal cutting rates be cut out generally in from eight to fifteen years, with only a few exceptions running a little longer. Very obviously the $22.50 for each thousand feet of timber cut that goes into local circulation will have to depend more and more on the government timber as time goes on.

Yield Capacity Determines Cut

The amount of national forest timber that may be cut in any year is controlled by the sustained yield capacity of the forest land. The yield at the present time, based on the present forest land acreage, is in the neighborhood of 550 to 600 million feet annually. This is much below the past average annual cut in the state. Furthermore, a large proportion of this yield is in species not now in great demand, or consists of the younger stands too small to fill market requirements, or is so inaccessible that for quite a number of decades it cannot be economically utilized. Consequently, there promises to be a material gap in the lumber industry's output for a period commencing about fifteen or twenty years from now until about fifty or sixty years from now, when the younger stands come into merchantability. What this means to local welfare needs no emphasis. The effect of cessation of lumbering activities in several of the counties and towns in northern Idaho is already well known.

However, looking ahead to the future the national forests are definitely a provision; first to ameliorate the trying conditions resulting from cutting out of timber; and second, to build up the raw material output to even greater yield possibilities than hitherto have been utilized.

The first is accomplished through limitation of cutting on national forest lands to their sustained yield. A movement is further on foot, using the government timber as a foundation and nucleus, to work out a scheme involving northern Idaho timber whereby the timber of other than government ownership will be thrown in with it and together be cut and managed on a sustained yield basis.

Second Growth Essential

The second growth is accomplished through the care and protection the government is giving to its young timber growth of no present commercial value as well as to the older merchantable stands. Such a policy is not fully pursued by any other forest landowner in the State of Idaho, not even the state itself on its own land. Its accomplishment is also furthered through the authority for acquiring cut-over or young growth areas, nonagricultural in character, heretofore privately owned and adding them to the existing national forest lands. The lands thus added, having been selected for their timber quality in the days of free public land acquisition before the institution of the national forests, are generally far better than average in timber production capacity. Hence, the future yield of the national forests will be increased far out of proportion to the increase in acreage.

Utilizing land unfit for agriculture, keeping land productive which otherwise would lie waste, and at no cost to the state, cannot otherwise than benefit the state. It is well known that vast acreages of privately owned land, cut-over, burned, or with unmarketable second growth, which have no value for agriculture or any other purpose than timber production, are going back to the counties through tax delinquencies. The counties, even though their officials realize full well their responsibility and the vital importance of custodial attention to these lands, are financially unable to undertake this burden. The state cannot do so. Somewhat limited authority is available for the government to take over these lands. This has afforded a means for keeping much of these "new public domain" lands productive and in the way to deliver their manifold benefits to the people of the state.

Investment Figures Large

In these ways the national forests are playing the part of bringing stability to the large lumbering and allied industries of the state upon which very many other gainful occupations depend in great part. In 1927 there were in Idaho 96 lumber and timber products establishments, over 10,000 salary and wage earners (average for the year); salaries and wages totaled over $14,000,000 and materials, fuel, etc., exceeded $10,000,000. The value of the manufactured product exceeded $30,000,000. The figures for 1929 were appreciably higher, but 1927 data are accepted as more conservative. The $22.50 per thousand feet that is estimated as going into local circulation, on 800,000,000 feet of annual cut comes to $18,000,000. The figures from one large lumber company indicate that on an investment of around $9,500,000, about $2,500,000 yearly has circulated in the local communities for the past two decades.

The lumber and allied industries comprise directly a material part of the taxable property of the state. From the 1931 report of the Idaho State Board of Equalization is indicated that this comes to between $45,000,000 and $50,000,000. Just how much more taxable values come from business, residence and similar properties, and even public utility values, and farm values stimulated by local markets resulting from the lumbering industry, it is impossible to determine, but unquestionably their aggregate is very great. The continuance of the tax return from these properties is inevitably bound up with the continuance of these industries.

Of vast importance indeed in the economic welfare of the state in the future is the assured stability of raw material production. This assurance of a stable output of forest crops is not or cannot be assured by any other agency than the federal government. Despite these enormous benefits, the obligation has not been undertaken by any of the county governments and is redeemed in only a secondary way by the state. While the justification of the federal government's raising tim-

(Continued on page 46)

RANGE MANAGEMENT ON INDIAN LANDS

J. P. KINNEY
Director of Forestry, U. S. Indian Service

THE total area of land within the United States in which the Indians own a beneficial interest exceeds 71,000,000 acres, and is approximately equal to one-half of the net area of Federally-owned lands included within National Forest boundaries. The relative proportion of Indian lands that may be classed as forest lands is much smaller than the relative proportion of timbered lands within the National Forests; the proportion of rough mountain land in the National Forests is greater than within Indian reservations; and the area of open grass land within the reservations is proportionally greater than within the National Forests. These disparities are chiefly due to the fact that Indian reservations comprise large areas in the Plains Region, east of the Rocky Mountains, and in the semi-arid portions of Arizona and New Mexico.

AREA OF INDIAN GRAZING LANDS

The forage on the grazing areas within Indian reservations west of the Rockies is comparable to that on National Forests; but the immense grassy plains of reservations within the Dakotas and Montana are quite different from any extensive areas within National Forests. The capacity of these short grass areas of the Plains Region to produce forage for stock is truly marvelous.

While there are Indian reservations under Federal jurisdiction in twenty states, the chief reservations containing grazing lands of importance lie within ten states: Arizona, Idaho, Montana, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. The combined area of the reservations in these states exceeds 45,000,000 acres and of this total nearly 40,000,000 acres are classifiable as grazing lands. These 40,000,000 acres include about 5,000,000 acres of forest land which affords range incidental to its primary purpose of forest production.

The reservations in these ten states may be properly assigned to three groups of rather distinct characteristics. These are the Northern Great Plains Region, lying east of the Rockies and north of the forty-first parallel of latitude; the Intermountain Region, lying north of the forty-first parallel and between the Rockies and the Cascades; and the Southwest Region comprising Arizona, New Mexico, Utah, and a small area in southwestern Colorado. The Plains Region contains over 12,000,000 acres of range lands, the Intermountain Region nearly 5,000,000 acres, and the Southwestern Region nearly 23,000,000 acres. In 1930 slightly more than 11,000,000 acres were under lease or permit for grazing purposes and a yearly cash income of nearly $900,000 was realized. It will be noted that the area not under lease or permit was nearly three times the area from which a cash revenue was being received. The total revenue derived from Indian livestock ranging on Indian lands in 1930 was nearly $2,340,000. Thus the total income to the Indians from livestock and grazing fees amounted to approximately $3,250,000. Obviously these range resources play an important part in the economic life of the Indians.

CONDITION OF GRAZING LANDS.

While it is unmistakably true that the grazing lands of the Navajos in Arizona and New Mexico are greatly overstocked at present, and while isolated instances of overgrazing occur on various reservations, the range lands on Indian reservations are not generally in a depleted condition. In fact, throughout the Indian country the faults of the past have been chiefly in the line of unregulated use and a failure to provide physical improvements rather than in a general overstocking of the ranges. Ranges heretofore overgrazed could be relieved through the development of water in areas that can not now be used to capacity because of a lack of wells or tanks. Large areas have been injured by the grazing of inferior horses who produce no income commensurate with the harm done to the range. Tens of thousands of acres are practically useless for stock purposes and hundreds of thousands of acres are greatly reduced in value because of their occupation by prairie dogs which could be and should be exterminated.

Funds have never been available for the development of water supplies and the prospects of future appropriations for such purposes are by no means encouraging. The Indians have been reluctant to dispose of their ponies at the prices that could be obtained for them; and not only have the funds available for rodent control been extremely limited, but the Indians, especially in the Navajo country, have not been sympathetic with plans for the extermination of animals that at times afford a partial food supply in a region that produces but a limited variety of human diet.

INVENTORY OF GRAZING LANDS

The first task undertaken by the Forestry Branch of the Indian Service after the administration of grazing on Indian lands was assigned to it on April 15, 1930 was to secure an inventory of the grazing resources of the Indians and of the stock utilizing the same. Incidental to the taking of this inventory a vast amount of information was accumulated as to the precipitation, the kinds of forage, past experience in stock raising, and other data for each particular reservation. This infor-

mation was incorporated in extensive reports of as uniform a character as the circumstances would permit. These special reports were supplemented by, and to some extent summarized in, a general report on the entire problem entitled "An Economic Survey of the Range Resources and Grazing Activities on Indian Reservations" prepared by Mr. Lee Muck, Assistant Director of Forestry in the Indian Service, assisted by Mr. P. E. Melis, Assistant Forester, and Mr. G. M. Nyce, Associate Range Supervisor. This report was published in Part 22 of Senate Hearings under Senate Resolution 79 of the Seventieth Congress. On June 4, 1931 the Department of the Interior approved the regulations, permit forms, etc., that had been devised in the light of the studies conducted during the year following April 15, 1930. The new regulations, stipulations as to use of range, permit forms, and so forth, went into effect on July 1, 1931.

An inventory of the grazing resources having been made, the main weaknesses of the former method of administration disclosed, and a plan outlined for future administration, attention was directed to special studies of particular ranges on the various reservations and to the accumulation in definite, recorded form of data that could be compared with other data gathered at subsequent periods so as to disclose unmistakably the trends toward improvement or depletion of the range on such particular areas. Obviously, studies of this character require great care and much time and it is not surprising that the accomplishments along this line during the first two years have been comparatively limited, when it is remembered that the current administration connected with the actual use of 40,000,000 acres has necessarily demanded a very large part of the time of the very restricted force available. For instance there are several reservations comprising more than 1,000,000 acres on which only one man is available for grazing work and while some guidance can be given by foresters and grazing specialists at large, it is clearly impossible with such a limited personnel to devote adequate time to studies of the most vital importance to the establishment of successful range management.

Administration Change at Wrong Time

Unfortunately the efforts to introduce new methods of grazing administration on Indian lands happened to coincide with a period of the most adverse conditions in the livestock industry that have been experienced in forty years, and possibly during the whole history of the industry in America. The summers of 1929 and 1930 were marked by extreme drought in different portions of the Northwest and Southwest, and so little precipitation occurred within extensive areas in Washington, Montana and the Dakotas in 1931 as to force the removal from their usual ranges of tens of thousands of head of stock in the late summer and autumn of that year. The general economic depression having its incidence late in 1929 had begun to be seriously felt in the livestock industry in 1930. The low prices of stock combined with the shortage of forage and even cultivated crops in the range states, placed the owners of livestock in a most precarious condition. Economic conditions became successively worse in 1931 and 1932 until the prices obtainable for steers, lambs and wool dropped to one-half or one-third of the realizations of 1928. The inability of the Navajos and other tribes in the Southwest to dispose of their lambs and older sheep, greatly accentuated an over-stocking of ranges that already threatened future income from their grazing lands. The disastrously low prices for livestock products prevented permittees on the Indian ranges from paying their grazing fees established on a basis of comparatively high markets for products. An urgent demand came from the stockmen that grazing rates be substantially reduced even on contracts already made for a term of years.

The Indian Service was not in a position to reduce grazing fees in existing contracts without the consent of the Indians and was unwilling to agree to reductions on future permits without the consent of the Indians. For a long time the Indians on many reservations opposed any reduction, but as they became convinced that the permittees were really unable to pay the former prices and came to realize that the ranges might lie idle if rates were not reduced, agreements on adjustments were reached and it affords us much satisfaction to state that generally the Indians showed a very commendable spirit in meeting the users of the range half way in a reduction of grazing fees.

Problems of Administration

The Indian Service is confronted by a peculiarly difficult problem in the administration of grazing lands as well as timber lands. In 1887 legislation was passed by the federal Congress that was directed to the individualization of the Indian problem. The theory back of this legislation was that if each Indian were given an allotment of land in severalty the tribal status and customs would in a comparatively short time be broken up and the individual Indians with their distinct land holdings would assume much the same position as homesteaders on the public lands. Under this general allotment act and special acts of a similar character the greater part of the grazing land on reservations in North and South Dakota, Idaho, Montana, and to a lesser degree in other states, has been allotted in areas varying from 160 acres to 320 acres, or even a larger amount in one or two instances.

(Continued on page 48)

BIG GAME MANAGEMENT

ORANGE A. OLSEN

Inspector of Grazing, U. S. Forest Service, Region 4

GAME management and game conservation are synonymous, meaning one and the same thing; that is, both involve propagation, protection, and a wise utilization of the surplus. Game managers endeavor to get away from guess work and to build on facts and make common sense application of scientific knowledge.

The game manager, when confronted with a problem of management, soon finds that it is extremely ramifying and frequently complex. He does not only have to deal with the habits and needs of the particular game animal involved, but also has to consider its relation to man. Civilization has pushed out into the most remote sections of our game country and a correlation of land use by man and game must be worked out. Use by man means his utilization of land resources—forage, timber, watershed, agriculture, and recreation. Definite information concerning the animal to be conserved is important; its life history should be well understood; also, at least, its approximate numbers, rate of increase and losses should be known. Information is needed on diseases and the effects of parasites internally and externally. What game animals eat and the amount are also valuable data is correlating range use by them with that of livestock.

It is evident that those charged with the responsibility of managing game resources should have broad training, both technical and practical, in many of the sciences. The better they are versed in biology, ecology, forestry, range management, livestock, agriculture, economics, and so forth, the better qualified they will be to handle game problems. Training and experience are essential to see the broad picture of how game conservation should fit in with our whole economic structure. Correlating land use by game with that of forage supply, livestock, recreation, private lands, and the public is a big undertaking.

EARLY CONSERVATION

The value of wild life and the need for its proper conservation are being realized and appreciated more and more as the years pass. Never before has the interest been greater and this interest is growing. More thought, time and money are being devoted to the propagation, protection, and utilization of wild life than ever before.

The early trappers, explorers, and settlers who came West found an abundance of game on lands wherever conditions were favorable. The buffalo and antelope numbered thousands on the plains; deer and elk were abundant in the foothills, valleys, and some mountainous regions; mountain sheep, goats and moose occupied ranges in reasonable numbers where the environment was to their liking.

That which is plentiful is seldom appreciated. Game exploitation resulted. In a few short years the buffalo became strangers to the plains and the antelope were seldom seen. Deer and elk in reduced numbers were crowded into the back country. Not much is recorded about the mountain sheep, goat and moose, but undoubtedly civilization adversely affected their numbers.

The numbers of game animals decreased rapidly and in many instances disappeared entirely. To save them from extinction, State Fish and Game Departments were created; laws were enacted to restrict the kill. Game preserves were established and serious effort was made to save the remnants. Public sentiment was generally favorable to big game. Elk plantings were made to restock depleted areas. Control of predatory animals was undertaken by the States, Federal Government, stockmen, and sportsmen. In many places throughout the intermountain region several species of our big game in response to this protection, have made a very pleasing "come back," especially during the past ten years. On the National Forests of the West, elk, deer, and antelope have shown excellent recovery. Mountain sheep and goats seem to be gradually decreasing, while moose are making normal increases in some sections.

GAME MANAGEMENT ESSENTIAL

This protection, admirable as it has been and is, has in some few instances not worked to the best advantage, even to the game themselves. In a few places, big game, especially deer, elk, and to a lesser extent antelope, have increased to such density that they have either of themselves or in conjunction with livestock, so depleted their ranges that heavy losses in game have resulted, particularly on winter ranges which are usually limited in area and grazing capacity. On some units game have become so abundant that stockmen complain against the numbers of deer and elk and maintain they are being crowded out. Game frequently trespass in excessive numbers on private lands, consuming forage to which the land owner is entitled. Occasionally game animals do considerable damage to farm crops, orchards, and gardens.

Evidently such conditions are not to the best interests of game. It is poor management that permits game to increase beyond its food supply causing losses from starvation and inviting parasites and disease. Those who have seen dead elk and deer scattered over depleted ranges, due to starvation, are indelibly impressed that too much protection can reach a stage where it is worse than not enough. It is difficult to reëstablish game on a depleted range. Management based on the year-long

grazing capacity of the available range, plus supplemental feed if provided, should be practiced. It is inhuman to raise game in the summer and let it suffer the agonies of starvation in winter. Where there is conflict between game and livestock on National Forest lands, a balance between the interests of both should be worked out. Game and livestock are both valuable resources and one must not unnecessarily crowd out the other. The problem of game on private lands is difficult to solve. Fortunately most land owners are friendly toward game and gladly tolerate game in reasonable numbers and complain only when it becomes burdensome. Lands which are the "key" to a particular game problem should be publicly owned and administered primarily for the benefit of game. This applies chiefly to game winter ranges; summer ranges are usually adequate.

Changes Needed in Game Laws

The conditions surrounding each game herd vary, with no two herds having the same problems to meet. This brings out the need for flexibility in game laws to permit the handling of any game herd as a unit, separate and apart from other herds, in accordance with its particular conditions and needs. Big game conservation has a wider field than mere law enforcement and most of the states have now enacted laws giving to some one, either the Fish and Game Commissioner, a Game Commission, or a Board, authority to regulate hunting seasons, limit the kill as to numbers and sex for the purpose of controlling numbers where necessary to prevent range depletion and damage to private property and to use wisely any surplus of game that may exist.

The first duty of every game administrator is to produce the maximum amount of game consistent with the forage supply and economic needs of the people. The ideal would be to remove only the surplus game animals. A surplus may be considered as existing when numbers exceed the year-long forage supply (natural or artificial), when control is necessary to safeguard against undue damage to private property, when the density of game is out of balance with numbers of livestock, and when there is a greater ratio of males to females than is necessary to maintain a proper breeding herd.

The application of management principles will provide for producing and maintaining the greatest number of game animals possible on any given area and will also give the sportsmen maximum hunting privileges consistent with the welfare of the individual game herds. On some areas less hunting would be necessary, while on others it would be increased. Ultimately with wise management, the optimum of numbers would be reached and under a system of regulated hunting the perpetuation of game would be assured and the needs of the sportsmen, recreationists, and big game lovers would be provided for to the highest degree possible.

THE NEW PUBLIC DOMAIN

MUCH has been said in recent years about the public domain remnant of the original public land wealth of the United States, comprising the culled over leavings after the more desirable lands had been privately acquired. Its final disposition is a problem of great magnitude. But there is a new and somewhat similar problem that is of growing importance. Forest land from which the original timber crop has been removed is gradually going through the stages of tax delinquency until, as county land, it becomes a new public domain—a new "no man's land"—since the counties are doing no more with it than has the government undertaken hitherto with the old public domain. There are some distinct differences. The old public domain is constant in size or, if anything, slowly diminishing. The new public domain is growing very rapidly. The old public domain is the the poorer land; the new public domain was originally the best of the timber producing lands.

M. H. Wolff.

THE PLACE OF CHEMICAL RESEARCH IN FORESTRY

E. C. JAHN

Associate Professor of Forestry

THE proper utilization of the products of the forest is just as important a part of the science of forestry as is the growing of timber. Forest utilization has concerned itself primarily with lumber and timbers which, both in quantity, as represented by board feet of wood consumed, and in value, are our most important forest products. These products possess in general the properties of the original wood in the tree and, because of these properties, such as strength, lightness, elasticity, and workability, they are particularly useful for structural purposes.

There are, however, many very important and valuable forest products which no longer resemble the wood from which they were obtained. The wood is the raw material for these products which are manufactured principally by chemical processes. Wood as a raw material is becoming increasingly important as a basis for chemical and technological processes which furnish man with many useful articles.

First let us briefly consider the raw material—wood. Wood is organic tissue produced by biochemical and physiological processes and is, therefore, a complex substance. A knowledge of the chemistry of wood is fundamental to its utilization by any of the chemical processes. Of the mechanism of the growth and synthesis of the various components of wood we know practically nothing. Our knowledge of wood is only of the product as has been elaborated by the plant, and yet this static complex structure is still the subject of intensive investigation.

WOOD OFFERS MUCH STUDY

Neither botanically nor chemically is wood a homogeneous substance. Botanically it is made up of a variety of cells, most of which are spindle-shaped fibers about 1 mm. long in hardwoods and 1.5 to 9 mm. long in conifers or softwoods. Communication exists between most of the cells in wood by means of pits in their walls. The cells are all cemented to one another by a common medial layer known as the middle lamella. This cementing layer or matrix is made up of a complex material not clearly defined, and known as lignin. The cell walls are composed mostly of a strong tough substance, cellulose, together with hemicelluloses and some lignin. The cell wall encloses a lumen or central cavity which contains extraneous material, since these cavities function in the storage of food, the transportation of food and water, and in other life processes.

The Wood Conversion Laboratory is a Valuable Addition to the Idaho School of Forestry.

The scope of this paper does not permit discussion of the chemistry of these major components of wood. Although the chemistry of wood still offers many baffling problems, the gradual unfolding of these mysteries adds to human knowledge and in turn to the increased usefulness of wood to man.

There are several important chemical industries which depend upon the forest for their raw material and yet do not utilize wood. For

example, in the production of naval stores (turpentine, pine oil, rosin), maple syrup, rubber, tung oil, and many other products the woody structure of the tree is not utilized, but materials which are naturally produced by the tree and only require collection are used. Only those industries which utilize the woody structure will be considered here.

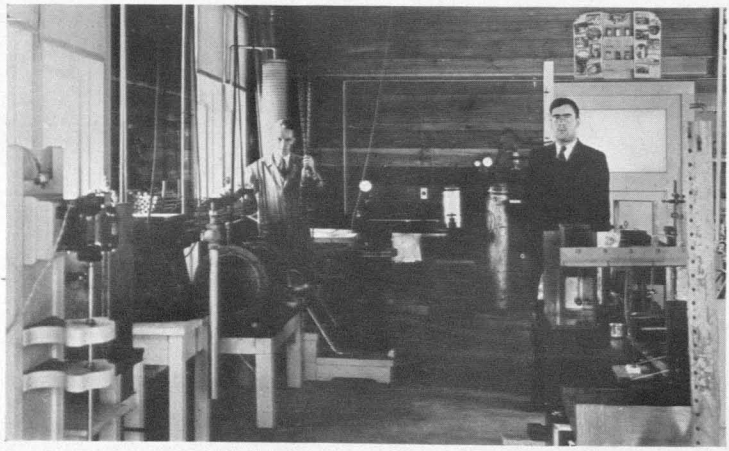
Charcoal Industry Centuries Old

Although most chemical industries depending upon wood as raw material are of recent development, there are some which originated several centuries or more ago. The most notable example is the destructive distillation of wood. However, the modern wood distillation industry is a far cry from the charcoal making of five centuries ago. The old collier obtained only charcoal from wood and thereby unwittingly burned and wasted the most valuable products. At present, thanks to research, chemicals which were formerly lost in gases and smoke are now the most important products of wood distillation. The more important chemical products are acetic acid, wood alcohol, acetone and tar oils which find wide industrial uses as solvents, for the manufacture of one form of rayon, in preparing formaldehyde, synthetic resins, various drugs, dyes, perfumes, and other valuable products.

The wood distillation industry is constantly undergoing radical development and improvement in economy of manufacture, in yield of products, in the refinement of products and the recovery of by-products. In the more recent plants sawdust and chipped waste wood may be fed continuously to the distillation retorts, effecting both economy and improved production. The refinement of the products is carried out in complex modern chemical engineering equipment. It is believed that with these improvements the industry will be able to compete successfully with the synthetic production of acetic acid, acetone and wood alcohol.

The pulp and paper industry is the greatest of the chemical forest industries and is the seventh ranking industry in the United States. Paper was invented by the Chinese in 105 A. D. and was made by hand from that time until after the middle of the past century. With the advent of the chemical processes for producing pulp from wood, the paper industry passed, in a relatively short time, from making a few hundred hand sheets per day to mills producing 400 tons of paper for the same period of time.

Paper is a thin sheet of plant fibers made by separating the individual fibers in the plant and then felting them together again in a uniform sheet. Since wood is composed mainly of fiber-shaped cells it is an excellent raw material for paper. But in order to separate these cellulose fibers the cementing substance, lignin, must be removed. The gradual accumulation of research on wood during the nineteenth century led to the discovery of the present-day pulping process in which the lignin is dissolved from the wood, thereby freeing the fibers.



The Wood Conversion Laboratory Contains Considerable Modern Equipment and Machinery for Instructional Purposes.

Wood a Raw Material for Textiles

As in other modern industries, research is constantly bringing about improvements. The actual pulping processes are still but imperfectly known and are the center of very intensive research. The number of forest species which may be used for pulp is gradually being enlarged. Also improved pulping processes and the development of pulp refining methods is broadening the market for pulp. Highly purified wood pulp is competing to a greater extent with cotton as a raw material for rayon and other cellulose products.

A new industry which is related to the pulp and paper industry is the manufacture of fiber

(Continued on page 49)

PLANNING A FOREST FOR THE UNIVERSITY OF IDAHO

E. A. SHERMAN
United States Forest Service

WHEN Dean F. G. Miller, of the School of Forestry of the University of Idaho, turns from his desk and looks out of his office window, his eyes rest on the timbered south slopes of a range of hills known as the Moscow Mountains. These constitute a short secondary range running east and west almost at a right angle to and fairly well detached from the main mountain mass occupying the central and northern parts of the State. The most striking feature of the range, Moscow Mountain proper, is only 12 miles in an air line from the dean's office. The area is unusually productive, with a fertility carried to it in wind-borne soils from the famous Palouse region. The total area comprises 65,753.62 acres and is divided naturally into two rather distinct units, the Moscow Mountain unit, containing 35,410.79 acres, and the Potato Hill unit of 30,342.83 acres. All the principal commercial forest types are well represented, with acreages as follows: white pine, 14,080; ponderosa pine, 20,000; larch-fir, 28,710; Douglas fir, 1,390; cedar—white fir, 700. It would be hard, the dean believes, to find a more nearly ideal set-up for a university forest.

To obtain this area for the Idaho School of Forestry as a field laboratory to be studied, protected, developed, and managed by his students has long been the dream of Dean Miller. Two steps toward the accomplishment of that ambition have recently been taken. In 1932 the Forest Development Company donated to the University about three thousand, six hundred and fifty acres of forest land on Moscow Mountain. This area is already in use by the forest school and forms a nucleus for the projected forest. The second step was taken on January 13, 1933, when Representative Burton L. French, of Idaho, introduced in Congress a bill which, if enacted into law, will enable the State to acquire for its university the entire forest area in question.

The plan which passage of the bill will further is based upon the fact that the State of Idaho owns large acreages of land within the boundaries of the national forests in the State. The bill authorizes the Federal Government to acquire privately owned lands within certain described sections in the Moscow Mountains region and extending northeastward of that region to the Palouse division of the St. Joe National Forest and southward to Potato Hill (a landmark of some local prominence). Boundary lines are to be so drawn as to exclude farm lands and settlements and all land having substantial agricultural potentialities. The Federal Government would acquire these lands with the ultimate object of exchanging them for an equal value of the lands owned by the State within the boundaries of national forests.

It may take many years to round out the entire project, as a great many small ownerships are involved. Meanwhile, the State and the Federal Government already own a part of the land. In addition to the tract donated to the University, the State owns 8,029 acres within the boundary limits of the two units, and the Federal Government before long will come into ownership of about 9,000 acres, 200 from the public domain and the balance from pending donations, making combined State and Federal holdings of approximately 20,000 acres.

The terms of the final exchange transaction between the State and the Forest Service will be worked out after the Federal Government has completed the work of consolidation and the State authorities have been empowered to make such an exchange.—*Forest Worker*, March, 1933.

Income From Recreational Sources

New England's annual income from recreational sources amounts to $500,000,000 and, if this is considered as a 6 per cent return on a capital investment, it would place the current economic value of New England's recreational assets at about 8⅓ billion dollars. The value of the recreational property in New England is placed at $550,000,000 and taxes amounting to $15,000,000 are paid on this property. The recreation dollar is spent as follows: Transportation, 20 cents; accommodations, 20 cents; retail stores, 25 cents; food, 21 cents; amusements, 8 cents; confections, 6 cents.—*Journal of Forestry*, March, 1933.

Wood Stood

Philip Lord, '33, completed his academic work the first semester this year and returned to his home in South Pasadena, California, just in time for the earthquake. He writes as follows:

"Practically all the serious damage occurred to brick buildings. I have been over a large part of the damaged area and in no case did I see any major damage to an all-wood structure. Some of the wooden buildings were moved several feet from their foundations by the shock yet they did not fall. The lumber companies are advertising with the phrase, 'Wood Stood.' Lumber will have no trouble holding its own as a building material in this section of the country."

GIFT OF EXPERIMENTAL FOREST

F. G. Miller
Dean, School of Forestry, University of Idaho

BY OUTRIGHT gift the University of Idaho has come into possession of a choice experimental forest for its School of Forestry. The gift was made by the Forest Development Company, a Weyerhaeuser subsidiary at Lewiston, Idaho. It consists of 3,646 acres of forest land, and it was accepted by the State Board of Education October 11, 1932.

In conveying this gift to the University of Idaho Mr. C. L. Billings, President of the Forest Development Company, stated it to be the thought of the company that the area shall be used as "an experimental forest as long as there is a School of Forestry at the University." Mr. Billings has also furnished the School a full and complete report, with maps, descriptive of the forest cover on these lands, which will serve the School as a basis in formulating its plan of management for the area.

Location and Accessibility

These lands are suitably and conveniently located for an experimental forest. They are all within the Moscow Mountain Range, 3,046 acres lying on the north slope and 600 acres on the south slope. Their average distance from Moscow is about 18 miles northeast. The lands on the north slope may be reached direct over a graveled and dirt road known as the "Old Princeton Road," or by way of Potlatch over a graveled highway to Potlatch, thence over a dirt road the rest of the way. The 600 acres on the south slope are accessible over a dirt and graveled road by way of Troy. It probably will not be many years until the main body of the area, that on the north slope of the mountains, will be accessible all the way over a surfaced road.

Topography and Soil

The land is all either rolling or mountainous in character, but any of it can be readily logged. It is practically all good timber producing soil. The forest on the south slope is drained by a beautiful mountain stream which traverses its full length. That on the north slope of the mountains is fairly well watered by streams, the principal one being Hatter Creek.

Forest Cover

The principal species found on the area are ponderosa pine, western white pine, tamarack, Douglas fir, white fir, western red cedar, and lodgepole pine. These species grow largely in mixed stands. All age classes of all species of timber common to the northern part of Idaho are found within this forest. Practically all of the merchantable timber has been removed, but the timber was cut in such a way as to leave intact on most of the area the trees below merchantable size.

The report of the Forest Development Company shows that 2,180 acres or nearly 60 per cent of the area is now covered with from 14 to 53 trees per acre of pole size, that is to say, trees 8 inches or over in diameter breast high. There are, of course, some younger trees below this size, which were not counted when the cruise was made. This means that there is left standing a sufficient number of trees to restock the area by natural regeneration. In fact some reproduction has already started.

About 500 acres or 14 per cent of the area bears young trees of the sapling stage—trees from 3 to 6 inches in diameter breast high, while 180 acres or 5 per cent is partially stocked with seedlings varying in size from 6 inches in height to 2 inches in diameter breast high. Nearly 14 per cent has been burned over and 7 per cent is classed as open land. Very probably the 79 per cent of the area now bearing poles, saplings, or seedlings will restock itself. The other 21 per cent may have to be planted, though it is possible that some of this will eventually reproduce by natural means.

Acquisition of Adjacent Lands

The gift of this fine forest property came at an opportune time as it is opening the way to the acquisition of a larger School Forest as described by Dr. E. A. Sherman in an article under the caption: "Planning a Forest for the University of Idaho," on page 17.

Besides serving as a field laboratory for the training of students in forestry and experimentation in methods of silvicultural management, this enlarged School Forest would be highly useful as a game preserve and for recreational uses, not to mention its potential value for the production of timber. It may be added that the School is already realizing some revenue from the gift area from the sale of cordwood and grazing privileges. Due acknowledgment is here made to the Forest Development Company for this timely and important donation. It will be known as the Moscow Mountain Experimental Forest.

RESPITE

Stanley Foss Bartlett

Let me turn away for a moment
From the ways that are blazed to goals,
Let me wander gypsy-minded
While I rest from my worldly rôles.

Let me go where there is no commerce,
Thought-free from my friend and foe,
For I've peace to make with my soul and God
And I've dreams of my own to know.

BRANDED A "BILER"

STANLEY FOSS BARTLETT*

THERE are some trades and businesses that a man can bluff about, but cooking in a logging camp is not among these gilt-edged careers. In preparing meals on a large scale for a big crew of hard working, hungry woodsmen, alibis and hot air should be omitted from the menu; for results of the simple old square sort are what the boys expect when a hundred of them face the festal board thrice daily. And once a cook fails to produce nourishment fit for "King Spruce" he is branded forever, a "biler" (boiler), the cussedest culinary term known north of the "bright lights."

For the reason foregoing, some of the keenest rivalry in the world exists among woods cooks. From the plentiful, but plain, raw materials which are furnished them, ambitious cooks have succeeded in producing about everything from ice cream to Hungarian goulash; and if one doesn't mind "taking it off tin" a mighty good meal is to be had in the cook-room of a Maine woods camp.

I know one cook who is famous for his pink-frosted cakes, (the extract of this delicate hue he squeezes from ordinary beets); another one carries in his "war-bag," as a part of his regular equipment, several fancy shaped cookie cutters, and a plate of his cookies would fittingly and properly grace a five-year-old's party table. Then there are tricks of the trade which are guarded secrets such as: a grated raw potato can be successfully used in place of an egg in mixing up doughnuts.

So rivalry runs high in the big woods kitchen, and it reached the high-water mark a few years ago when a lemon pie craze swept over the camp cuisine of the northland. Where or how this epidemic started is an unknown and unimportant fact. But reports of luscious lemon pies here and there spread from camp to camp and for a time a cook was rated by the lemon pie he could make.

At one camp, where the crew was building a big dam on a Penobscot tributary, the cook-room was governed by an old-time cook of irreproachable reputation. Heretofore, lemon pies had not been on his bill of fare, but, not to be outdone, he ordered a pail of lemon-pie filling.

In due time a full wooden pie-filling bucket was deposited in the "dingle" (pantry). The cookee removed the cover and the famous cook proceeded to construct a batch of such pies as had never been tasted this side of the Ritz. He was late with his work and the pies were hot out of the oven when the cookee yodelled the dinner call. The crew of half-famished men pushed into the cook-room and fell hastily upon the well-prepared bread and meat. Meanwhile the cookee placed the hot pies on the long tables at regular intervals within easy reach of all. For the chief of chefs had at last tried his hand at the popular pastry and the men would be anxious to brag about the lemon pie THEIR cook had made.

Several of the crew, having partaken their fill of the plain food, reached for the lemon pie, took large wedges of it into their plates and lost no time in conveying generous cuts to their mouth. Woodsmen being undemonstrative fellows of impassive expression, no hint as to the reception of the pies caught the cook's beaming paternal eye until "Jim" Malone, the boss, who had appropriated a half of one pie for himself, closed his teeth on the first mouthful. He started to swallow but choked and coughed; his eyes rolled and a series of light effects and grotesque grimaces passed over his leathery face.

Then, emitting thick curses of the seven black ganders of China on some one, he turned a mean eye toward the cook—the cook had gone white and the men at the tables were silent. At last the boss's tight lips opened slowly—he spoke—"Biler, what is them pies made of?" The cook, for lack of a better move, produced the nearly empty pie-filling pail and as he held it his eye noted a blue-penciled inscription, made by the storehouse clerk on the cover, and he read aloud:

"This pail contains petroleum grease for use on the dam-gate runways." The whiteness of his face turned to a gray pallor—the crew muttered fiercely in chorus—the boss was first to recover and again he spoke loudly and certainly, "Feedin' vaseline pies to a man—and built of the gate-grease I been looking for all the mornin'!"

Somebody cussed and someone laughed and the cook, who had been struck motionless said, anxiously in a trembling voice, "Do you reckon it'll kill any of yus?" The boss replied for the body, "Biler, we don't know that yet, but vaseline pie is a durned poor diet for a married man with three children and no insurance—but nobody here's any nearer death this minute than you be and if I wuz you I'd evacuate mighty sudden."

The crew arose and sauntered toward the men's camp with mixed emotions as the once-famous cook, now branded for life, packed his "Kennebunker" and left for parts unknown.

*Editor's Note: Mr. Bartlett attended the School of Forestry Ranger Course in 1921-22 and now is Assistant Editor of the Lewiston (Maine) *Sun-Journal*, writing feature forestry articles. He has been an active contributor to The IDAHO FORESTER and the editorial staff is grateful for his assistance.

A SKIN GAME

In looking over a silver fox farm an inquisitive lady asked "How many times can a fox be skinned for its fur?"

EXTENSION FORESTRY IN IDAHO

STANLEY C. CLARKE
Extension Forester

THE word, "extension," may be defined as extending information and instruction beyond the walls of a college. Certain agricultural colleges were doing some forestry extension work as early as 1912. Between 1912 and 1925, when the Clarke-McNary law became effective, 14 states developed definite farm forestry projects. At the present time, 33 states, and Porto Rico and Hawaii have extension foresters. The potentialities of this organization are quite apparent when one realizes that more than 3,000 county agents become the messengers of the extension foresters to hundreds of thousands of farmers within their counties. Furthermore, practically all of the co-operating states have also taken advantage of the provision in the Clarke-McNary law to operate co-operative tree nurseries and to produce forest seedlings and transplants at a low cost to the farmers within their respective boundaries. Delaware, Florida, Oklahoma, Kentucky, Missouri, Kansas, Colorado, Washington, and Oregon do not employ extension foresters, but they do co-operate with the federal government in growing farm forest planting stock for farmlands. In 1928, the distribution of forest planting stock for farmlands by co-operating states amounted to 28,757,000 seedlings and transplants. The states of New York and Pennsylvania distributed more than 18,000,000 of this total. West of the Rocky Mountains, Idaho held first place in distribution of 183,000 trees, of which 150,000 were black locust.

THE BEGINNING OF EXTENSION FORESTRY IN IDAHO

Mr. Arthur M. Sowder, now Assistant Professor of Forestry at the University of Idaho, was appointed Extension Forester for Idaho on April 16, 1927. Extension forestry was continued for the first two years on a half-time basis in conjunction with farm forestry experimental research work under a co-operative arrangement between the Idaho Agricultural Experiment Station and the School of Forestry. This latter phase of the program of work was necessary so that more fundamental data might be had to further the extension program in the state. Every Idahoan knows that his state has a great variation in soil and climate. It probably is not common knowledge that some Idaho farmers retain the idea that all trees planted in close proximity to their crops are detrimental to crop yield. One of the major problems of research was a study to determine the influence of windbreaks on the growth and yield of farm and orchard crops. Two other studies, which have also been of value to the extension forester, were determinations of the adaptability of certain species to alkali soils, and high-altitude plantings.

The early extension work consisted in making contacts with the county agents and of selling the idea of farm forestry to these important key-men who in turn were to interest the farmers in this phase of agriculture. The adaptability of species to different counties and communities was also noted by the condition of trees already planted. For many years prior to the passing of the Clarke-McNary law, Idaho had a state nursery in operation at Moscow, and was supplying seedlings and transplants to farmers for windbreak and woodlot purposes, so it was possible at this later date to gather considerable data.

A program of education was started through the use of newspaper articles, the "Idaho Agricultural News Letter," the "Idaho Farm Forestry News Letter," through talks and discussions at farm meetings, and occasional radio programs.

LATER EXTENSION WORK

After the extension forester has convinced each county agricultural agent that forestry can contribute materially to the agricultural prosperity of his county and after the county agent becomes a supporter of the work, the extension forester can feel assured that forestry will find a place on the agricultural program of the county. When this point is reached, the county agent begins calling for help, instead of the forester having to plead for a hearing. This takes time, but it is the beginning of progress. After this condition has been brought about, it is possible to work up the different projects, such as woodland improvement and management, the preservation of fence posts and other farm timber, the planting of windbreaks and shelterbelts, the planting of woodlots on areas unsuited for annual crop production, the control of erosion and fixation of sand dunes and further educational work through the 4-H Club program.

FARM FORESTRY TREE PLANTING

Through the practice of farm forestry, the marginal areas of the farm may often be brought into use to supply the wood needs, such as posts, poles, fuel, and general repair material. Southern Idaho, being naturally an unforested area, gives one the impression that trees may not do well there, but farmers are becoming more familiar with the better tree species, and are also becoming aware of the fact that trees will grow with the same amount of soil moisture that other agricultural crops require. In our irrigated sections, where the altitude is below 4,000 feet, black locusts have

been and are still being planted in large quantities because of their rapid growth to fence-post size in 6 to 10 years' time.

Windbreak, shelterbelt and woodlot plantings are being made at the rate of 250 to 300 plantings per year. All plantings, where the trees are obtained from the state nursery, are termed co-operative plantings. Advice in the preparation of the site, selection of species, method of planting, cultivation and protection as well as the actual inspection of the proposed planting site and assistance in planting, if desired, is given to the farmers of the state without charge. The extension forester does not act as a salesman for the state nursery, but it is to the interest of the state and farmers that the farmers receive the information that Idaho, in co-operation with the federal government, produces seedlings at a minimum cost for farm forestry plantings. Special demonstration plantings have been established adjacent to certain main highways to attract attention to the possibilities of growing trees on the farms.

The practice of farm forestry may be beneficial to the farmers of Idaho in some of the following ways:

1. Protection to man, farmstead and stock from the elements.
2. Protection to other crops from summer drought and excessive evaporation.
3. Provision of fuelwood, fence posts, poles, props, lumber and other forest products.
4. Furnish winter employment to the farm help.
5. Increasing the net income by utilization of areas unsuitable for field crops.
6. Add to the sale and aesthetic value of the farm.

Co-operation with the farmer does not cease with the purchase and planting of trees. These co-operative projects are tabulated and inspected from time to time.

Livestock Seek the Protection the Woodlot Affords.

Woodland Improvement

The word "woodland" is used here to signify a larger wooded tract than the word "woodlot" implies.

Idaho has about 800,000 acres of woodland, mostly in the northern part of the state, which are practically all owned by farmers. In many areas, these woodlands are gradually being "clear-cut" to be replaced by other agricultural crops. Most of the farms in northern Idaho are the result of land clearing, and on any farm the poorest soils are the last to be cut over. Hence, today, it is thought that there is a distinct need to demonstrate how these remaining timbered stands might become more productive to the farmer through a proper system of management.

The United States census report for 1929 gives 5,806 farms in Idaho reporting a total value of $938,979.00 for farm forest products disposed of. More than 50,000 cords annually are being cut in northern Idaho for the paper-pulp industries alone. Other products are fuelwood, ties, poles and piling, fence posts, some lumber and veneer material.

Farmers in the vicinity of Troy, who lost their woodlots by fire last year, admit that they will miss the cash income from these areas that required so little care.

With the idea of aiding the woodland owners in making their woodlands more productive and at the same time less subject to fire danger, five woodland improvement projects in northern Idaho have been carried to completion. They are located along main traveled farm highways in order to command the greatest amount of attention from farm traffic. The woodland improvement area is divided into two plots, each of a size varying from one-half to about one acre. One plot was left in its natural condition as a contrast, and the other is kept properly thinned and pruned.

(Continued on page 51)

VICE PRESIDENT PLANTS SPRUCE ON CAMPUS

HONORABLE CHARLES C. CURTIS, as vice president of the United States, added to the University's circle of trees planted by distinguished citizens when, on Wednesday, October 12, 1932, he planted an Engelmann spruce on the campus. The planting site is conspicuously located directly in front of the Administration Building, and the Engelmann spruce, a species native to Idaho, is a valuable addition to the landscape of the campus. Vice President Curtis was visiting northern Idaho on his trip through western United States and was able to adjust his schedule to visit the University of Idaho. During the tree planting ceremonies he was accompanied by Mr. E. T. Whitla of Coeur d'Alene, Idaho.

Other trees officially established by citizens of note are the "Roosevelt Tree," a Colorado Blue Spruce, planted by Theodore Roosevelt April 10, 1911; the "Taft Tree," a Port Orford Cedar, commemorating the visit October 4, 1911 of William Howard Taft to the campus; and the "Marshall Tree," a red oak, planted November 17, 1917, by the then Vice President of the United States, Thomas R. Marshall. Two additional trees enjoying the environment of the foregoing mentioned trees are a George Washington Memorial Elm planted by the University of Idaho Faculty Women's Club on November 17, 1931, and a concolor fir, also planted as a George Washington Memorial by Paradise Lodge No. 17, A. F. & A. M., Moscow, Idaho, on April 10, 1931.

Honorable Charles C. Curtis

LEARN FROM THE TREES

When you stop to think about trees, all that they withstand, all the beauty that they shed, all the good that they do and comfort that they give—do you wonder that people love them?

If human beings possessed many of the characteristics of a tree, what wonderful folks they would be. The tree pushes its root deep and firm in the soil. How many folks need to do the same, need to have their convictions, their opinions deeply imbedded in firm and solid ground? The tree grows pointing ever upwards. How many folks keep their aims, their ideals always pointing upward?

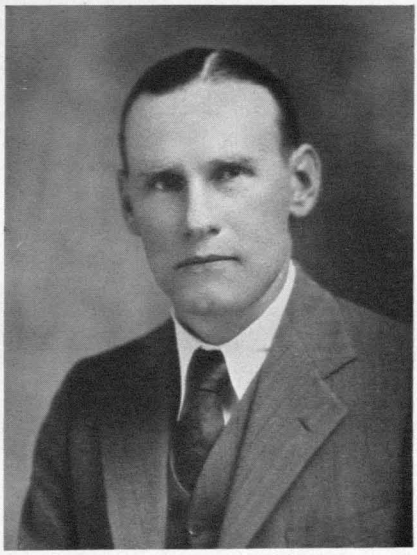
As the tree grows it spreads, throwing out its branches which give shade and comfort to the weary traveler who rests beneath it. As your advantages increase, as your opportunities grow and your possessions multiply, how much help, shade, and comfort do you give to the weary and disheartened soul who looks to you?

Standing firm and erect, the tree withstands both the scorching heat of summer and the chilling blasts of winter. How many folks are spoiled by glory, the heat of success, or crushed completely by the chill and frost of disaster? Don't only love trees but learn from them. They are among the greatest of Nature's many teachers.

NEW STATE FORESTER

Arthur W. Middleton of Weiser was recently appointed to the position of State Forester for Idaho, succeeding Ben E. Bush who had held the office since its creation eight years ago. Mr. Middleton is a graduate of the College of Agriculture, University of Idaho, class of 1932. Before entering the university in February, 1929, he had attended the Oregon School of Forestry for one year. He is a member of Alpha Zeta, honorary agricultural fraternity.

Mr. Middleton is well acquainted with the forestry needs of Idaho and the relation of the forests to the agricultural and grazing industries of the State. He has had a wide range of practical experience in the United States Forest Service where he is highly regarded. For the time being, at least, he will keep his office at Moscow.



Arthur W. Middleton

Tractor Course Proves Popular

The course in tractor operation instituted the spring of 1932 at the Idaho School of Forestry has been continued the current year but with a new "35" Caterpillar Tractor furnished through the courtesy of the Simmons Tractor and Equipment Company, Pullman, Washington and the Caterpillar Tractor Company. This year, however, more attention has been given to theory, and Professor Hobart Beresford, head of the Department of Agricultural Engineering of the University, has been conducting a very much worthwhile course for the forestry students interested, in co-operation with the logging engineering department of the School of Forestry.

The Tractor Short Course, supervised by Mr. Elmer Humphrey of the University Engineering Shops, was given early in the winter and this afforded the forestry students opportunity to obtain preliminary training. Students enrolled in the course took turns at driving the tractor about the campus and nurseries, doing odds and ends of jobs for experience in tractor operation. The class made quick work of some undesirable fruit trees growing in the nursery and performed a real service in towing a road scraper about the grounds.

An effort is being made to obtain auxiliary equipment in the way of road and trail building machinery so that the School Forest on Moscow Mountain can be improved and made more accessible.

Blasting Demonstration Practical

In order to give Idaho forestry students first hand information in the use of explosives in forest work, a short course consisting of a series of lectures and terminating with a practical field demonstration was conducted the middle of April this year for the benefit of logging engineering students. The course was arranged through the courtesy of Mr. A. J. McAdams of the E. I. du Pont de Nemours & Company and in co-operation with Professors L. J. Smith and Hobart Beresford of the Agricultural Engineering Departments of the State College of Washington, Pullman, and the University of Idaho, respectively.

A south slope of Moscow Mountain ridge was the scene of activities for the field demonstration which embraced three phases—blasting stumps for right-of-way, blasting rocks for forest roads and trails, and blasting standing trees and snags. The care and use of explosives was particularly stressed and the students handled and placed the dynamite under competent supervision. It is planned to continue this course another year and to conduct the field work on the School Forest where it is desired to remove stumps and trees for road construction and also rocks projecting along the present road.

The inclusion of this course to accompany the instruction in tractor operation gives Idaho logging engineering majors considerable practical field work.

PAUL BUNYAN'S BIG TOP

ERNEST E. HUBERT
Professor of Forestry

The year that Paul Bunyan began logging in the wilds of Idaho remained in his memory a long time—like skunk odor in a mackinaw. It was in July, during that famous period known as the Three Winters, that he bullied his snarling crews up the snow packed slopes of the Coeur d'Alenes. And it was the Fourth of July when his men, tired and cold, slashed the last tree on the slope and, topping the ridge, gazed at what is now known as Fourth-of-July Canyon. It was here that Paul ordered a huge white pine tree blazed and dated to mark the progress of this day's work and, as his voice roared through the bleak forest, it shook the snow in avalanches from the trees, almost burying the crew.

The weather was steadily getting worse. It was what old timers called a hell-bender. It had hair on it. Snow soon buried the tallest white pines from sight and the loud booming of the frozen tree trunks as they split wide open sounded through those narrow draws like cannon shots. The next day Paul tried to mark a few choice trunks for cutting but found they were frozen so solid that his usual method of pinching sections out of the bark with his fingers failed flatly. At last the camps had to be closed down.

The logging operation had been hung up for two weeks and Paul's lumberjacks, soured with cards and yarn spinning, were roaring for action. Like caged cougars, they paced back and forth in the snow-muffled bunk houses until their boot calks wore deep tracks in the rough boards and their strong language and chewing snoos both gave out.

Paul knew his men and he knew something had to be done. Yet it was getting colder and the mercury had crawled out of the bottom of every thermometer in camp and no one knew how cold it was. Joe Mufraw was brought in frozen as stiff as a peavy and had to be thawed out in the cook's oven. And, only yesterday, the water in the sheet iron tank serving as teakettle on the stove, froze so rapidly when Sourdough carelessly opened the cook shack door that the ice was still hot and steaming when he removed the cover.

Something had to be done! Paul, pacing the office shack, was tearing up a couple of old flywheel belts in despair when suddenly he shouted: "By the old roary-eyed son-of-a-rig-slinger. I've got it!" Bundling up so that only his bushy eyebrows showed, he rushed out and strapped snowshoes on Babe the Blue Ox. Then roaring defiance to the storm he and Babe disappeared westward into the white fury of wind and snow. For three days the blizzard winds howled about the storm-sieged camp like a pack of timber wolves, tearing at the eaves and straining at the doors and windows, until the snow drifted higher than the roof ridge. The frost was six inches thick on the lightless glass and the smoke barely bulging out of the holes in the snow above the smoke pipes before freezing solid, plunged into the crusted drifts with a whish and a thud.

Above the roar of the blizzard on the evening of the third day a strange rumbling and crunching was heard and Sourdough Sam poking his nose out through a crack near the ridgepole of the cook shack, saw a strange sight. Paul, covered with icicles and snow, only his head and shoulders showing above the drifts, his arms revolving like a snow fan, was seen breaking the trail for Babe who was covered with huge poles, sections of piping, ropes and canvas until only her head and tail showed.

That night the storm shivered to a standstill and the next morning cracks began to appear in the snow where you would guess the doorways were. The gypo boys were frantically tunneling out and it wasn't long before Paul had his men sinking their teeth into one of the biggest jobs of his career—rigging a huge tent over a quarter section of snow-buried timber. The job was a holy terror. But so was Paul.

The snow was so deep that the sheer canyons between the high ridges were hard to locate and twenty of the best snoos eaters tugging at a guy rope stepped off the high ridge into Deception Creek and plunged out of sight. They burrowed through the drifts all that winter and Paul did not find them until next spring as they emerged at the mouth of the Little North Fork. Their camp sites can still be found on the little flats staggering the main stream every half mile or so.

It was not long before his men knew why Paul had brought so many sections of pipe for he strung a pipe line from his sawmill to the big tent and in no time he had steam filling the huge canvas and hissing out of every seam.

He steamed the timber for six days and nights, figuring that the snow would be melted by that time and the trees would be thawed out enough to cut down, but surprises were in store for both Paul and his men.

"Hell and high water," bellowed one bundle stiff, "these match stems are tougher than dry hemlock knots." With slush up to their armpits and five gallon oil cans as Palouser lights to cut the gloom as they felled the trees under the big top, Paul's timber beasts kept Babe the Blue Ox busy shoving the logs from the tent to the sawmill through a long tunnel shaped by the use of Paul's invention, the snow auger.

(Continued on page 51)

CLASS OF 1933

RALPH HUGH AHLSKOG
(General Forestry)
Lewis and Clark High School, Spokane, Wash.
Xi Sigma Pi, Sec.-Fiscal Agent, 4.
High Honors, 3.

HAROLD GILSON BROWN
(General Forestry)
Port Townsend High School, Wash.

WILLIAM VINCENT CRANSTON
(General Forestry)
Union High School, Mt. Vernon, Wash.

KENNETH MILES DANIELS
(Range Management)
Moscow High School, Idaho.
High Honors, 2 and 3.
Xi Sigma Pi.

WILLIAM WARREN ENSIGN
(General Forestry)
Hawarden High School, Iowa.

GEORGE MORRIS FISHER
(General Forestry)
Harlan High School, Iowa.
Xi Sigma Pi; Forester, 3 and 4; Sigma Xi.
Highest Honors, 2, 3, and 4.
Senior Forestry Award, 4.

HUME COLLAR FRAYER
(General Forestry)
Bennett High School, Buffalo, New York.
New York State Ranger School.

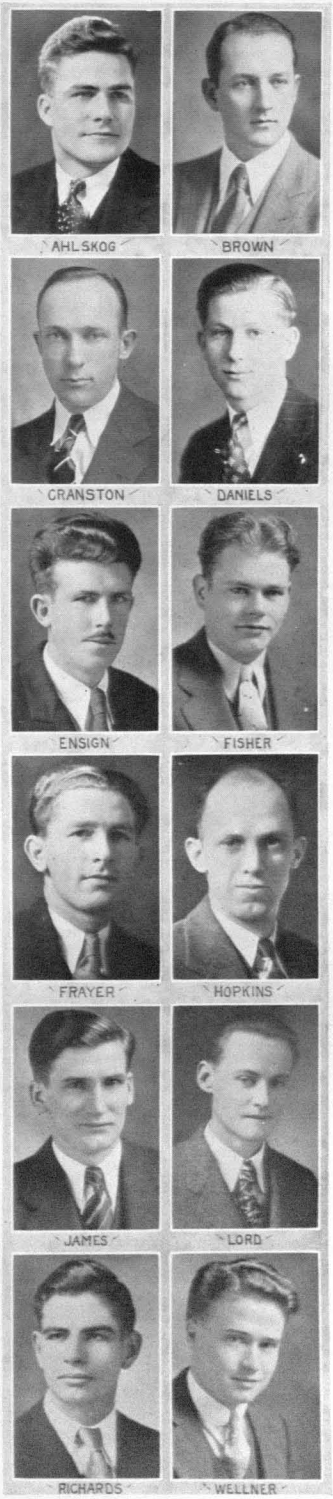
JESSE KYSOR HOPKINS
(General Forestry)
East High School, Rochester, New York.

CORLAND LEHMAN JAMES
(General Forestry)
North Central High School, Spokane, Wash.
Xi Sigma Pi; Sec.-Fiscal Agent, 3.
Associated Foresters, Publicity Agent, 4.

PHILIP BURTT LORD
(Range Management)
Roosevelt High School, Los Angeles.
Vice President, Associated Foresters, 3.

HORACE RICHARDS, JR.
(General Forestry)
Bend High School, Oregon.

CHARLES AUGUST WELLNER
(General Forestry)
Twin Falls High School, Idaho.
Sec.-Treas., Associated Foresters, 4.
Xi Sigma Pi; Associate Forester, 4.



1933 GRADUATE CLASS

JOHN J. MCNAIR

Cloquet High School, Minnesota.

Carleton College, Minnesota, B.A. 1930.
University of Minnesota, M.S. 1932.
Xi Sigma Pi.
Thesis title for the degree, Master of Science in Forestry:
"Esterification of Wood and of Cellulose *in situ* and the Production of Commercial Products from both the Cellulose and Lignin Derivatives."

VIRGIL DANIEL MOSS

Fairfield High School, Wash.

University of Idaho, B.S. (For.) 1932.
Thesis title for the degree, Master of Science in Forestry:
"A Summary of Federal and State Quarantines with Discussions on the Diseases and Insects Concerned."

ROYALE KING PIERSON

Shariton High School, Iowa.

University of Montana, B.A. 1930.
Xi Sigma Pi, Sigma Xi.
Thesis title for the degree, Master of Science in Forestry:
"Studies of the Function of the Pycniospore of the White Pine Blister Rust Fungus."

PAUL H. TALICH

Bristow High School, Nebraska.

Hastings College, Nebraska, B.A. 1928.
Utah State Agricultural College, Department of Forestry, Logan.
Colorado Agricultural College, Fort Collins, nine weeks' summer forestry camp 1931.
Xi Sigma Pi.
Thesis title for the degree, Master of Science in Forestry.
"The Effect of Shading on Seedlings of Western White Pine *(Pinus monticola)*."

FISHIN'

When you see me goin' fishin'
With my briar and my pole,
Just know it ain't so much the fish
That becks from hole to hole
As 'tis the fishin'.
Fishin' where the water's white—
Juicy worm, they oughter bite;
Fishin' from a tumbled tree—
Big one snatched it, reel goes whee!
Fishin' from a mossy bank,
Waitin' for that thrillin' yank—
'Tain't so much the fish I want
As 'tis fishin' and the jaunt.

When you see me goin' fishin'
With my fishin' pants and coat,
Just know it ain't so much the fish
Inspirin' such a tote
As 'tis the wishin'.
Wishin' that more folks would go
Where the singing waters flow;
Wishin' they'd just take a day
Wanderin' round up yonder way;
Wishin' folks would take the time
To go up there and think and climb,
Fish and loaf—I know it would
Do 'em just a world o' good.

STANLEY FOSS BARTLETT
in Boston Herald

THE ASSOCIATED FORESTERS

CORLAND JAMES, '33

SHORTLY after the School of Forestry was founded at the University of Idaho the Associated Foresters came into existence and this organization has grown steadily since that time both in membership and number of activities performed. The purpose of the organization is to create good fellowship among the forestry students and foster social activities of various forms.

The Associated Foresters

BONFIRE MEETING FIRST EVENT

Some evening at the beginning of the fall semester each year the Annual Bonfire meeting is held at Price Green in the Arboretum. This year short introductory speeches were made by the faculty, and graduate and undergraduate students. Music was furnished by the foresters' duet who sang several melodies. A successful evening was brought to a close by a feed consisting of hot dogs, doughnuts, and coffee. "Price Green" surrounded on three sides by trees forms a very suitable environment for the affair. A spacious fireplace is located at the open side.

DANCE AN ENJOYABLE AFFAIR

On the night of November 19 all foresters forgot about their studies for three hours and lost themselves in the atmosphere of music and lady companions, for it was on this date that the Associated Foresters held their annual dance. The Women's Gymnasium, used for this occasion, was decorated with pine and fir boughs that hung from the ceiling forming an evergreen canopy overhead.

DEAN MILLER TELLS OF EUROPE

Prominent men in the profession of forestry are obtained to address the forestry students from time to time throughout the year. Early in the fall Dean Miller, who spent last summer in Europe, told of his experience while abroad. His remarks on sword duels which often take place between German students created considerable interest. He explained that German students use this method of settling disputes.

C. K. McHarg, Jr., and Howard Drake, both of the U. S. Forest Service with headquarters at Coeur d'Alene, Idaho, and Meyer Wolff of the U. S. Forest Service, Missoula, Montana, were guests of the foresters during the year.

SMOKER INCLUDED THIS YEAR

To fill in that long interval which exists between the fall dance and the spring banquet a smoker was held in the Memorial Gym the first part of March. Professor C. W. Chenoweth of the University faculty, the headline speaker, being a former smokechaser, was right at home among the foresters. Music, boxing and refreshments topped off the evening.

The evening of March 27, the Annual Foresters' Banquet was held. With James Evenden, entomologist of Coeur d'Alene, acting as toastmaster and Warren Ensign making a backward flip from his folding chair, the crowd was kept well amused. Details of the

(Continued on page 51)

HERE AND THERE

NEWCOMB IS BEST RIVER RAT

COOK & NEWCOMB TAKE THE SAWING CONTEST

PALS - ME AND LOYD HAYES ?

TAKING NOTES - LEWISTON MILL

SCALING TRIP TO POTLATCH

MOLLY HOGAN GYPPO LOGGING COMPANY

COONROD LOOKS US OVER

BUILDING STEPS-ARBORETUM

CAMPUS DAY 1932 - FIREPLACE CREW

SKIDDING & LOADING

SCALING LOGS - PORTABLE MILL AT TROY

SCALING CLASS AT THE LEWISTON MILL

BANQUET BETTER THAN EVER

WILLIAM V. CRANSTON, '33

"We may live without books,
What is knowledge but grieving?

"We may live without hope,
What is hope but deceiving?

"We may live without love,
What is passion but pining?

"But where is the man who can
Live without DINING?"

MORE than one hundred foresters, would-be foresters, and their guests, gathered at the Blue Bucket Inn, Wednesday evening, March 29, for the seventeenth Annual Banquet of the Associated Foresters. The large crowd present was a splendid tribute to the efforts of Lawrence Newcomb and the members of the banquet committee who, through skillful planning, carried to thorough completion this splendid social affair.

"Larry" Newcomb, president of the Associated Foresters, opened the meeting with well chosen words of welcome to all present. The following guests were introduced by Mr. Newcomb: Mr. J. C. Evenden, forest entomologist and Mr. Chas. K. McHarg, Jr., regional forest inspector, both of Coeur d'Alene, Idaho; Mr. C. L. Billings, general manager, Mr. E. C. Rettig, land agent, and Mr. Walter Field, assistant land agent, all of Potlatch Forests Inc., Lewiston, Idaho; Ranger W. H. Daughs, U. S. Forest Service, Princeton, Idaho; Mr. J. J. O'Connell, general manager, and Mr. A. A. Segersten, land agent, both of Potlatch Forests, Inc., Potlatch, Idaho; Dr. F. W. Gail, head of the botany department, Dr. F. B. Laney, geologist, and Mr. T. Ashlee, florist, all of the University faculty; and Mr. Ben E. Bush and Mr. Adrian Nelson, both of Moscow, Idaho. The meeting was then turned over to Mr. Evenden, who was appointed toastmaster for the occasion. Mr. Evenden's reputation as a keen wit and a professional wisecracker had preceded him and in his capacity as toastmaster he disappointed no one for he spared no speaker in his introductions, much to the delight of those present. Mr. Evenden introduced Miss Louise Throckmorton who gave a reading which was distinctly different and highly entertaining. Following this Mr. Evenden introduced Dean T. S. Kerr of the University faculty who spoke on "The Rôle of Government in Business."

Dean Kerr stated that ours was a dual form of government; state government and national government. The United States Constitution gives the national government control over states' commerce business. This control is exercised through the Interstate Commerce Act of 1887 and the Sherman Anti-Trust Act of 1890. The former applies particularly to the railroads of the country, and the act was legislated to prevent the practice of discrimination in rates, wholesale issuance of passes, the system of secret rebates, and the charging of higher rates on short hauls than on long hauls.

The Sherman Anti-Trust Act was passed to prevent "combinations in restraint of trade," but the U. S. Supreme Court read into the Act the word "unreasonable" which reduced its force. The Supreme Court decides whether or not monopolistic control is injurious to the public. The power granted in these acts is the one and only practical means by which the national government can regulate business.

Mr. Kerr concluded his remarks by saying that the grandeur of America consists in providing opportunity for every young man and woman in this country and that we are living in the "Land of Opportunity."

At the conclusion of Dean Kerr's talk the University Quartet composed of Paul Rust, Carl Fischer, Wayne Hampton, and Reginald Lyons, accompanied at the piano by Martha Jean Rehberg gave several pleasing vocal selections.

WOLFF SPEAKS ON LAND USE PLANTING

The next speaker was Mr. Meyer H. Wolff, Assistant Regional Forester in charge, office of lands, U. S. Forest Service, Missoula, Montana, who spoke on "Land Use Planning." Mr. Wolff's twenty-four years of experience in the Forest Service enables him to speak with authority on the subject. He stated that forestry was a form of land use, and that if land is to be put to its best use, careful plans must be made. Lack of careful planning has resulted in the use of marginal lands for grazing and farming when its use for such purposes was not needed. The result is chaos. Demands for the present use of such lands and for their future use must be weighed carefully, and co-ordinated to the highest degree possible. Such plans involve consideration of population, demands for farm and forest products, taxation, interest on land mortgages, recreation, fish and game, back to the land movements, and numerous other factors.

INCOMPLETE PLANS BETTER THAN NONE

Mr. Wolff emphasized the fact that it is better to have a plan which does not measure up to expectations than to have no plans at all. Some degree of success results in plans even though these are not adequate, while no plans result in disorder and chaos. A plan is not an end in itself but a means to an end, and is worthwhile only when translated into action.

In conclusion Mr. Wolff mentioned President Roosevelt's reforestation program explaining that such a program would help out the employment situation by giving work to

On the Clearwater Field Trip

more than two hundred thousand men, and that it would help the farmer and the community, but that if such a program was to be a success it must be based on careful planning.

Two accordion solos (the toastmaster called the instrument a "stomach Steinway") by Herman Daughs, a member of the Associated Foresters, furnished entertainment and diversion, and were rewarded by rousing applause.

Mr. G. F. Jewett, Manager of Potlatch Forests Inc., Coeur d'Alene, Idaho, and the last speaker of the evening, spoke on "Forest Taxation." Forest taxation is one of the major problems of the timber industry. Present systems of taxation prohibit private timber ownership. Mr. Jewett declared that "taxation confiscates white pine in twenty years," and "that the private owner must liquidate in a few years' time." Forest liquidation is an important factor in glutting timber markets. Attention was called to the importance of this to educational institutions which receive an income from timber sales. At present the only way out of this situation is for the government to acquire all timber. He said that as foresters and citizens we could render real service to our communities and to the state by giving them a clear picture of this situation. Private ownership can be maintained only by some form of sales tax or yield tax.

And so ended the Seventeenth Annual Banquet, declared to be as interesting, as full of the spirit of good will and fellowship, as appealing to the sense of taste, and with the bonds which unite foresters and those interested in forestry woven stronger than ever by the feeling that we sponsor a great and worthy cause, that we can and will "Down the Depression."

MOUNTAIN TOP THOUGHT

STANLEY FOSS BARTLETT

God, may I never weaken so
I shall be bound to levels low;
When I shall lack the strength to climb
A peak, with step attuned to rhyme,
And cannot mount where winds sweep high
I think that I shall want to die.
When last I scale a cloudy crest
Then let me tarry there to rest—
There in the blue aloof from cares,
Above the muck of men's affairs,
Beyond the cursed desire for pelf,
Outside the smallness of myself—
Thus mongst my fellows may I live,
And die when I have naught to give.

THE 1932 JUNIOR FIELD TRIP

J. P. Brown, '34.

Sunday, May 22.

Up at six a. m., as the modern Pepy would say, and as happy with expectancy as a little boy with a brand new red wagon. All this was in preparation for the junior class field trip to the Northern Rocky Mountain Forest Experiment Station near Priest River, northern Idaho. Those assembled for the trip were Ralph Ahlskog, Rudolph Benson, J. P. Brown, Loyd Burnett, John Cook, Kenneth Daniels, Jack Frederic, Corland James, Merton Kuhn, Paul Larsson, Paul Martin, Lawrence Newcomb, Robert Opie, Theo. Raide, and Chas. Wellner and accompanied by Floyd Otter and A. M. Sowder of the forest school faculty. We left Moscow at 9:10 a. m., almost on schedule. The cavalcade consisted of "Bud" Daniel's open air taxi which accommodated the "tractor gang," and the University truck which took care of the remainder of the juniors, including Ahlskog who occupied the floor. "Bud" Daniel's car stopped at St. Maries at Benson's home so arrived at the station a trifle late. The truck was right on schedule for the evening meal. Doings of the five tractor guys in the open air taxi after we left them at St. Maries is not available for publication, but it is known that they can identify the taste of sandwiches bought from any lunch counter between St. Maries and Priest River. Even then Paul Larsson insisted on eating supper when he arrived at the station several hours late.

Monday, May 23.

Up at seven a. m. after a very unrestful night. The writer, who is possessed with that lightning-like "Arkansas" swiftness, being the last one to bed was requested by "Prexy" Newcomb to turn out the gas light. In some manner or means his pajamas disappeared as the light was going out. As a result all the beds in the east end of the bunkhouse were searched, but the pajamas were still nil. In the morning the pajamas were found at the top of the flag pole fluttering in the wind like brilliant butterflies.

This day the juniors covered the station grounds, the buildings and improvements being explained by John B. Thompson, the resident ranger. All the buildings were investigated, under, over, and on the sides from the gas house to "Woods Office" which, by the way, is the only building at the station built according to blue prints. The juniors are now well grounded in the knowledge of the moment of force required in frost heaving to move a tamarack block from under a building. The afternoon was spent in a hike to "Crow's Nest Lookout" and along the fire break on the ridge south of the experiment station. After supper a loud noise broke forth from the vicinity of George Jemison's residence. The noise proved to be a charivari for Mr. Jemison, class of '31, and his recent bride, the former Miss Beatrice Gibbs of the University.

Tuesday, May 24.

Up at seven a. m. after another pajamaless night for the whole party. Mr. Jemison explained to the boys the experimental work he is conducting in inflammability studies. In the afternoon we discovered there existed more instruments for measuring weather than we could count.

P. S.: Benson, James, Daniels, and Brown are still minus their pajamas.

Wednesday, May 25.

"Prexy" Newcomb wants to know how all the gravel from the road happened to be in his bed last night. Benson's recreation was getting votes for white papers, even though John Cook had a majority for brown papers. Mr. I. T. Haig showed us a thing or two, in fact several things about silviculture. Mr. Sowder blossomed forth this morning minus that mourning bow tie. Maybe it changed his luck, he crossed every footlog today without falling in the creek. Through his influence, Cook has all the non-smokers to perjure themselves by voting for brown papers.

P. S.: Bribery did it.

Thursday, May 26.

Went up on the Kaniksu National Forest where Floyd Cossitt, another alumnus of the Idaho School of Forestry, showed us how hemlock is being disposed of and later some new planted areas. We found a deer that had just recently been killed by a cougar. Last night's baseball game was umpired by Loyd Burnett. Burnett says that since his eyesight deteriorated he has quit playing baseball and taken up umpiring.

Friday, May 27.

Fought mosquitoes and tried to select seed trees. Newcomb's spiked topped trees did not seem to be the proper things. Our baseball game tonight included such notable players as Messrs. "Home Run" Koch, "Four Base" Weidman, and "Fan 'em Out" Watts from the Regional Office at Missoula.

Saturday, May 28.

Determined the distance of seed dispersion from the Knoll Plots. Visited the seed extractory at Falls Ranger Station. On the way back to the station we took Priest River by storm.

Sunday, May 29.

It is rumored that about seven juniors visited the dance at Blue Lakes last night. Went up Priest Lake to Beaver Creek Ranger Station. The "Tyee" and Captain Markham's tales will long be remembered. "Dad" Frederic can repeat all of the stories with extras added.

(Continued on page 52)

JUNIOR FIELD TRIP

NORTHERN ROCKY MOUNTAIN FOREST EXPERIMENT STA.

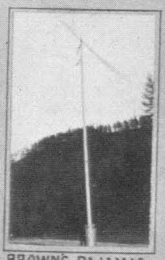
GEO. YARNEAU

THE ROLL CALL

E.C. OLSON

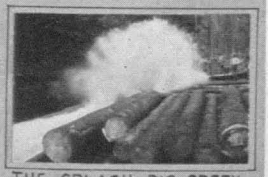
THE DEAD DEER

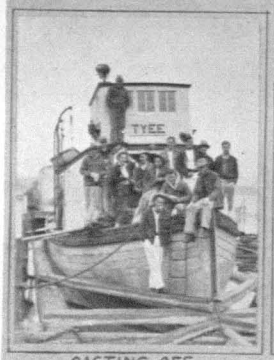
THE STATION SENDS XMAS GREETINGS


BROWNS PAJAMAS

JACK PINE FLAT ROAD

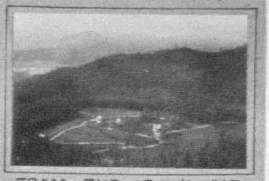
PART OF OUR BASEBALL CLUB


THE SPLASH - BIG CREEK



CASTING OFF

WATSON MOUNTAIN


FROM THE CROW'S NEST

THE FAMOUS CHIMNEY ROCK