

GOPHER
PEAVEY



Forestry Club
UNIVERSITY
OF
MINNESOTA

THE
Gopher Peavey

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FORESTRY CLUB



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FOREWORD

"Minnesota Foresters Make Good."

The activities of Minnesota Foresters from the "green" freshmen to the wide range of technicians, are many and diversified. In an attempt to adequately present such a field of activity, the staff has confined its selection to articles by students and alumni only. We have attempted to use only those contributions which are most representative of that complex process, the life of Minnesota Foresters. If any fields have not been presented, we place the blame on our contributors.

Being young, plastic, and not at all "case-hardened", we will gladly welcome all constructive criticism and contributions.

To our contributors we extend a vote of thanks for their unselfish co-operation. To our advertisers, we owe our existence. It is our sincere wish that this book will merit their being with us again in 1932.

The reader's appreciation of this publication may be shown by an early subscription next year.

PEAVEY STAFF, 1931.

Contents

BROADENING OUT IN FORESTRY by <i>Elevy Foster '28</i>	9
TWENTY YEARS WITH AN ALUMNUS by <i>D. W. Martin '11</i>	13
1930 LOGGING TRIP by <i>Harry T. Callinan '32</i>	16
FOREST PRODUCTS PATHOLOGY, AN AID TO THE INTELLIGENT UTILIZATION OF WOOD by <i>Ralph M. Lindgren '26</i>	18
THE FORESTRY CLUB	22
THE 1930 FORESTRY CLUB BANQUET	23
COMMENTS	25
IN MEMORIAM by <i>A Friend</i>	26
1930 WINNING PACK ESSAY by <i>Alf Nelson '31</i>	28
SENIORS	32
WHERE DO WE GO FROM HERE? by <i>A. O. Benson '10</i>	40
JUNIOR CORPORATION by <i>Arthur Schneider '31</i>	43
GAME MANAGEMENT by <i>Carl B. Krueger '27</i>	49
FEATURE	53
FRESHMAN CORPORATION 1930 by <i>Clyde Gorman '33</i>	55
XI SIGMA PI	58
A LOGGER'S LIFE IN THE PACIFIC NORTHWEST by <i>H. Engstrom '32</i>	59
TAU PHI DELTA	63
CLASS OF 1934	64
SHADE—FOR THE ASKING by <i>Thad Parr '29</i>	65
CLASS OF 1932	68
BULL OF THE WOODS by <i>"Porky"</i>	69
METHODS USED IN A STUDY OF FOREST TAXATION by <i>Ray Thomson '25</i>	71
ODE TO THE APPLE by <i>"Porky"</i>	75
MICHIGAN SUMMER CAMP by <i>Jack Kapitke</i>	76
THE CALIFORNIA CLUB by <i>George Plant '32</i>	79
JUST ANOTHER SMOKE CHASER by <i>"Porky"</i>	81
ENROLMENT	83
AMONG THE ALUMNI	84
ALUMNI DIRECTORY	87
ADVERTISERS	92

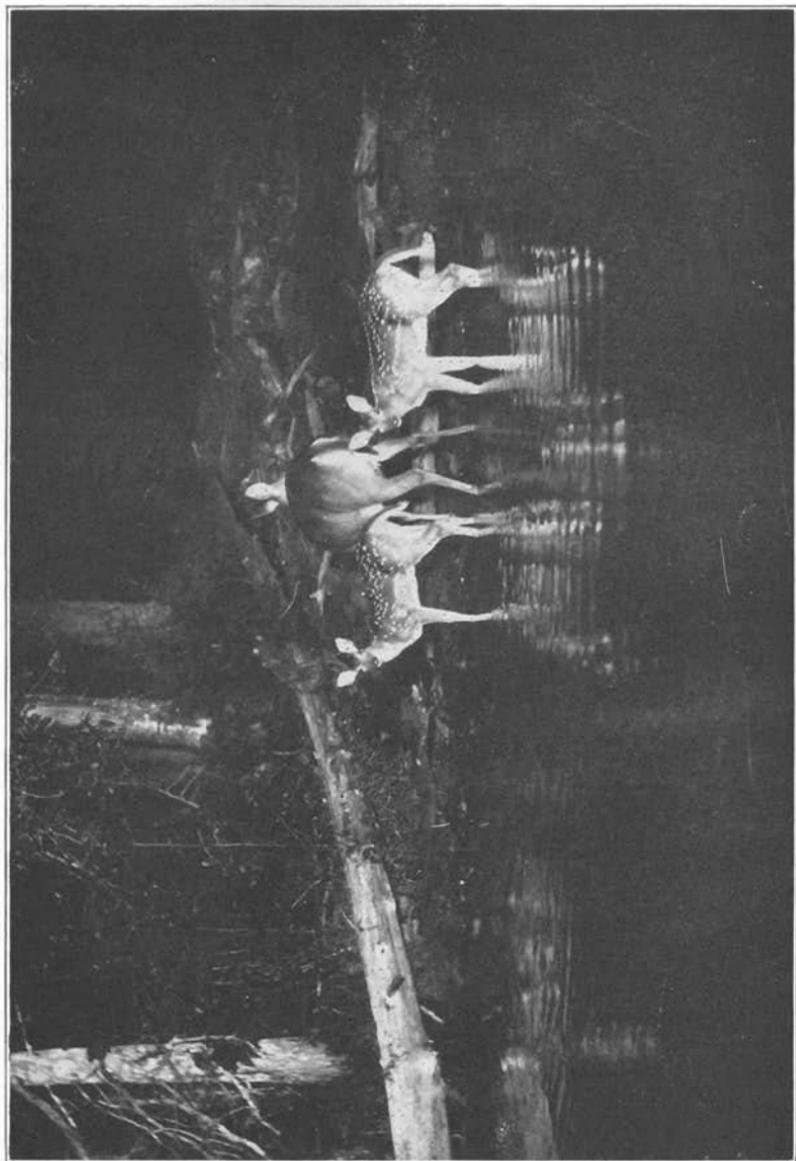
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Dedication

TO GROVER M. CONZET WHOSE
ABILITY, LOYALTY AND INTEG-
RITY IN THE FACE OF ALL ODDS
FORCE THE ADMIRATION OF
ALL WHO KNOW HIM.



A DOE AND TWO FAWN

BROADENING OUT IN FORESTRY

BY ELERY FOSTER, '28

REFLECTIONS AFTER TWO YEARS "IN THE MILL"

(In this paper I have spoken solely of administrative work in the U. S. Forest Service. I believe my ideas apply equally well to similar work in other organizations.)

THE forestry grad. who passes the J. F. and enters the administrative field as an assistant ranger is up against *plenty*. Unless his past experiences have been rather exceptional.

As a triumphant survivor of the dreaded elimination contest he enters the profession with technical equipment galore. He is on speaking terms with all the trees—correct names and nick-names. He understands most of Chapman's Mensuration. He has speaking acquaintance with all the brethren and sistern Fomes, and knows all the secrets of Cronartium and Dendroctonus. He is prepared to manage forests for timber production, to build up volume tables, to study growth and yield and disease.

This is all very fine. It should give him a feeling of pride in his high calling.

The J. F. has carried on the illusion of technical profundity and professional swank.

But the minute you get word that you have passed the exam, take my advice, young man. Drop everything you struggled so hard to remember for the exam. While the rails click or the prop roars, or you nurse your worn car toward some distant forest to report, get busy with your imagination and try to learn by sheer force of conjuring out of thin air, the kinds of things you will be expected to know on your first assignment.

Ask yourself a few questions.

What will it be like to be a Forest Officer? What will people expect of me? What will I have to do? Can I handle an axe or a shovel convincingly enough to make a crew of mountaineers feel I am anything but a fresh kid out of an eastern college? Can I pack a horse? Can I climb with telephone spurs? Can I tackle a fire coolly and wisely? Can I handle men—especially mountain men and woodsmen?

And think fast, junior forester, think fast. In a few hours you will be set down among all the activities of a ranger district, and be introduced as a new officer.

If you don't want to land on a forest fire with the mental equipment required for running a research project, keep your mind busy

all the way out. You are liable to feel like the West Pointer who has learned the theory of wars and how to fight them from brass-hat headquarters, finding himself with a smoking rifle and a bloody bayonet in the midst of a Chateau Thierry.

You are going to be judged on the way you measure up to the old-timer. Mountain people don't know about the beauties of high-brow forestry yet. A ranger is judged on his woodcraft, his physical strength, his ability with tools, men—and situations—dangerous, delicate, and otherwise.

The ranger is an officer of the law. He is a deputy game warden, a federal officer, and a state fire warden. He is a public servant. And above all he is a woodsman.

It may please the local constituency to hear you glibly name the conks on trees and the wood-borers under the bark. But they will be more critical of your work on fires, your handling of men and situations, and your troubles with a diamond hitch or the "innards" of a telephone. They will place a higher woodlore value on your ability to distinguish a faint cougar track in the trail, or identify the bleaching skull of a fox or coyote, than in your precise knowledge of *Trametes pini*.

You are an exceptional Forest School grad if you fill the specifications for a forest officer according to the standards of the mountain people. For one thing your knowledge of forestry is 90 per cent or more academic. Instead of growing up in the woods, fighting fires and working trails and phone lines from boyhood, as these mountain men—your guards, lookouts, laborers—did, you (if you are typical) grew up among cornfields or on city playgrounds. You became interested in forestry after a vacation trip to the north or west, or after reading Pinchot's *Training of a Forester*. Your early experience was on the farm, or else in a bakery, or a soda fountain, or a newsstand. Your training in forestry started with the Latin names of trees. Your constituency on the Forest started theirs with an axe, or with a water carrier's job on a fire, as a small boy.

You are very inexperienced in comparison. Unless you have a genius for woodcraft and mountaineering it will take you some time to get caught up in the practical things of your job. (Of course the rather rare forester who has grown up in the woods will realize that what I say is not for him.)

I do not write this to discourage the would-be J. F. administrative assistant. I would not trade my trying and difficult experiences with any of my friends who chose the more dignified walks of research or specialization. I do hope that my words will influence a few prospective administrators to get all the practical experience possible before they find themselves turned loose on a forest with practically no qualifications for performing their first duties.

I think particularly of woodcraft and the use of common tools when I speak of inexperience. As a minimum requirement all for-

esters—even research men—ought to be experts with the axe. And with as many other tools as they have opportunity to master. It is hard to find a substitute for such preparedness.

There is *no* substitute in handling men, for the ability to pick up a tool and demonstrate accurately and expertly the work you want done. You will find that the resentfulness of some of your men toward the more fortunate college-trained superior is most readily dispelled by proof that the college man is equally, or more capable with the worker's tools than is the worker himself. There will be young men your own age who envy you your job. And they can say or just look mighty discomfitting things if it appears that you are inexperienced in the work you are supposed to direct them in doing.

If a man is interested in preparing himself for administrative work and desires to be ready for the practical as well as the technical tasks which will confront him on the Forest, he should seek the vacation jobs which give him the best training.

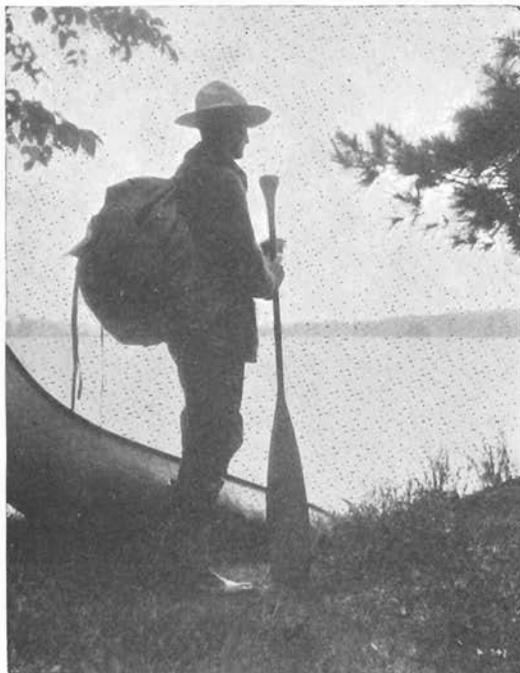
From the standpoint of being handy with tools and able to tackle different kinds of work the farm-raised boy usually has an advantage over city-bred fellows. If he has gone in strongly for sports the city boy may be the better qualified physically.

Timber-cruising, lookout and mapping jobs are good experience. But for training with the tools of the trade there is nothing to compare with a small logging operation. There the axe, saw, peavey and a dozen other things can be mastered. Such work is rather hard to find, unless provided on a school forest where logging operations are carried on. Ranch work, trail construction, telephone work, road work, fire-fighting—all offer valuable training. If I had to do over again and if I could afford it I think I would spend one summer in the west doing nothing but firefighting. If the season was favorable (i. e., unfavorable as regards the forests) I would make good money. Otherwise I might get on only a few fires. The experience would be mighty interesting and it would give the future ranger and supervisor the firefighter's point-of-view.

I think every old-timer in the Service—and the new J. F., too, after a few weeks initiation—will agree that what I have said about forest school men in the ranger's job is true in 9 out of 10 cases. Practical experience with tools, and with woodcraft, is their greatest deficiency. It was, and is, in my case. And I thought my practical experience was better than average. It included farm work, building construction, cruising, trail work, a summer on a lookout and four years in a good forest school. I had taken a very practical course in applied mechanics in college and rang it in for signal service on several occasions. All of my former experience was useful, but there was still much, very much, left to learn. Most of it had to do with mountaineering in general (especially with horses) and with fire control. Also telephone work.

There are other things, of a somewhat more technical nature, which I also found as blanks in my background of training. Among them were law enforcement technique, knowledge of fish and game matters, and an understanding of the "innards" of telephones. These perhaps could best be furnished as a part of forest school training.

There are so many things a practicing forester—a ranger or supervisor—has need of knowing, that it is a knotty problem how to best equip him while in the forest school. Much, very much, will always remain to be learned on the job. While in school he—and the school—should aim at building the best foundation possible for the superstructure of wisdom, knowledge and ability that will come only with experience.



"BROADENING OUT"

TWENTY YEARS WITH AN ALUMNUS

My Dear Editor:

IN YOUR letter requesting a contribution for the "Gopher Peavey" no subject for an article was suggested so I am going to proceed along those lines and give you some rambling notes without a subject. Since graduating in 1911, I have been out of touch, most of the time, both with the school and its graduates. As I am always interested in learning news of my former classmates, I suspect that some of them might like to know what has happened to me during all these years.

My occupation since leaving school has been entirely estimating and valuing timber properties, first for the Forest Service in the acquisition of the White Mountain National Forest in New Hampshire, second for several corporations in Maine and New Hampshire, and third since 1921 for the Federal Treasury Department for income tax purposes. This latter work has taken me into all the forest regions of the South, East, and Middle West. My headquarters are at Washington, D. C., although I now reside at Lanham, Md., near Washington where I am building a house on some woodland acreage. It gives me a chance to indulge in a little practical forestry as contrasted from the swivel chair variety which my present work calls for about 90 per cent of the time.

Speaking of actual forestry work, I am trying to recall among my former schoolmates any who are practicing the art of growing trees. I mean foresters that forester. I can think of timber cruisers, lumbermen, engineers, teachers, forest supervisors, executives, etc. I hesitate to call myself a forester any more because someone seeking knowledge may ask me how a tree grows, or how to plant a seedling, or some other equally elemental question, and I will be much embarrassed to answer, not having really considered the matter since leaving school. I am seriously thinking of taking a correspondence course in forestry in order to pass muster.

During the period I have been in Washington, I have met several of the older graduates. D. P. Tierney for a number of years had charge of the valuation of timberlands in the Lake States for income tax purposes, and I of course would see him constantly. I would still like to see Tierney but in his present position at Castle Rock, he is no doubt better satisfied. Last summer I met Don Brewster (1910), and Arnold Benson also of the 1910 class, and we had lunch together. Don is with the extension work of the National Lumber Manufacturers Association and is making people use lumber whether they want to or not. Several weeks ago, I had a chat with L. V. Hoffman (1911) at the annual meeting of the Society of Ameri-

can Foresters. Hoffman has the Forest School at North Carolina and has recently been acquiring second growth land at bargain prices. His is a new Forest School but Hoff says he did not lack for students as most of his former Mont Alto students followed him to Carolina, and he opened up with full classes for all years. Hoff seems to be as popular and efficient as he was as manager of the 1911 class summer camp at Itasca. Recently I met L. A. Stevenson (1911). He is with the Department of Agriculture. In 1925 due to a difference of opinion as to the amount of war taxes owed by a large Minnesota operator, I had occasion to be in the field with W. T. Cox. Cox was employed by the operator. It was my first meeting with Cox, and the pleasure of being with him was not diminished by the fact that we were representing different interests.

I regret that my work has kept me from more constant association with Minnesota. However, there are several occasions when the old associations have been revived in my memory.

During most of the War, I was with the 20th Engineers cutting timber in France, but a portion of the time I was in a combat training camp. It was in November 1918, the weather chill and dreary that I was walking along a row of drab barracks. Some one jumped up and said, "Well, where in hell did you come from?" It was Art Chase, a pal of mine at the Forestry School. We sure staged a celebration, it being about Armistice Day also. The celebration did not take usual form of smoking a pipe around a bon fire, and my recollection is somewhat hazy as to the discussion although I am quite sure our days at the Forestry School must have been mentioned. However, I got back to the barracks that same night, but Art was missing three days and when located was in an army hospital where he had gone for treatment of some imaginary ear complaint, having gotten in some fracas during the celebration. The doctors had been three days trying to locate something that was not, and would not let him out until it was found. He had visions of spending the remainder of his service in the hospital.

After the summer work at Itasca in 1910 most of our class returned to the Forestry School by canoe via the Mississippi. I was unable to join the group but had always wished to make the journey. After the war, having some leisure time, and being at that time in Park Rapids, Minnesota, I decided to indulge my wishes. My sister accompanied me. We arrived at Lake Itasca about noon with canoe and blankets but no other outfit. We had a visit with Professor Cheyney during which he inquired about our outfit. He wondered if we did not want to eat anything on the trip. I who had been traveling by canoe the fast rivers of Maine said, "Well Bemidji is only about 30 miles away. We'll get supper there and outfit tomorrow." I sure got the laugh on that remark. "Well," Cheyney said, "it's 110 miles by river, and the water is low and slow. You better figure on at least three days." We did make it in three days, but it seemed to me I

dragged the canoe about half that distance. Which all goes to show that when undertaking an adventure in a new country your previous experience is often of little use.

And that is what Forestry has been until recently to me. New experiences in a new country. An ever changing array of persons and places. As another forester enlarged on this subject while sitting around a camp fire on the Allagash River in Maine. "What results this forest life? You have acquired a taste for solitude, for the woods, and nature. You have been places and seen things. Life has been a constant panorama. It has been full of adventure. You have not made much money, but there has been plenty for a living. Perhaps if you had been a banker or a broker, you would be rich. Would you choose differently not knowing what you do? NO!"

Let me take this occasion to say hello to all my classmates and friends.

Yours very sincerely,

DEAN W. MARTIN '11.



DID YOU EVER SEE?

1. Hoot and the G. F. in a Finnish Fling?
2. "Horseface" "Klotz" Savage and "Porky" "Plush" Anderson as bridge partners?
3. The look on "Soup" Campbell's face when he learned that Alice Stuart got an "A" in mensuration?
4. The all-Forester's B. B. team in action against a bunch of scrubs—no headlinesman, no headgears, no rules—oh! My operation!

Anonymous.

A RETROSPECT OF THE 1930 LOGGING TRIP

HARRY T. CALLINAN, 1932.

FAR from the drab and commonplace existences which the campus and its two suburbs have to offer the student forester; beyond the horizon of the stodgy routine of college professors, dingy street-cars, and Wickersham committees, lies a serene little lake, seldom heard of. Just a stone's throw from the Ontario line, midst the crooning pines, the chilling breath of the frigid Arctic, spiked with the tang of cedar and spruce lies this lake known as Clearwater. Virtually a speck of heaven placed thus to give poets and professors alike, a slight rejuvenation of humanism and incidentally to provide a mecca for some twenty-three odd foresters, roused from their spring lethargy, that radiant Palm Sunday of 1930.

Which brings us to the journey, and what a journey! Up the highway we "whizzed" through towns of import, (referring to the town of Mahtowa, famed as the birthplace of "Ozzie") Hinckley, town laid low in 1893 and Carleton, capital of Duluth. And all the while songs, old and new, were sung and resung, with enough staccato and allegro to suffice Curcci through many a hit, but it remained for Lyall to render that paradoxical fallacy to the tune of Rachmaninoff's Prelude in C sharp minor, of which I have a faint recollection of the first four lines:

*"Oh Cheyney dear, Oh did you hear,
The news that's going 'round?
Your sawmills course is sure a pipe,
And your silvics is unsound."*

The unwritten lines will be sent by the owner on request, but as the last lines faded into eternity, that enhancing rose-petal fragrance of Weyerhauser's town greeted us, and ten minutes later, more or less, found us united with the remaining caravaners in a Cafe Deluxe of uptown Cloquet. Supper and "extravagenza lingo" having been consummated, we dispersed to the bunk houses at the experiment station where one flat tire was mended, three bridge games begun, and two accordions resurrected. As Frisby so aptly and sardonically expressed his idea of accordion players, like Tysk and Hunt: quoth Frisby, "Give them a monkey with said accordions and they'd make F. S. wages on any decent street corner." But the trip was young and expectations high, so pleasant avocations were sacrificed in favor of adjourning into the arms of Morpheus, with the exception of "Con-sid" Wellberg who had long ago succumbed to that worthy individual.

Monday morning bright and not so early, led by our modern Mahomet in the guise of one R. M. Brown, seven freshair tintypes struck down the incline into the Zenith city and out again along the

windswept North Shore drive. Picture this twentieth century caravan winding through the dalles, passing ice-blocked coves, bridging foaming torrents, through dark pine groves and oh! such ecstatic beauty as only our worthy steward and poet, Randall, or "Ducky Wucky" Jackson could give justice to in a line or two of iambec pentameter.

Dusk found a cold, tired and hungry group on the brink of eternity, specifically, Gunflint trail. Thirty miles into the heart of the tall timber this unsurveyed byway led us. (Virgil's journey into hell was a pipe compared to this). However all survived the bumps sufficiently enough, to storm the pretentious lodge at Clearwater, shake off a few layers of outer apparel and create a general pandemonium, which babble was soon superseded by quiescency through the appeasing of twenty-three prosaic appetites by epicurean artistry as only mother could surpass. Such appetites are certain to lead to lost ambitions, outbursts of insomnia, and other maladies. Being exactly what resulted, insofar as nothing strenuous was commenced the first night with the exception of Campbell, who produced his notebook and began his usual notations on nothing, while the rest of us, flushed to the nth degree in anticipation of the many dark secrets enshrouding that fast waning art of ye ancient Bunyan which were to be revealed to us by the honorable R. M. in our initial hike up the tracks on the morrow, suppressed all pranks until some forthcoming evening, for a bit of sleep.

The ensuing days revealed to us an open sesame of all the quips followed by logging concerns of import, and boy! how we shadowed those Finns around trying to pry out of them a morsel of information, is still a laughable memory. Yet I venture to say reams of paper were used in prosing the accumulated facts into "Brownonian" form." Facts! From the number of bales of hay per horse to the number of wedges split by one numb Finn in one minute (curve horses over wedges and you get the hay used), while a most intimate study of the logger himself, was obtained by personal contact, at a meal with the "boys". This day and age of flag pole sitting contests, gum chewing festivals, and aeroplane golf games certainly would not outshine that silent victual gobbling race which this meal resolved itself into. Forty-five loggers were the decisive victors by a plate of beans, three pieces of Russian bread and four desserts.

Such was the fitting culmination of that memorable trip to Clearwater, for Saturday morning dawned, cold and bleak, but not until thirty strong arms had succeeded in boosting the cars up the first fifty per cent rise, were we Southward bound once again. By noon we reached Cloquet, and here most of the boys bid us au revoir in lieu of their nine weeks' sojourn at the forest school.

Well, old subscriber, if you've read down to here I'm satisfied, you've suffered enough, but before parting, remember the words of Bacon (good old eggs and—) "Some stories are to be read and digested—". Well!

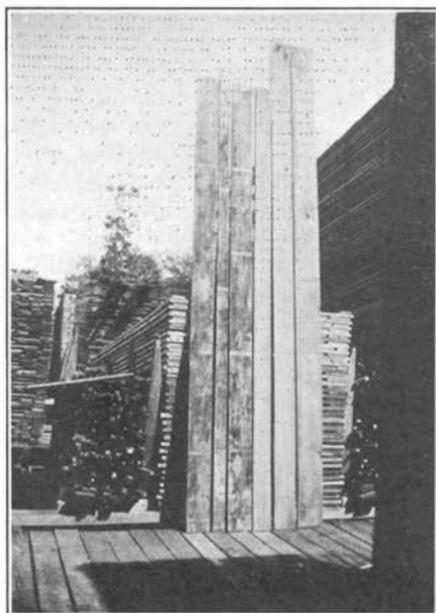
FOREST PRODUCTS PATHOLOGY, AN AID TO
THE INTELLIGENT UTILIZATION OF WOOD

RALPH M. LINDGREN, 1926

THE realization in recent years that our woods are not available in inexhaustible quantities has given impetus to the study of the conservation and perpetuation of our forest resources. Each year increasing efforts are being made to insure the nation a continuous supply of wood through the proper management of existing stands of timber and the establishment of new ones. There is another phase of forest conservation, one that is commonly ignored and yet one in which every manufacturer and user of wood products might participate; namely, the intelligent utilization of the wood after it is removed from the forest. Since true conservation does not imply hoarding of our resources, this is an essential phase just as reforestation measures are. A judicious use of wood requires among other things a knowledge of the nature, cause, and factors affecting the development of deteriorating agents to which it is subjected and which are limiting factors in its usefulness. It is such information, especially when wood-attacking fungi are concerned, that the products pathologist seeks to obtain, and having it, uses in the development of efficient control methods aimed at reducing the preventable losses. With the depletion of our virgin stands and the necessity of cutting second growth timber containing a large proportion of susceptible sapwood, the problem of devising adequate methods of controlling such fungous defects as decays and discolorations assumes increasing economic significance.

The deterioration of lumber, logs, and other forest products, either in storage or in use, due to degrading and cull-producing fungi has been the source of serious annual losses to manufacturers and consumers. A few examples will be desirable for purposes of illustration. The occurrence of one common fungous defect in domestic and export lumber, blue stain, has been said to cause an annual loss of ten million dollars as a consequence of reductions in grade, price, and saleable quantity of the affected material. Decay in stored logs has been estimated to involve from three to as high as 50 per cent of the merchantable volume and to represent a minimum annual bill of over forty million dollars. Damage in this latter case is not confined to the log but continues in the green lumber placed in air-seasoning piles, and is a potential menace as a source of infection to any uninjured lumber coming in contact with it. The introduction of rotted material into buildings and the subsequent infection of lumber in place due to faulty construction has necessitated large replacement costs. In recent years such damage has been increasing in severity

because the trends in architectural design are towards departing from the use of high foundations in such structures as schools, churches, and the better type of houses. Examples in case are structures of Spanish architecture which are not practical types of construction in warm moist regions, especially, unless certain precautionary measures are observed. The prevalence of decay in buildings of such design as reported in a number of recent cases indicates that the aggregate losses must be great. The illustrations of damage enumerated above are but a few of those that occur; the total loss due to decay alone having been estimated to cost the nation over 400 million dollars annually, and to be equivalent in standing timber to almost two-thirds of the annual growth of new wood in the United States.



Encouraging results have been obtained with antiseptic dips and sprays for the control of blue stain, a fungus defect in lumber causing an estimated annual loss of Ten Million dollars. Heavily stained boards typical of untreated sap gum lumber are shown in comparison with bright lumber dipped in one of the most effective treatments.

Undoubtedly some of the present damage due to wood-inhabiting fungi is either unavoidable or the prevention of it would require control measures that are impractical. A large part of the loss, however, can be prevented either through preservative treatment or by adopting improved methods involving little additional expense and only slight modifications in current handling and storage practices. Preservative treatments have already demonstrated their value in lengthening the period of service utility of such products as posts, poles, ties, piling, mine and structural timbers, and have permitted the use of inferior woods where durable species, now unavailable or costly, were required formerly. Improved handling methods are accomplishing much in the way of reducing losses in lumber and dimension material and in furniture, vehicle, cooperage and veneer stock. In the course of recent investigations in the Gulf States Region encouraging results have been obtained with antiseptic dips and sprays for the control of sap-stains, molds, and possibly decay in stored lumber. Treatments already revealed give promise of being far superior to current stain preventives on pine and of having a wide field of usefulness in the hardwood industry as well. Tests of spray and end-coating materials are showing possibilities of yielding efficient treatments for the control of stain, decay, and other seasoning defects in stored hardwood logs. In the case of building deterioration, inexpensive changes in the design of the structures are all that is needed in many instances to reduce the danger from damage to a negligible point. The common faults where losses occur lie in providing insufficient ventilation beneath the buildings and in placing untreated wood under conditions favoring the absorption and retention of moisture. A proper appreciation of the nature of deterioration and the application of preventive measures already established will aid materially in eliminating losses from this source.

Studies contributing to our knowledge of the effect of these deteriorating agents on the physical and mechanical properties of wood have been of value in insuring its proper use. The prejudice against pecky cypress has been dissipated largely since investigations revealed the fact that such wood could be used satisfactorily for certain purposes. Relative strength tests have shown that stained wood is suitable for many purposes where discoloration alone is not considered objectionable. Wood in an incipient stage of decay has been found to vary greatly in its mechanical properties, depending on the organism involved. Thus, with some wood-rotting fungi, as the white pecky rot organism (*Trametes pini*), color changes are exhibited in the early stages of decay, but the structural character of the wood is retained. Such infected timber is usable for many structural purposes where moisture and temperature conditions are not conducive to further development of the causal fungus. In case of other fungi, incipient stages of decay are reflected immediately in such pronounced reduction in strength that the infected wood is rendered

valueless for many purposes. Through such studies as these it has been possible to so select the uses to which specific woods are to be put that a maximum period of service utility is obtained.

Wood is an economical and permanent structural material if properly used, and each person handling or using wood has the individual responsibility of securing the maximum service from it. The proper use of our forest resources demands that preventable waste and loss be eliminated, and this can best be accomplished through research directed at the causes and the development of feasible methods of control. It is gratifying to note that wood-using industries are entering into the field of industrial research by establishing investigative units for the study of their own specific problems. The combined efforts of private, state, and governmental agencies should assist greatly in insuring the intelligent utilization of wood products and thereby dissipating unwarranted prejudices against them.



Decay in this southern school three years after its erection necessitated replacements amounting to one-third of the original cost of construction. Such preventable losses as this often result in the creation of unwarranted prejudices against wood.

THE FORESTRY CLUB



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THE object of the Forestry club is to promote general and academic interests of all forestry students, to stimulate interest among the students and the faculty of the University and the people of Minnesota, and to help mold a proper professional attitude among forestry students toward their chosen profession.

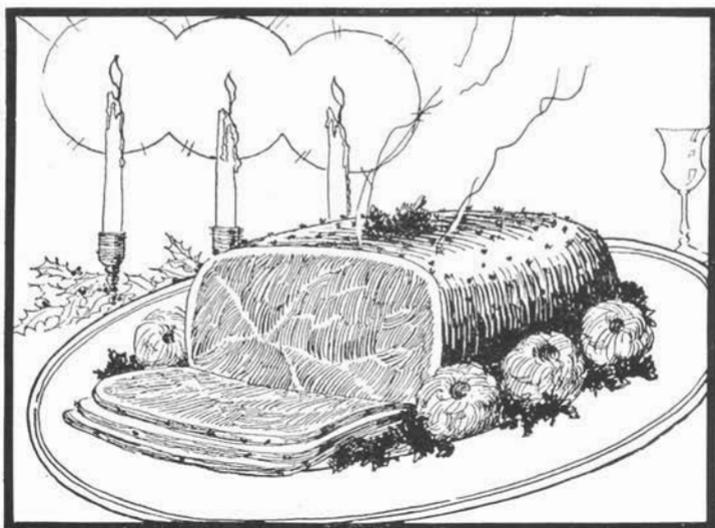
Any student registered in the Division of Forestry is eligible to membership in the Forestry club. Meetings are held once a month and two dances a year are given.

The first meeting of the year is a bonfire affair held in a lagoon near the campus. This is a very informal affair to which all new students are especially invited so that they may become acquainted with the upperclassmen and faculty.

A prominent speaker is secured for each meeting. The policy of the present year has been to secure speakers from various parts of the world, to speak on subjects of their own choosing, in an effort to broaden the interests of the foresters.

THE 1930 FORESTRY CLUB BANQUET

ERNEST DAHL, '31



THE fifth annual Forestry Club Banquet was held March 12 at the Leamington Hotel, Minneapolis. The attendance was the largest in the history of the function, over 150 guests being served.

The guests assembled at 6:30 and a splendid roast duck dinner was served. An orchestra furnished entertainment before and during the meal.

Dr. Henry Schmitz, head of the Forestry Division, acted very ably as toastmaster and introduced the following speakers:

Ray Chase, State Auditor, delivered the main address of the evening; his topic being "A Forest Policy for Minnesota". Following Mr. Chase, J. C. Lawrence, Assistant to the President of the University, spoke on "The Most Over-Rated Word". Other speakers were Grover Conzet, State Forester; J. B. Taylor, Supervisor of the Deer-lodge National Forest; Harvey Blodgett, an alumni representative, and several student representatives.

The first Forestry Club Banquet was held in 1926 and has now become one of the firmly established traditions of the Forestry Division. The purpose of this gathering is to bring the students together and foster the feeling of unity and good fellowship which should exist among these followers of the forestry profession. The 1930 Banquet surely fulfilled this purpose.

Weston Donehower acted as Chairman of the General Arrangements Committee in charge of the Banquet, and to him we owe our appreciation of its success.

Gopher Peavey Staff 1931



LYALL E. PETERSON
Editor



JOHN FRY
Business Manager



CLARENCE EVENSEN
Circulation Manager



HARRY ADAMS
Associate Editor

STUDENT LEADERSHIP

LAST year with most of our "hard times" still in the offing, the Gopher Peavey realized a small profit. At the suggestion of one who has a vital interest in the forestry division, a proposal for a Student Leadership award fund was made at a meeting of the Peavey Board. In short this award was made a certainty by setting aside a fund; the amount of which will be added to in the future, and the interest from which will come a sum necessary for the purchase of a suitable award for the outstanding leader each year on this campus.

The following are excerpts from a letter sent to the Forestry Club by Dean E. M. Freeman.

"Thru the Gopher Peavey you have established a fund to provide for a medal to be granted each year for the outstanding student leadership in the whole college. The Freshman Foresters and other groups have joined in support. You have in a generous manner placed the selection in the hands of a faculty committee, with no limitations or restrictions whatsoever.

"That you have seen fit to couple with this medal my name gives me a feeling of pleasure and gratitude which I can not possibly find words to express unless it be the simple and sincere statement that I can think of no award or honor conferred in our whole college life for which I would rather be remembered than this Medal for Student Leadership.

"I hope that my own future service may justify the great confidence and honor that you have conferred on me in naming this award."

Very sincerely yours,

E. M. FREEMAN,

Dean, College of Agriculture, Forestry, and Home Economics.

THANX!

SOMEBODY once voiced a universal sentiment with the words, "Money Talks." Sometimes in my "good will on earth, etc." moments I wonder at the truth of that quotation. Surely money does not buy the quality of this book. The body of this Annual has been made possible by means of kind contributions from a number of students and alumni. There are others, however, who perform the menial tasks and go their way unsung. Without cooperation, such as theirs, we would be sunk. For this reason it is only fitting to mention such students as:

Harold Engstrom, who has been largely responsible for student subscriptions;

Dorothea Cahill, who collected and typed much of our alumni information;

Jack Englesby and Alice Stuart, who were kind enough to do much of our typing for us.

Let's have some more cooperation next year!

EDITOR

IN MEMORIAM

When the smoke puffed skyward from a burning cabin on the shore of Sand Point lake during a chill day last December taking with it the soul of the late Charles L. Gillman all of us lost something. Something not measurable in mathematical or monetary standards nor yet a tangible reality, but something far greater, and known best to those that have that inner feeling that can only be appeased by the murmur of the pines, or the limpid lapping of soft waves on a sandy shore, or the long lone howl of a wolf, or perhaps the muggy smugness of a little cabin when the northwinds blow, or yet again the honk-honk of our well known friends as they wedge their way northward in the first springy days of late winter. Just what it is we cannot say but no one will deny that close bond of brotherhood to which we are all drawn by these meaningful things of nature. The title of Captain he well earned in the world war but we always thought of him as Captain not on account of his military attainments but rather because he was a true Captain of our out-of-doors loving brotherhood and certainly no man born was ever better suited to this position.

"Cap", as he was known to his fellow men of the Forestry School was close to being our ideal. He knew the out-doors as we wished to know it, he could handle a canoe in rough water, mush a dog team with the best, knew when, where and how to catch fish, shoot the biggest buck, or get a picture of a young moose. All these things and many more were mere incidents to him, amassed through years of contact with the evergreen clad portions of our state.

Around school Cap was always more or less aloof, probably only exemplifying his disgust for man made institutions in general as compared with nature's books as he understood them. School was a means to an end, something to be done with so that he could quicker get back to the out-doors. At our spring camps at Cloquet and Itasca Park was where we really got to know him because there we were closer to each other and closer to nature. Those who were there will recall an incident connected with our course in "Bugs" when after much figuring our instructor arrived at a figure based on geometrical progression figured from the fecundity of a certain moth. The rest of our results agreed with each other but disagreed with his. The instructor justified himself by saying "figures don't lie",

to which Cap instantly retorted "Maybe not but liars figure". It is hardly necessary to say who the laugh was on that time.

Soon after graduating Cap located in his camp near the boundary where he spent most of the time up until his death. His cabin was on Sand Point Lake in the Superior National Forest in a picturesque situation midst a stand of red pine and spruce. In the interior of the small neat cabin, which contained only a small stove, a short bunk fashioned of wood, a low table furnished with a portable typewriter and a file for papers where he produced the many writings which were read throughout the nation by sport lovers.

Amidst the wilderness background he lived a vigorous life alone with the exception of his big white malmute. He enjoyed visitors to his camp and Forest Service men and occasional travelers were assured a cordial welcome. He made frequent trips to Crane Lake Trading Post for supplies and once while returning alone from a trip to the post for mail and supplies his motor canoe capsized and sank when it struck a partly submerged log. Cap, in his matter of fact way, swam to shore, made his way to the Crane Lake Ranger Station and spent the night there with Stevie Linstrom, Class of 1927 who was ranger in that District.

J. W. Trygg relates an amusing incident that happened in the fall of 1926 when Cap decided to go down to Minneapolis for the Holidays and serves to show that Cap was always ready to meet an emergency. A heavy snowfall came the night before Cap intended to leave and all the fellows around the station felt kind of bad to have to tell Cap when he arrived that it would be impossible to go on because all of the roads were blocked for twenty-five or thirty miles. When informed of the conditions however Cap shrugged his shoulders and kept on going with his dog outfit with utter contempt of the idea that a little snow should stop him.

Cap's friends in the north country could relate many other instances where his resourcefulness saved the day. Ironical it seems that his mutual friends, the trees and feathered and furred creatures, should have to stand mutely by and witness his destruction by the very enemy from which he had saved so many of them.

Forester, sportsman, woodsman, friend of all was he
May the Gods be kind to such a lover of a tree.



THE ROMANCE OF THE FOREST

BY ALF NELSON, '31

*This is the forest primeval. The murmuring
pines and the hemlocks.
Bearded with moss, and in garments green,
indistinct in the twilight,
Stand like Druids of eld, with voices
sad and prophetic,
Stand like harpers hoar, with beards
that rest on their bosoms . . .*

AND so comes the evening, a rosy flush still on the mountains. And soon, framed by trees overhanging, the evening star deep in its setting. The first faint breath of night stirs the shadowy leaves, whispering and talking among them. And now moonlight glows on the mountains, bathing the noble monarchs in whiteness. And those in the valley mutter and murmur darkly of mystery, might and sadness. Night and the forest—

Since time immemorial has night spread its darkened mantle on forest and mountain alike, and so also to be followed by the rosy fingers of dawn. The passing of the long night and the birth of a new day herald the coming of the pioneer woodsman. To him the forests seem a haven and lurking-place of the redmen, preventing him also from tilling the soil. So rings his axe throughout the day and with it the passing of the primeval forest. As day follows night so also comes new hope, new joy to the forest. Amongst the cuttings and debris are found the new offsprings, perhaps to become as mighty as their predecessors. Since pioneer times in Acadia have come and will come new forests, if man so desires. As century has followed century so also have new forests been growing and with it a new introspection of the forest; the value to mankind of nature's endowment; the foundation of a nation. No more does the lurking sav-

age menace from his woody protection and the woodsman fell the forest to dispell him, but now his axe rings forth, a clarion betokening the building of a nation.

The sunrise of another day shows to the west a forested country, extending to opposite ocean. From this came the wood of the nation, the source of American greatness. And so began a new country, a country unparalleled in its progress, a country of life and hope. Little did the early Acadians dream of this vast forested land as being some day as great as that from which they descended. To them this was a land of forest, of Indians, and vast regions which they knew not of. And yet a land bountiful in its blessings, a land of happiness where they and their descendants tilled the soil, built their homes from nearby forest, lived in peace and contentment, asking nothing more.

Two centuries later a man stood on a high peak of the Cascades. Below him, merging with the horizon, vast forests of majesty and beauty lay spread before him, like some deep mossy carpet. The immensity and beauty of this great store of timber would be printed on his memory for all time. The work of ages lay spread out before him; unconscious labor of the artisans of the forest. And yet, was this not all for a purpose? The beauty and magnificence of the forest could not be the only reasons for its creation. And then in a few short months a company of men, stalwart and hardy, made their way through the forest. Soon sounded the ringing of axes and almost overnight log buildings were erected, sleeping and eating quarters for the men, outbuildings for the animals and equipment. At daybreak the camp was aroused, the men all with a single purpose—food. Then into the forest goes each man with his axe. A giant tree is selected up which climbs the form of a man, like some insect clinging to the spar tree. Soon the mighty top crashes to earth and wires and lines are attached, then commences the skidding of the fallen giants from the forest. And off in the distance, in the valley between green mountain walls, a faint spiral of smoke is visible and another group of men toiling that the rails may be laid and the logs hauled out. And so this labor continues until nothing is left but a desolate waste; the broken, scattered branches and debris telling of what has taken place. But soon appears the next generation of the forest scattered throughout the region, fighting for life and growing beautiful again inside of a century. And with it grows the nation of homes and industries made possible by this endowment.

It is assumed that there will always be a great need for the forest. Certainly in turning over the pages of American history we find this fact self evident. It is not so much necessary to mention the benefits and blessings of the forest, for we know them so well, as it is to let our thoughts dwell on the future. The future of our country with relation to our forest resources brings in certain questions of conservation and protection. Certainly it does not mean that we must

deprive ourselves of their use, as conservation implies the correct use of the forest, but rather the use as exemplified in the words of Theodore Roosevelt:

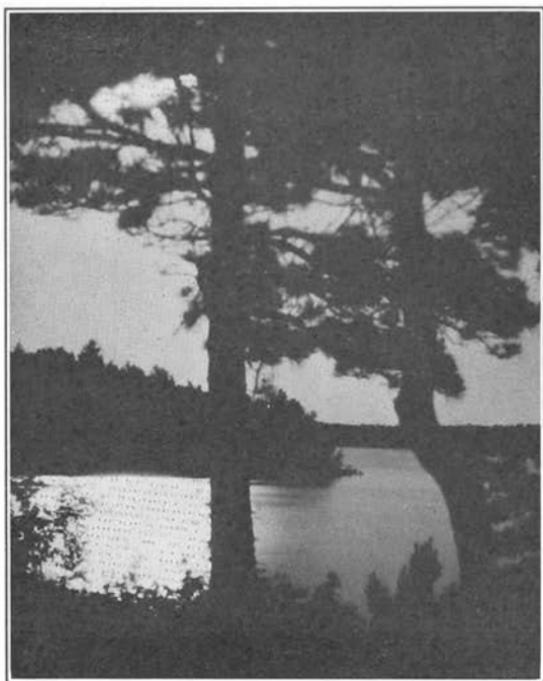
“Wise forest protection does not mean the withdrawal of forest resources, whether of wood, water or grass, from contributing their full share to the welfare of the people, but, on the contrary, gives the assurance of larger and more certain supplies. The fundamental idea of forestry is the perpetuation of the forests by use. Forest protection is not an end of itself; it is a means to increase and sustain the resources of our country and the industries which depend upon them.”

The romance of our forests is the romance of our nation. From the soil hath all things come, a product of life, built in and impregnated in the very fibre of our beings. For the forests man has nothing but affection, friendship and confidence. Has it not been the greatest element of man's development from the ox-cart era of our picturesque past to the present era of swift transportation, great cities, and nation of homes. The epic romance of America—the adventurous subjection of the forests of the primitive wilderness to the populating, upbuilding and enrichment of this great land.

The romance of the forest waived to us in Longfellow's lines bring something of the intrinsic worth of the forest, something more than its monetary value so much taken for granted. The sighing of the pine boughs as breezes touch them. The snow covered firs, drooping and covered as though with a burden heavier than their strength will bear. On moonlight nights when silver shafts paint the forest floor in patches silver and gold, and far in the distance on some wooded ridge the howl of the timber wolf. Or perhaps in the valley between mighty forest walls a lake shimmering in the moonlight, quicksilver alive with reflections and movement. And perhaps on closer approach a timid deer and fawn standing and drinking from it, only to dash like fleeting shadows into the cavernous blackness of the forest. A campfire of resinous pine, crackling and glowing between tall conifers, their staunch boughs forming a covering overhead. Here may men commune with nature once more, bringing feelings of comradeship and a stirring of ones inner nature so difficult to describe, yet so tangible as to send numerous armies of men to the woods, seeking rest and recreation, health and beauty.

Recreation, health and beauty are truly blessed gifts of the forest. The tired business man fatigued from his daily duties finds solace and health in the cool, dark forest where his mind and body are at rest away from city turmoil. Innumerable are the health giving qualities of the forest. For restfulness and peace of mind, for contentment and solace, and for cheering and renewed vigor, go to the forests. Where you find the forest there also will one find hunting,

amongst tall conifers where the ground underfoot is springy with fallen needles and every lurking shadow seems the target. Fishing in shimmering lakes where the forest grows to the waters edge, or in swift flowing streams where the long arms of the forest touch overhead. Canoeing on lakes of glass, where white clouds overhead resemble swans mirrored in the blue water below. Or camping amongst tall pines; sentinels of your safety, where at night their gentle sighing lull one to restful slumber. These things are blessings to mankind, ordained by divine purpose, let us perpetuate them for all time to come, that they who follow in our footsteps may also know of them.



*"A tree and a horse and a friend
These three at the journey's end
Will heal; or if there be
Only a friend and a tree
Still if fate grants not even these two,
A tree—will do."*

—WILLARD WATTLES.



C. E. ANDERSON "*Andy*"
 Forestry Club (Treasurer 1930)
 Tau Phi Delta
 Alpha Zeta
 Xi Sigma Pi
 Summer Work
 Bitterroot National Forest
 California Timber Survey



FRANK ANDERSON "*Porky*"
 Peavey Board
 Forestry Club (Vice President, 1930)
 Summer Work
 Kootenai National Forest, '29-'30



CHARLES BEARDSLEY "*Kelly*"
 Forestry Club (President 1930)
 Tau Phi Delta
 Ag. Student Council
 Interprofessional Fraternity Council
 Summer Work
 Cascade—Idaho
 Coram—Montana
 Porterville—California
 Nevada City—California



EDWIN J. BENDER "*Slim*"
 Tau Phi Delta
 A. O. T. C.
 Gobblers
 Forestry Club
 Summer Work
 Forest Service in Oregon

ELDOR N. BJORGUM "*Gus*"

Forestry Club
Baseball '27-'28'29

STANLEY J. BUCKMAN "*Buck*"

Business Manager, Peavey '30
Tau Phi Delta
Xi Sigma Pi
Alpha Zeta
Ag. Board of Publications '29-'30-'31
Summer Work
McGilliso-Gibbs Pole Treating Plant
Curtin-Howe Corporation,
Timber Preservation Engineers

DONALD W. CAMPBELL "*Soup*"

Duluth Jr. College '28-'29
Forestry Club
Summer Work
Flathead National Forest

MAURICE DAY "*Midway*"

Xi Sigma Pi
Forestry Club
Junior Corporation, 1930 Treasurer
Summer Work
Flathead National Forest,
Trail Work
Minnesota Forest Service—Public Relations





FRANK DOLENCE "*Joe*"
 Forestry Club
 Summer Work
 Fire Protection Selway National Forest—
 Idaho
 Portage Work—Minnesota



WILLIAM GRADY "*Bill*"
 Punchinello
 Summer Work
 Stem Analysis—Minnesota
 Soil Analysis—Minnesota
 Blister Rust Eradication



BERNARD J. HUCKENPAHLER "*Barney*"
 Forestry Club
 Summer Work
 Forest Service—Idaho
 Entomology Study at Appalachian Forest
 Experiment Station



ROBLEY HUNT
 Xi Sigma Pi
 Forestry Club
 I. M. B. B.
 Summer Work
 Forest Service—Washington, Idaho

AATOS T. HUHTALA "*Hoot*"
 Tau Phi Delta
 Gobblers
 Swimming 4, 3, 1
 Summer Work
 Forest Service—Troy, Montana



ALEXANDER KARKULA
 DeMolay
 Forestry Club
 Freshman Football
 Freshman Basketball



HENRY F. KEEHN "*Abe*"
 Tau Phi Delta
 Union Board of Governors
 Forestry Club
 Gobblers
 Summer Work
 Forest Service—Libby, Montana
 Forest Service—Warland, Montana



LEE K. MOORE "*Leakey*"
 Forestry Club
 Summer Work
 Blister Rust—Idaho





ALF NELSON
 Xi Sigma Pi
 Forestry Club
 Scabbard and Blade
 Cadet Officer's Club
 Summer Work
 Lolo National Forest—Montana
 Superior National Forest—Minnesota



CLARENCE E. OLSON "*Ole*"
 Tau Phi Delta
 Xi Sigma Pi
 Alpha Zeta
 Forestry Club
 Gobblers
 Summer Work
 Forest Service, New Mexico
 B. P. I. N. North Dakota, Montana



RAYMOND L. OSBORNE "*Doc Oopus*"
 Tau Phi Delta
 Gobblers
 Forestry Club
 Summer Work
 Towerman, Superior National Forest
 Forest Mapper—Minnesota



LYALL E. PETERSON "*Vendome*"
 St. Olaf College, '25-'27
 Xi Sigma Pi
 Alpha Zeta
 Forestry Club
 Peavey Board, '30-'31
 Peavey Staff Editor, '31
 Summer Work
 Timber Survey—Oregon

CHARLES RANDALL "*Nap*"

Vice President, Forestry Club 1929
 Peavey Board 1928
 Peavey Staff 1928
 Steward Junior Corporation 1930
 Summer Work
 Trail Crew Work—Selway National
 Forest
 Station Fireman—Lolo National Forest



MILFORD T. RIGG "*Fatty*"

Tau Phi Delta
 Forestry Club
 Gobblers
 Varsity Baseball
 Intermural Basketball
 Summer Work
 Alabama National Forest
 Wenatchee National Forest—Washington



CLIFFORD RISBURDT "*Mac*"

Tau Phi Delta
 Forestry Club
 Summer Work
 Lookout—Selway National Forest, Idaho
 Timber Cruising, California
 Pend Oreille Forest, Idaho—Forest Guard



PAUL ST. AMANT "*Frog*"

Xi Sigma Pi
 Forestry Club
 Summer Work
 Columbia National Forest,
 Washington, 1929-1930





ROBERT ST. AMANT
 Forestry Club
 Xi Sigma Pi
 Summer Work
 Angeles National Forest
 Kootenai National Forest



DONALD STEWART "Don"
 Tau Phi Delta
 Phi Tau Theta
 Silver Spur
 Student Council 2-3
 Punchinello
 Forestry Club
 Editor Gopher Peavey '30
 Summer Work
 White Pine Blister Rust Agent in
 Minnesota



JEROME H. STOUDT "Skinny"
 Xi Sigma Pi
 Forestry Club
 Summer Work
 Kootenai National Forest, Montana



WAYNE SWORD
 Hibbing Junior College, 1928-29
 Forestry Club
 Summer Work
 Guide—Minnesota



EDWIN C. NILES "Ed"
Forestry Club
Tau Phi Delta
Summer Work
Black Feet Nat. Forest



ARTHUR SCHNEIDER "Suzanne"
Forestry Club
Xi Sigma Pi
I.-M. B. B.
Summer Work
Lookout and Fire Prevention Work—
St. Joe National Forest



ERNEST WELLBERG
Forestry Club
Summer Work
Flathead Forest

DONALD GRAY "Don"
Ag. Board of Publication
Alpha Zeta
Xi Sigma Pi
Sigma Nu
Wing and Bow
Summer Work
White Pine Blister Rust
Land Economic Survey

CHARLES KNOBLAUCH
Alpha Zeta
Student Council 1930
Xi Sigma Pi
Alpha Gamma Rho
Summer Work
Fire Prevention, Angeles Nat. Forest

FRANK FREDERICKSON "Ben"
Tau Phi Delta
Forestry Club
I.-M. B. B.

ARTHUR MAYER "Shaggy"
Forestry Club
Summer Work
Blister Rust

WEBSTER STERBA "Capone"
Forestry Club
Summer Work
Blister Rust—Idaho

HARLEY JANELLE "Ape"
Forestry Club
Summer Work
Mt. Baker National Forest

ERNEST DAHL "Pee Wee"
Gopher Peavey, Associate Editor (3)
Forestry Club, Secretary (3)
Tau Phi Delta

WHERE DO WE GO FROM HERE?

By ARNOLD O. BENSON, 1910

AT THE outset let me state that this article answers no questions. Moreover, I am not content with merely putting the title in the form of a question, but either directly or indirectly I continue raising questions throughout the article. My purpose is to attempt to focus attention on some of the problems associated with the utilization of forest products.

The trend in quantity consumption of forest products is a problem of deep mutual interest to the lumberman, wood fabricator, and forester. Big consumption means big business for all; small consumption means a broken lumber industry—and foresters selling bonds. In their enthusiasm for better silviculture, success in fighting insects, disease, and fire, and for other activities that tie in close to the woods foresters are often inclined to lose sight of or underestimate the importance of utilization problems. Silviculture without utilization is futile. Good forest practice on a large scale is feasible only when there is an outlet for the products of the forest. Forest management is the means to an end, that end being utilization.

With these prefacing remarks let us consider the United States per capita lumber consumption figures. Along about 1909 our lumber industry hit the high peak of production with a reported cut of 44 billion board feet, equal to 484 board feet per capita. From this high point there has been a decided decline. In 1928 the reported cut was only 34 billion feet, equal to 283 board feet per capita, a decline of 42 per cent. Startling! Yes, indeed. And where do we go from here? Lumbermen and consumers with heavy investments in timber and wood manufacturing equipment are concerned and worried; economists are puzzled. On the basis of present knowledge no one is going to answer the question. Nevertheless it is interesting to speculate on what may happen, for at once one is led into a maze of absorbing factors that involves every angle of utilization. Obviously, in an article of this length it is only possible to indicate how one naturally proceeds in searching for a solution.

What are the factors that are responsible for the consistent decline in per capita consumption of forest products? Offhand one might say that depletion of supply, price, cessation of development, inroads of substitutes, and better methods of utilization are the more evident causes. The first three of these will be dismissed with brief comment. Depletion of supply is no argument, for as yet there has always been an excess. The country has not reached a stage where development is at a standstill. On the other hand, it is true that during the period of this decline there has not been the extensive agri-

cultural expansion with its attendant demand for timber that there was prior to or about 1909.

Price undoubtedly has had some effect on demand. With reduction of readily accessible timber close to the heavy consuming districts producers have been obliged to exploit less accessible timber at increased costs. Such costs together with longer hauls from mills to markets have been reflected in lumber prices. For instance, the transportation charges alone on West Coast timber delivered to Minnesota farmers are as much as the entire cost of lumber that the same buyers formerly obtained from Minnesota mills. However, comparatively speaking, lumber as a construction material has not been prohibitively high, so price alone does not account for any appreciable reduction in demand.

Wood Substitutes

Even the most casual observer recognizes that in substitutes lumber has real competition and that during the last few years the inroads of substitutes must have had a pronounced effect on lumber demand. In large buildings he sees little evidence of wood. Steel, tile, composition stone, composition flooring are commonplace. Even interior trim, window frames and sash, and much furniture are of steel. Little wonder then that the man on the street is becoming wood substitute minded.

What has taken place in construction is also strikingly apparent in products of manufacture. Steel auto bodies, steel farm equipment, steel railway cars, steel toys, steel golf shafts, steel and concrete fence posts, and metal airplanes are but a few of the rather recent developments that indicate the wide range of uses where wood has lost ground. How long is the substitution to continue and how much further will it be extended into new fields? About as far as one can go with assurance is to say that for the uses where substitutes are better and cheaper than wood they will and should stay. Where wood is more satisfactory eventually it will be the accepted material. Where wood and possible substitutes are about equally satisfactory the buyer's choice will depend largely on the aggressiveness of distributors of the various competing materials. This much can be said. Clever advertising and high pressure salesmanship have already forced substitutes into some fields that legitimately belong to wood. To regain these markets is going to be no simple task. Resting on past laurels will not do it. It is going to mean fight. And to fight properly the lumber industry will have to adopt the tactics of its competitors—scientific methods.

At this point it may be well to throw in the brief reminder that wood in the form of cellulose is giving some other materials a real battle. Take, for instance, rayon and lacquers. Almost over night these products have formed the basis for gigantic industries. It is a common observation that our future forests may possibly function not chiefly as sources for lumber but as providers of cellulose.

Cellulose products may be classed among the very few new uses that have been developed for wood in generations. As a factor that

will appreciably influence per capita consumption multiplicity of new uses can be dismissed as improbable.

To mention paper, wall boards, moulded products, and insulation suggests at once some types of uses that have tremendous possibilities.

Forests for lumber is one thing and forests for cellulose and pulp something altogether different. Is it not possible that sooner or later we will have to revamp our ideas with respect to the essentials of good forest management?

Better Utilization

Passing now to an entirely new line of thought let us consider the effect that research in forest products has had on the quantity demand for timber. Research has developed preservative treatments for timber that have increased its length of life in service many fold. Preservative treatment of railway ties, construction timbers, posts, poles, and other items has notably decreased the necessity for frequent replacement. Better glues and glueing methods, better finishes and finishing methods, better joints and fastenings, and better seasoning methods have all contributed toward making wood more serviceable. Development of proper working stresses for the various woods used in the construction fields has enabled a decrease in the amount of timber formerly considered necessary for the support of certain loads.

Better knowledge of physical and mechanical properties has enabled the choice of woods that have given better and longer service for particular uses. Better designed containers have materially increased their serviceability and decreased the amount of wood needed in their construction.

In late years research has developed uses for wood waste that have tended to make one tree serve where formerly two were required. Just one instance of this is the huge plant in the Northwest that will manufacture 1,000,000 square feet of wall board per day from Douglas fir waste that heretofore has been practically useless. Of this type there are several now operating in various parts of the country.

In spite of the economies it has already effected forest products research has barely scratched the field open to it. Without question the continuation of research will increasingly have a marked influence on economy in the use of forest products. Less wood will be required for the same uses, yes. But who in the lumber industry is so short sighted that he does not recognize the ultimate benefits to be derived from a comprehensive research program? The keynote of modern business is Service. Whether the product be shoes, automobiles, steel, or wood it is the commodity that gives best service that gets the lasting support of the buying public.

So at the end of this brief round we are back where we started. Where do we go from here? To use a popular expression "Write your own ticket."



JUNIOR CORPORATION, 1930

Dear Lil:

My dear girl, you're entirely wrong! Yes, entirely! I told you when I left for Cloquet that if the group in attendance there did not measure up to our standards in any way—socially, mentally, morally—that I would return immediately to our old alma mater at Ferdie Falls to complete my education.

A more representative group, sweet Skirt, would be difficult to assemble, and an intermingling of such varied virtues is seldom seen in one aggregation. Lillian, I must try and make you acquainted with them somehow. Many of them would blush, bless their modest hearts, if they even dreamt that I was parading their collective virtues before your discerning dog-stars, so be discrete in dissertating on the delectable doggerel of this document. I am sure, Lil, that after viewing through my eyes their many little acts of kindness, gentleness, and consideration for all mankind, you will realize that this institution specializes in character building—how each man, with his own strong, supple hands, moulds his personality to more closely conform to the wishes and desires of others. There is, according to Aristotle, even vice among saints. Here there is none. The old Golden Rule seems to permeate the very atmosphere here. But read on, my rancid rocquefort, read on. You judge.

First, witness the generosity and kindness of old "Disacharid" Delberg. His betrothed, the luscious Lula, calls him that because he's her complex sugar. What sweeter? Most of the fellows, however, term the dear boy "Help Yourself". But in helping himself he also

helps others. Witness the cold, dreary, rainy day when, braving bronchitis, neglecting pneumonia, and resenting richits, he braved the blustering blasts minus his trusty trousers to bring in ponderous piles of cordwood for the library fire. That's true unselfishness. I've heard him state many times that he was "only a bubble of trouble and care." Even when a canteen of water was accidentally emptied over him when he was in bed, making a sodden mass of the cracker crumbs that had accidentally gotten into his bunk, his philosophical nature did not rebel. A true martyr! But he was not the only one who loved and was loved.

"Unsatiated" Anderson, whose name was really Arline, was a true desciple of Ike Walton. But he was a fisher of women. And what more romantic than to meet your soul-mate in a cafeteria? Oh, the stomachs he braved to bask in her princess-like presence! And the long, long trail a-winding back to the Station in the wee sma' hours! Arline always said that the path of love was strewn with roses, but I don't think roses would wear out shoes so fast. I still think he walked on the same gravel as the rest of us did.

But not all of the boys were in love. The whole group was comparatively broad-minded about everything, but some were more interested in things of a civic nature. There was the case of "Lord Plush" Anderson. He, accompanied by Vendome Pete and "Aldeles" Tysk set about to give Cady's lunchroom a thorough sweeping one evening about midnight. And a thorough sweeping it was! Such civic pride should not go unnoticed, nor was it. Mrs. Cady was much moved at totally unexpected aid, and rewarded them accordingly. They are true representative Minnesotans!

Some of the fellows here must be artists as well as philanthropists. On more than one occasion, when some member of the group is entitled to more than ordinary recognition for some new and different deed, I have seen various fellows get together and exclaim, "Let's draw one for him." How their faces would beam at the joy of giving! It's all too beautiful, Lillian. "Consideration" Wellberg was the recipient of one such token of love. How I envied him! And I do think that anyone who has earned the name of "Consideration" must be worthy of any and all such tokens of esteem. True worth and a deserving disposition cannot go unnoticed.

A peculiar thing happened one evening to some of the fellows who slept out on the porch. "Little Nap" Randall, termed so because of his tendency to take many short sleeps instead of one long one, and "Ambitious" Woolery, whose chief pleasure was in getting out of bed in the wee small hours to awaken the early birds so that they could get the worm, were the principals in the case. They had retired early, and were not yet asleep, when their blankets silently and mysteriously, simply became air-minded and left the bed, flitted out of the porch, and ended up in the fire-place room. It was thought

that somebody had played a "pranky" on them. "Aldeles" didn't think so.

Speaking of the porch reminds me also of "Triple Epidermis" Gray. He was the only man there that ever slept with the hundred-pound concrete eagle mascot in bed with him. We thought he was lonesome for "Hoshapockanie" Brenner, his bunkmate. "Hosh" had a roving spirit, and he and "Battling Moco" Powick, when "Moco" was through with his housework, often took little jaunts around the country in "Hosh's" spirit of '76. One little jaunt took them to Escanaba, Mich. They didn't want to stagnate.

Eight of the fellows stay in a smaller cabin by themselves. It's kind of a contagious ward. One can catch almost anything from them. They caught something from Chantz once, too. If it weren't for "Chaste" Bender I'd hate to think of what might become of those poor fellows. "Chaste" is like a smokechaser's lantern on a dark night—he always goes out. "Two-timer" Beardsley takes all of "Chaste's" teachings to heart. They call him "Two-timer" because everytime he goes out West he takes two timers along for the Ford. Its funny how a tricky little nick-name will originate from so humble a circumstance. "Mac" Risbrudt, another cabin boy, has one consuming desire. He wants to take the radiator off his Ford and make it fly. It very nearly flies with it on. One night, disliking the size of the car, he folded it up into a much smaller package. It took almost the rest of the spring to unfold it. One lives and learns.

"Terrible Elmer" Tesaker was the most wide-awake man in the group. He was very conscientious. It was not all uncommon to see "Elmer" flat on his back trying to puzzle out the proper density of crown cover. Was it not too bad that he got bed sores? He also assisted "Chaste" in bringing the cabin boys to a fitting finish.

"Peewee" Dahl was primarily interested in research. His chief difficulty was to determine what to look for, so he compromised and looked for everything. There are sermons in rocks and babbling brooks and other things, says Peewee. He played tennis like Tilden, loved like Valentino, and laughed like the dickens.

"Midway Maurice" Day was one of those strong silent men. His actions spoke louder and more forcibly than words. I refer you to the black and blue contussions on Vivian's torso. "Midway" was our treasurer, and an able one. He's an old kidder too. Truth will out.

"Side-burn Ben" Frederickson got caught next to something hot without his unguentine, so I'm told, and got his side burned. That could easily have become a tragedy if "Elf" Nelson hadn't been there to help him out. Ben used to go out and cruise forties all alone to demonstrate that he was a triple-threat man. Ask some of the staid damsels that attended the party at Stillwells if he wasn't. "Elf" Nelson was so nicknamed because of his elfin tactics such as smoking

five-cent cigars with Ben and not getting dizzy, and playing lookout tower without a tower, etc.

There was one man who struck terror to the hearts of many who did not know him, though he really had a heart of gold. Cloquet mothers used to frighten little toothpickers into behavior with the words "Northern Sam is in town!" They did not know that Northern Sam Frisby would share one's last sandwich with one. But when Sam was not in pursuit of a higher education, he played tennis, ate, slept, and worked, in a manner which reminded one of Sam.

Hoot Huhtala as his name indicates was continually attempting to turn the night into day. If there was no dance being tossed in town Hoot would have private dances tendered him. He was one of these poor souls to whom distant pastures were always pastured and visa versa. His hobby was the identification and classification of things which needed neither identification or classification. Many of the cabin boys helped him.

And then there was the counter part of the Lewis and Clark expedition pulled off with no less thrills, no less sinking feeling and no less joy of promotion and conquest than permeated the same old dauntless explorers. The object of the party was the searching out and conquest of one "Mapleine" who lived across a treacherous swamp and whose male parent had things in the basement. When the principals are considered there are no reasons for wonder that the expedition was a success. First, as a guide, councillor, and one who has "been thru the mill" came "Vagabond Lover Hunt." He allayed fears. He grinned inside and out. He was hot on the scent. He had been on expeditions before and alone too. Ask St. Amant's Ford. Ask the town of Barnum. Ask a battery that died of jealousy. Next came "straight from the shoulder" "Emma" "Turk" "Paul" "Stark Love" St. Amant. He drove nervously. His finger wave needed fingering. He was hot and bothered. He was strangely happy. And also along went "Small" "Driftwood" Rob St. Amant to get first hand data on the affairs of state. He was experienced. He had picked up driftwood, he had. He knew what a blind date was, he did. He gave vent to hideous laughter than and now. Last, but not least, was "Little Nap" Randall, our faithful steward. He was thirsty too. This was the first of a series of expeditions. And then ore was discovered. The sweet little bunkmates, "Doctor Fu Man Chu" Osborne and "Ape" Janelle, were the pride of the corporation. When they were not trying to garrot each other they were thinking of it. A knife in the back was considered a dandy joke, and strychnine in the string beans thru them into paroxysms of laughter. "Do murder with a smile" was their motto where each was concerned. "Ape" had a mania for doing new and different things. The night he parted "Skinny's golden mop with an arrow brought forth numerous and sundry imprecations from the tribe of Hastings on a luckless Duluth hornet. Skinny did not like his hair parted in the middle anyway—not even with a comb. He never got enough sleep anyway.

When a kid is growing he needs plenty of sleep. And hunting arbutus with one's cousin is hard work. Yet, since "Mohawk" Sterba went into business right next to Stoudt's bunk, the company worked late. And novel advertising! Imagine Meh's surprise when he came home to find his pajamas tacked neatly to the ceiling. But between lectures on "Mother India" and cruising forty's and writing letters to his "nephew" Meh was a busy man.

Another cabin boy was "Shaggy" Mayer. I never did find out how they happened to call him that. He always appealed to me as a particularly smooth little chap. Ever since the day that he leaped in front of Mrs. Stillwell and made a short and frantic speech, I had him marked as a man of his word. "Go-Get-Em" Quick was a chap of like mien. His one failing was to drive Shantz's old Dodge touring at sundry speeds 'til one's plates buckled. "Chaste" kept Quick in trim at all times. Towards the last he was going to the "Y" every night for a shower.

When "Leaky" Moore wasn't triple-tonguing in the kitchen with Stoudt and Sterba and Tysk and Hunt, between cookies, he was shaving. That is, of course, when he wasn't pestering someone. It has been noised abroad that he knows what kind of a noise annoys an oyster. He fixes Fords when time affords, too. It wasn't his fault that they had to abandon it at Dickson, North Dakota. It would have taken an expert to put those parts back anyway.

Another cabin boy was "Verdome-Pete" Peterson. When he wasn't making the golf pro. at Cloquet wish that said pro. knew how to play golf, he was bumping his head in cellars with "Aldeles" Tysk. They will build cellars too low, and if a fellow is kind enough to throw more wood on the fire they had ought to warn him at least.

And then there was Donald Stewart and his Plymouth. He had a failing for Pilgrims just as most Pilgrims has a failing for Plymouths. He didn't land his passengers on a rock anyway. Don had a way with him, and that way wasn't usually in the direction of home. However, he's still alive to pull Ribes. Peewee was his partner in crime.

The "Soup" Campbell—"Yens" Esser combination functioned well until Yens, in attempting to play Finnish football with an elusive Finn at Cheveolet, got thrown for a loss. You can cause me no more roobles, "quothe the Finn gent as Yens picked fragments of Esser from roadway. Yens spit out gravel and staggered home to be taken to the hospital. "Takes more'n a Finn with a Chev. to kill a New Ulm German", quothe John.

"Soup" Campbell was one of the three original (and how!) Duluth Hornets. His specialty was finding new and novel uses for sphagnum moss, and he was an expert in his line. Everything was the "Crime of Kansas" to Soup. When "Little Nap" and "Soup" commercialize their ring talents they will be rich men. Soup likes to ride in Studebakers with punch-drunk women. Tex Rickard was his understudy.

"Atlas" Condie, who bears the burdens of the world, also has a call to fame. His prowess at feats of strength need not be sneezed at; his technique is open to criticism. He flings the warm air with a right good will, and waits for Yens in pouring rain for long periods, while Yens waits for him a few signboards farther along, also in pouring rain. "Atlas" and Dr. Fu spend weary hours in the bush. It's a long time between meals.

"Rev." Porisch was an expert on growth. His growth predictions defy investigation by the most learned. He and Soup were a two-man debate team that never finished their debate. Too bad the quarter was so short.

"Lightening" Nelson, the rollicking rooster of the ranger station, was a sailor boy by choice, he had a sweetheart in every port, and often worked far inland. "Lightening" gave them all a break. His endurance was remarkable, and his successes phenomenal. His most constant playmate was a damsel who scurried at the appellation "Swine-orbit". A romantic name.

Last but not least was, Don "Belch" Ferguson. "Fergie", who became ill when the quarter was still young, which necessitated his departure for the Cities. Fergie expects to make modern history this spring at Cloquet.

Really, Lillion, I must stop. The boys are just back from the barnyard where they have been playing football, and they're spitting oats all about the room. I don't think you're so hot anymore anyway so you can go peddle your carp elsewhere. I think I'll marry Marie Dressler instead.

Yours, I suppose,

Suzanne.

P. S. That goes for your old man, too.

P. S. No. 2. Forgot to tell you about our work. We cruise swamplands, we cruise uplands, we draw maps, we predict growth, we determine yield, we work in the nursery, we confer with our Profs., we eat, we recreate, and, at last, thank heavens, we sleep! We also regret when the quarter is over.

P. S. No. 3. And, Lil, be not chagrined for I too had a finger in the pie, if truth must be known. Add shoe packs and a tennis ball to Suzanne and you get the slyest Greek dancer what ever knocked a clean homer, when we Ferdies played the snarks. Yours till the little green house quits raising pink elephants.

X Ditto & Ditto.

GAME MANAGEMENT

CARL B. KRUEGER

Forest Supervisor, Shoshone National Forest, Cody, Wyoming

GAME management has been a poor relation in the American forestry family for a good many years. We haven't exactly ignored this relation, but neither have we gone out of our way to cultivate it. This distant attitude has undergone quite a change in the last few years, and will probably change still more in the coming years. The change is due to various reasons. Regions formerly well stocked with wild life have been depleted. In other regions, through various reasons, game has increased to the point where we are wondering what to do with it. Various magazines and newspapers have devoted considerable space to matters dealing with wild life, arousing public sentiment. Foresters work in the regions where the majority of wild life finds its home, so they are, or should be, well fitted to assume the lead in matters pertaining to game management.

Recreation is becoming increasingly important in the scheme of life in this country. The wild life present in a region is one of the greatest attractions it can have. Nothing gives the tourist a greater thrill than to see a bear somewhere along the road, or to see an ungainly moose crash his way through the underbrush. Officials in Yellowstone Park say the average tourist spends five minutes looking at some great scenic attraction, and then spends two hours looking at the bears. Large numbers of hunters enter the forests every fall. In the parts of the country where the hunters from the east come to get their big game, the money spent by these hunters represents an appreciable part of the income of the natives. The presence of wild life is a big item in the attractions of the dude ranches. The advertisements of every ranch mention the presence of various kinds of wild life, and the possibilities of shooting them with camera or gun. In every case the wild life referred to is that in the surrounding forests, which are usually National Forests.

The National Forests are the greatest reservoirs of wild life in the west. This is only to be expected, as the forests take in the back country which is the natural range for most species. The mountains are not the natural range for all species now found there. The elk is primarily a plains animal, and has only made its home in the mountains through necessity. Antelope are only sparsely represented on the National Forests because they have never given up their plains home. Management of the game on the National Forests is primarily the responsibility of foresters.

Game depends for food on the forage plants of the mountains. So do thousands of cattle and sheep. Under favorable conditions elk

eat much the same food plants as cattle, while deer are more partial to the type eaten by sheep. Mountain sheep are so few in number and inhabit such inaccessible places that they will rarely conflict with domestic stock. Moose live largely on browse and aquatic and semi-aquatic plants. If any conflict arises over the use of forage it will be between domestic stock and the elk and deer. Ordinarily there should be no conflict. Elk and deer live in the same ranges with cattle and sheep. Common use is the ordinary thing. Ranges used by cattle and horses in the summer furnish feed for elk and deer in the winter. Sheep ranges, being mainly at the higher elevations, are not



used much in winter, but furnish some feed in the spring, summer and fall.

When a range is used so heavily by domestic stock that there is not enough feed left for game, or when game increases to such an extent that it interferes with stock there is bound to be trouble. One solution is to reduce the number of stock, but this is not always possible. Large numbers of ranchers depend on the forest range for summer feed for their stock. Taking away their range may ruin them. After all, cattle and sheep are necessities, elk and deer are luxuries. If one or the other has to go it will be the luxury. Closing certain areas to domestic stock in order to favor game animals is an effective

method. Here again it is a question of game versus domestic stock. In a region dependent on livestock for a living game will be discriminated against, while in another region used for recreation the game will win out. On the Shoshone Forest, one of the important recreation forests of the west, as well as one heavily used by cattle and sheep, 70,000 acres out of 1,600,000 have been closed to the use of domestic stock, this area being in a part of the forest where recreation interests are paramount.

Game may increase to the point where it interferes with various phases of forest management. On one of the National Forests in New Mexico the deer are found in such numbers that they are actually ruining the range. The number of cattle permitted on the range has been cut down, but the increase in the size of the deer herd has offset this. Watershed values are being lessened. Deer are becoming a problem in the forests of Pennsylvania. Rabbits, porcupines and other animals contribute their share to the worries of the forester.

If left to itself the game will increase to a point where the food supply is no longer sufficient to maintain it. The case of the Jackson Hole elk herd is so familiar that it hardly needs mention, and the same is true of the deer on the Kaibab plateau. In the case of the elk herds the shortage of food is caused by a lack of winter range. The big difficulty of game management on the National Forests and National Parks arises from the fact that they have little winter range, as they lie in the higher elevations. The lower valleys which constitute the natural winter range are all occupied by ranches over which there is no control.

Due to almost constant hunting and trapping the numbers of animals that prey on game have been greatly reduced. Mountain lion are almost a rarity, as are timber wolves. Coyotes are still fairly numerous and get their fair share of deer. Bears are not important predators. The numbers of the predators must be kept down if we want any game, but there should be no policy of extermination. Coyotes get some deer, but they also get such pests as porcupines.

So far I haven't mentioned any animals besides the game animals and the predators. Those mentioned form only a part of the wild life inhabiting the forests, although they are the most noticeable part. For every martin we see in the course of a year we will see a hundred deer. The smaller animals form a very interesting and valuable part of our wild life resources. Their numbers have been greatly thinned out by unregulated trapping in the past. On the Shoshone Forest the system is now followed of allotting trappers to a definite territory, which must be approved by the State Game Commissioners and the Forest Supervisor. As far as possible the same man is given the same territory each year, because of this they are inclined to handle it as a fur farm, and will not try to trap it out. It is believed the system is having a definite effect in increasing the numbers of fur bearers on

the Forest. The smaller animals may also come in conflict with man. Beaver are especially apt to get into difficulties. Wherever they have been protected long enough to become numerous they have made themselves felt by plugging culverts, damming irrigation ditches, and flooding roads and trails. All that can be done in a case like this is to trap them out, and here again the fact arises that there is such a thing as an over-supply which must be taken care of some way.

Most of us are just beginning to see what a big field the management of our wild life resources is, and how little we really know about it. We have to learn what the needs of our various animals are before we set out to manage them. What are the forage requirements of elk, deer, or moose? How are we going to allot a range between game and domestic stock, not forgetting to take into account the hundreds of other animals that depend on that same area? Why are deer abundant in one place and nonexistent in another, though conditions are apparently the same? To what point should we reduce the predators, and how will we keep them at that point? Or have we reduced them too much already? How are we going to take care of the cases of over-supply that are bound to arise in the future as they have in the past? The list of whys and hows might be continued indefinitely. There is a big field for research in connection with wild life management, not only the research of the specialist, but the simple fact finding of the man on the ground. One thing is certain, and that is that the attempt to find the answers to some of these questions is one of the most fascinating jobs a person can ask for.



SERMON DELIVERED AT BURIAL OF THE QUIZ

Dear Bereaved Brethren and Sistern:

We are cōngramulated at this unhallowed spot to take our partin' shot at a deceased quiz. Yet, let me temper your hardened hearts, for after all a quiz is like a face burdened with sore teeth, we hate to have 'em around, but we miss 'em after they're gone—especially when we challenge a wedge of cookshack bacon.

What is it that has been our inspiration (outside of the Lodge and Headwaters), what is it that gets us out of bed in the morning (outside of Kangaroo Court), what is it that makes us burn the electric lights, and Jack Fry the midnight oil? Brethren it is a quiz! Beyond a mensuration report, the only thing that will silence Kelly, that will calm the west side of the bunk house is the fear of a looming quiz. Speakin' on the aforementioned subject, perpetuated by Professor Brown, it adds to the deep regret of the day that we have not on hand one such report to make this a *double* funeral.

After a night on the ripplin' waters, 'neath the whisperin' Jack Pines (alias Haven), and sighs, gettin' A's in a quiz is harder than enforcing the "late to breakfast" rule. A quiz alone has kept Gordon Carr from firing his social secretary (?) and writing seven more letters per day, himself.

Yet, friends, later this afternoon when you drowned your sorrow, think, my flock, of the bliss that will be ours after we leave camp and return to the land where birds sing only *one* song, where insects fly unmolested, and where we tread on *grass*, instead of *Carix pennsylvanica*.

Amen

On lowering of coffin (cheese box) say:

Ashes to ashes, dust to dust

If the quizzes dont get you, the "forties" must.

—CLYDE GORMAN.

HYMN NO. 76 BURY ME OUT ON MY FORTY

*Oh, bury me out on my forty
Where the vultures may soar
o'er my grave
Take me to the forest primeval
To the bog where I have slaved NN*

*Wrap me up in a fishnet
To warn all the suckers away
Who chance to draw my forty
With a hope to cruise and survey*

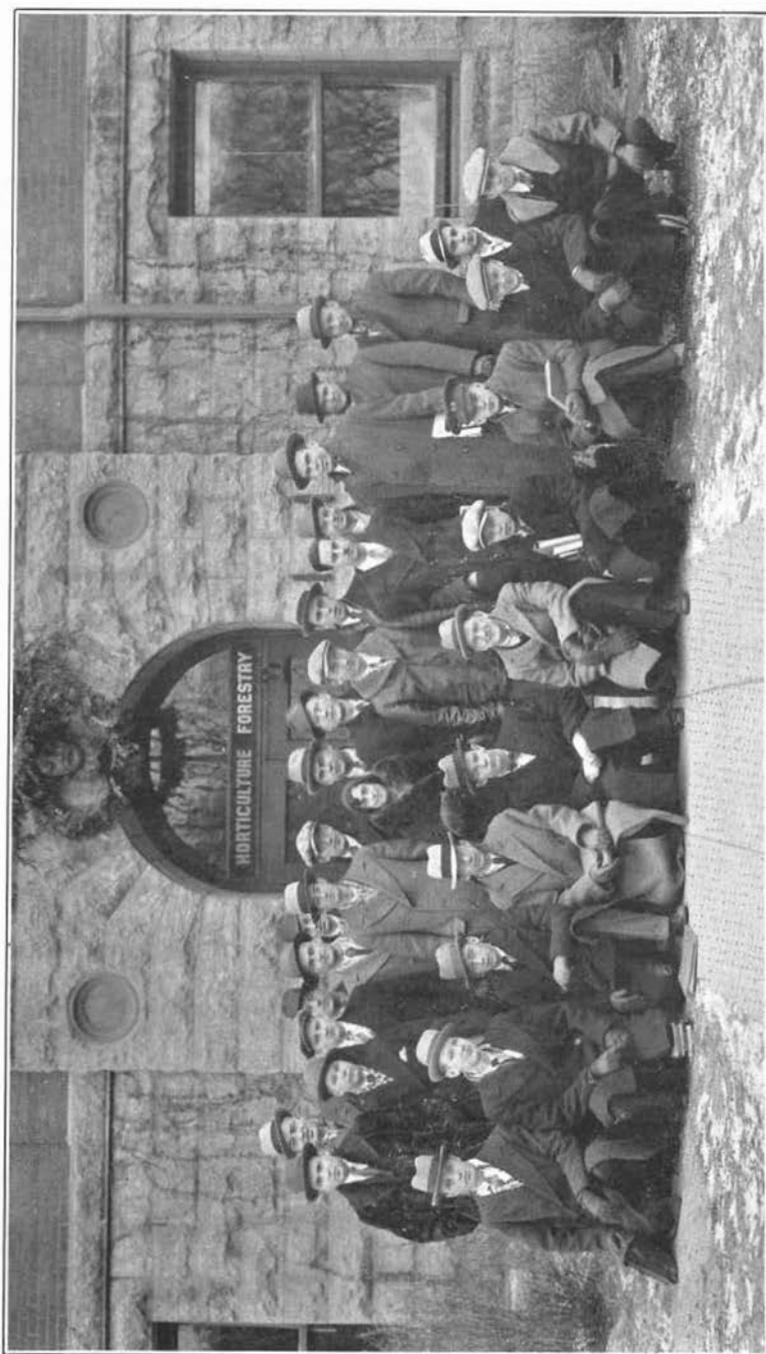
*For here in this forest primeval
By the bubbling typhoid springs
Is a land the Lord has forgotten
Where the lunch saw never rings*

*Oh, bury me out on my forty
And lay me deep 'neath the ground
And mark the spot where you leave me
With a section post I never found*

EPITAPH—

*Here lies the guy who lived to die
The death of a timber cruiser
He gave his all—'twas not enough—
Take heed, you husky bruiser!*

—CLYDE GORMAN.



CLASS OF 1933

THE FRESHMAN CORPORATION 1930

CAMP was over, 'most everyone had pulled stakes. Strange then, that the loons should find competition, on this otherwise romantic evening.

To one looking from the road, the bunkhouse seemed a lifeless silhouette patterned against the moonlit Itasca. Yet, it contained life—if periodic outbursts of vocal revelry meant anything. Ha, a flashlight, it is on the northeast corner of the porch, upstairs. One by one, the torch passed across the face of each man present: Haven, Miley, Wangaard, Nauman, Brown, Colburn, Rholeder, Griggs, Smith, Holgate, and Gorman—a scraggly lot, the lost battallion.

Out of respect to their efforts, one might call it music. At least it was their swan song, since the last sardine had been speared. Far into the night and far into the woods rang their parting words, now with great gusto, now almost soothing. When they sang softly, an accordion could be heard drifting along with the lazy rhythm. There was pathos in them thar words. Tomorrow, they must part; there was no food; it was scatter or perish, every man for himself. As they sang they knew they would never hear each other again—until the fall quarter. They were college students.

Being a member of the party, and sensing the approach of fame, I prepared, on the following day, to take my leave, also my belongings. After a frantic search, I found my Gray's Manual in the library, where some conscience-stricken soul had recently left it. There were some words of long-hand material, wedged between the leaves. Having no time to sort it over, I placed it in my pack, tossed the latter into the sidecar, spun a web of half-inch rope, leaped into the saddle, and headed for the nearest "restaurant".

Later in the solitude and dark recesses of my little hovel, the old homestead, I opened my Gray's Manual, from force of habit (?... There, among the waded material, I found a manuscript. There was no signature, the hand writing was strange, but the contents more strange. It seemed to be a diary or something, an unleashed meandering of the soul, sort of disjointed, like those things usually are. Ask Nauman.

Making light of our sober pilgrimage into the northwoods is a serious offence. I believe the culprit should be identified, caught, and half shot at sunrise. To this end I am presenting what he said.

"Arrived at camp, some walk! Was goin' to get the best bunk, but they all looked the same . . . Have been here two weeks; everything running clicky on our daylight saving time. We had quite a brawl about that but the Sleep Night Boys won out, and we adopted this schedule:



THE COOK SHACK

Cold gray dawn—Get up, your on K. P.; the cook's been beating that damn saw for an hour!

Later—'My bowl is stuck . . . move over . . . you guys who keep coming late . . . tomorrow we lock the door . . . the president says so . . . pass the oats . . . What? . . . well, pass something!'

Still later—'I've gotta wallow in the tundra with "Rosy", where you goin'? . . . With Dawson? . . . Watch out for the woodpeckers.'

Noon (11 o'clock)—The Royal Gorge.

An hour later—Mailman Pete Brown speaking, 'Here's a letter for Fishface Lauer . . . The rest is for Gorden Carr . . . Buck up Kingfish, maybe she'll write tomorra'.

Five seconds later—Where can I find a stand of Jack pine? . . . Where? . . . No, not Haven, I mean that stuff for Cheyney. What do you mean lucky devil? I ran my diagonal yesterday didn't I? Don't let a little thing like a mosquito jiggle your hand compass.'

Eventually—'If you tip this canoe . . . Oh, well, I was going swimming anyway . . . lift it up yourself, I'm going out to the tower . . . there goes Jolly in one of his frog dives . . . ye Gods, first call for supper, I told Evenson I'd relieve him on K. P. What th' devil does he want in Bemidji, anyway?'

6 P. M. (really only five)—'Pass the sour milk . . . Ugh . . . anybody want this?'

My what long evenings we have—'If Gorman wants to play that fool accordion I wish he'd go out to the Country Club . . . Ross must be nailing up some music on the piano . . . Where is who? Johnson? In the library, of course, wait till he comes back and finds the fish in his bed . . . Rholeder is out too . . . oh, some brushpile; let's string his bed up . . . we got electric lights, but Jack Fry is old fashioned. He still burns the midnight oil.'

So-called 10:00 P. M.—'Lights out—what was that noise? St. Elmo (the Prexy) drop the light bulb . . . charge it to the corporation . . . he was only doing his duty.'

Midnight—'Egad, that ungodleigh laugh! Lauer, pipe down! What's the idea of passing candy this time of night, Miley? There is a lake party brewing . . . change that last remark to past tense.'

So it was that every minute of the day was occupied, chartered, and reserved. Yet, there was some variation. On the day we buried the quiz for instance; the parade to and from the tourist park drew many spectators; in fact, it would draw anything. Five minutes before the rites, a din of oaths issued from the dormitory. The parson could not find his sermon. All stood with bowed heads as he sang a cowboy air for a hymn. We drowned our sorrow by a round of water sports. Prof. Brown piloted the scow, filled with tourists, out to the tower, so the wimin could see Dale Saunders dive.

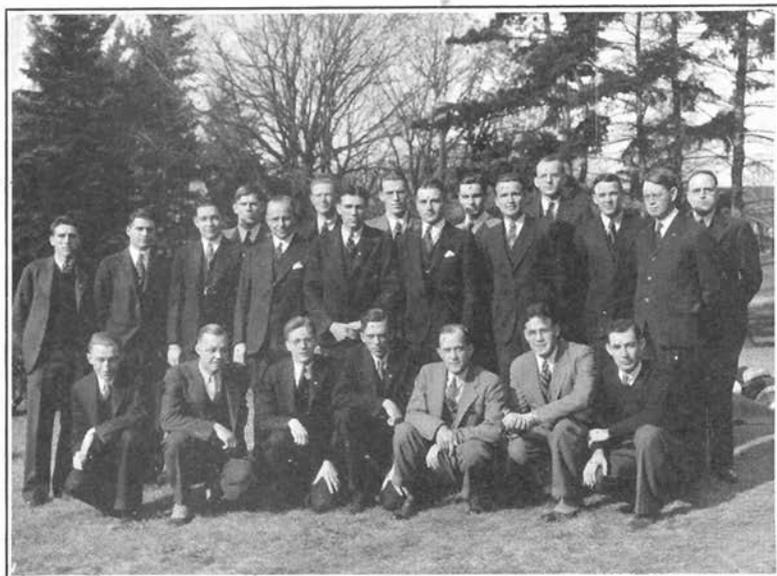
I began to think there was something attractive about our sleeping quarters after all, the way the visitors were looking—but it was just Howy Smith taking a sun bath on the roof.

On Sunday afternoons we played ball. Haven's Ford did most of the work. Colburn should have stayed home and drawn curves for Brown, but he would rather throw 'em at the park.

We had a dance, two of them in fact, and served ice cream in the cook shack—but why bring that up? I don't mean the ice cream, not that, because we had good chow every day (not counting Sunday supper, which was cooked by the K. P.'s). This was probably due to the fact that we had two stewards, one named Bill and the other Alice. One steward bought the food and the other Stuart ate it. But Fred, our esteemed treasurer did the impossible and made *her* shell out."

So you see, brother foresters, that something ought to be done to a fellow who would write all this, reminding us of all those discomforts—it makes me want to go back to Itasca—again.

—Clyde Gorman.



XI SIGMA PI

OFFICERS

Clarence Olson, *Forester*; Robley Hunt, *Secretary*;—*Fiscal Agent*; Donald Gray, *Associate Forester*; Harold Engstrom, *Ranger*; Warren Chase, *Executive Council Representative*

XI SIGMA PI, national honorary forestry fraternity, was founded at the University of Washington in 1908, for the purpose of securing and maintaining a high standard of scholarship in forest education, of working for the upbuilding of the profession of forestry, and of promoting fraternal relations among earnest workers engaged in forest activities. Existing as a local honor society at the University of Washington until 1915, the fraternity adopted a new Constitution and began its new policy of expansion. Due to the wise forethought and conservatism of its founders, the fraternity has developed slowly and carefully until at present there are nine chapters at forestry schools throughout the United States.

The objective in view of this honor society is the stimulation of scholarship in forestry and the bringing together in good fellowship those students who have shown exceptional ability. It is the intention of Xi Sigma Pi to honor the student who is doing good work in forestry and who has a personality that will tend to increase his possibilities for success. The fraternity stands for clean scholarship and encourages forestry activities at the institution with which it is connected by active participation.

The Minnesota Chapter of Xi Sigma Pi was established in 1920 through the efforts of several men, a few of whom remain on the faculty staff at the present time. Progressing steadily the chapter has reached a total membership of one hundred and twenty six men, many of whom are prominent in forestry activities today.

A LOGGER'S LIFE IN THE PACIFIC NORTHWEST

By H. ENGSTROM

IN THIS article I propose to ramble on in a rather unorthodox fashion, commenting on the conditions under which a logger lives and works and perhaps relating a few events based on experience.

A logger is a man who derives his existence, such as it is, by working in the logging camps. Another name often applied to this class of men is "timberbeast". Probably this latter term more appropriately conveys the general public's impression of a logger. We all have the idea that a logger is a big, burly bruiser who chews tobacco, drinks hard liquor, uses strong language, fights at the drop of the hat, etc. All this to a certain extent is true.

As a class I firmly believe that among the loggers one will find more perfect physical specimens, real honest to God big, strong men than other class of laborers on the face of the earth. Some of them are beautifully built, and practically all, big or little, are muscled to a degree that makes the average college student appear like a slender coed by comparison. This, of course, is to be expected from the hard, vigorous out-of-door life which they lead.

As far as tobacco is concerned, the logger is probably no worse off than any other laborer. Most of them use it in some form or other. Snuff is the favorite nicotine of the Scandinavian element, and it is quite likely that if one was to suddenly deprive them of their "snooze" half the camps on the coast would have to close down.

Liquor and women go hand in hand with a good share of the loggers. That combination is, you might say, their main object in life, especially among those who have no families of their own and very likely never will have any.

Strong language is generally conceded to be a noticeable characteristic of men who lead hard rough lives. It seems that such men cannot adequately express themselves without the use of decidedly "off color" terms and expressions. Still many of the loggers under ordinary circumstances use fairly respectable language even though it may not be exactly suitable for drawing room use.

Certain phases of logging are sometimes particularly exasperating and on such occasions a choice collection of cuss words help to relieve one's emotions. I will never forget a really comical sight I witnessed in this respect one bright June morning. I was bucking a fir tree lying along a side hill. In the canyon below me my bucking portner was working another fir. He was a finlander, rather small, quiet, and peaceful looking, but a working fool, nevertheless. I have

acquired the utmost respect for Finlanders. I sincerely believe that they can outwork any other nationality, bar none, and that they also can handle more "snooze" and more liquor than anybody outside of a Swede. The fir this Finlander (Jack was his name) was working on happened to be timberbound. Anybody that has pulled a saw in big timber knows how aggravating a timberbound tree can sometimes be. Jack was an excellent buckler, and thru long experience, he knew all the tricks of the game. In spite of this, however, he could not sink his saw in a certain cut in this tree, either from the bottom side or top. Suddenly he lost his temper and became almost a raving maniac. Throwing his saw into the bush, he grabbed his ax and leaped up on the bole of the tree. He fairly danced in rage for a few minutes, swearing in a mingled jargon of English and Finnish. Then he began chopping and every stroke of the ax was supplemented by fervent cuss words. I stood and watched him, debating whether I should go down and offer to help, but it occurred to me that in his rage, he would just as soon sink his axe into me as he would the tree. Since then I have often thought of Jack and his timber-bound tree, and the thought never fails to bring forth a chuckle.

Another example of futile helpless rage is brought out in the story of a man who beat his saw with sticks because he could not get it started in a timber-bound cut.

In general there are two types of loggers, namely, the transient tramp logger and the "home guards". As a rule the tramp loggers or "camp inspectors" have a healthy contempt for the "home guard" or "stump ranchers". This is due to the more submissive attitude that the latter type are more or less forced to adopt.

The "home guards", because of family ties, or other reasons, are not free to quit their jobs at a moments notice or whenever the fancy strikes them. Many of them live with their families in company houses, or on stump ranches in the immediate vicinity of the logging camps in which they work. They will usually submit to much more discomfort, wage cuts, etc., than will the tramp loggers, because they feel that they are better off staying where they are than to waste time and money moving their families from camp to camp.

When times are good and labor is scarce, and the companies are forced to cater somewhat to the tramp loggers, the "home guards" in many ways find themselves at a distinct disadvantage. For example, when fallers and buckers are hard to get, the "home guards" are apt to be assigned the poorer strips of timber. However when times are hard and production is curtailed, the tramp loggers are the first to be laid off. The companies in most cases try to keep their family men employed as long as possible.

Logging is, I believe, classified as the second most hazardous occupation in the country today. This rating is not the least exaggerated. During nearly two years in the logging camps, besides making

two trips to the hospital myself, I have seen numerous cases of more or less serious injury and several that resulted fatally. Practically every man that has worked in the woods for any length of time has been injured. Broken legs and bruises are common injuries in the rigging crew. Among the cutting crew carelessness or mishaps with the axe and saw account for many of the minor injuries. Falling trees, limbs and rolling logs account for the more serious and fatal accidents. Every man who has engaged in such work can relate any number of incidents in which he was fortunate to escape.

Sometimes accidents happen which are laughable though they might be serious. For example one day my falling partner sat down on one end of a forty foot log, while waiting for me to wedge a tree over. Ordinarily he was extremely careful about what he was doing, but this time he did not notice that the other end of the log extended out in front of the tree which I was wedging over. When the tree hit the end of the log that end went down and the other end up. My partner went sailing up in the air as if he had been shot out of a catapult. Luckily he landed in a soft place, or he might have been seriously bruised. However, the surprised and pained expression on his face when he picked himself out of the brush was better than anything I have ever seen—in the movies or otherwise. At first he considered my laughter rather uncalled for, but finding that he was not hurt he saw the humorous side of it also.

time. The labor turnover is quite neavy—many of the men work less

than a week or two at a time—therefore, one has an opportunity to acquire a good many different viewpoints in the course.

It is interesting to note the different topics of bunkhouse conversation. When the majority of the men in a bunkhouse are American born young fellows who have knocked about a great deal, the main and often the only topic of conversation is women. Many of these young fellows have the utmost respect for a decent girl, but unfortunately, due to the life they lead, they seldom become acquainted with any. Foreigners and older men are in most cases much more reticent about discussing women. Instead they are more apt to relate events of the past or discuss topics of current interest.

Often gifted conversationalists, men with brilliant minds, drift into the camps. In such cases the evenings are never long as one never tires of listening to some of them. Invariably such men are radical in their beliefs and theories and do not hesitate to expound them. I well remember one man who was unreasonably radical. Some of his ideas were really ridiculous. It developed, however, that he had at one time been hit on the head by a falling limb, which, no doubt, accounted for the most of his queer ideas.

All in all, while most loggers agree they lead a dog's life, there is a certain glamor and appeal to it that very seldom allows a man to break clean away. Once a logger always a logger.



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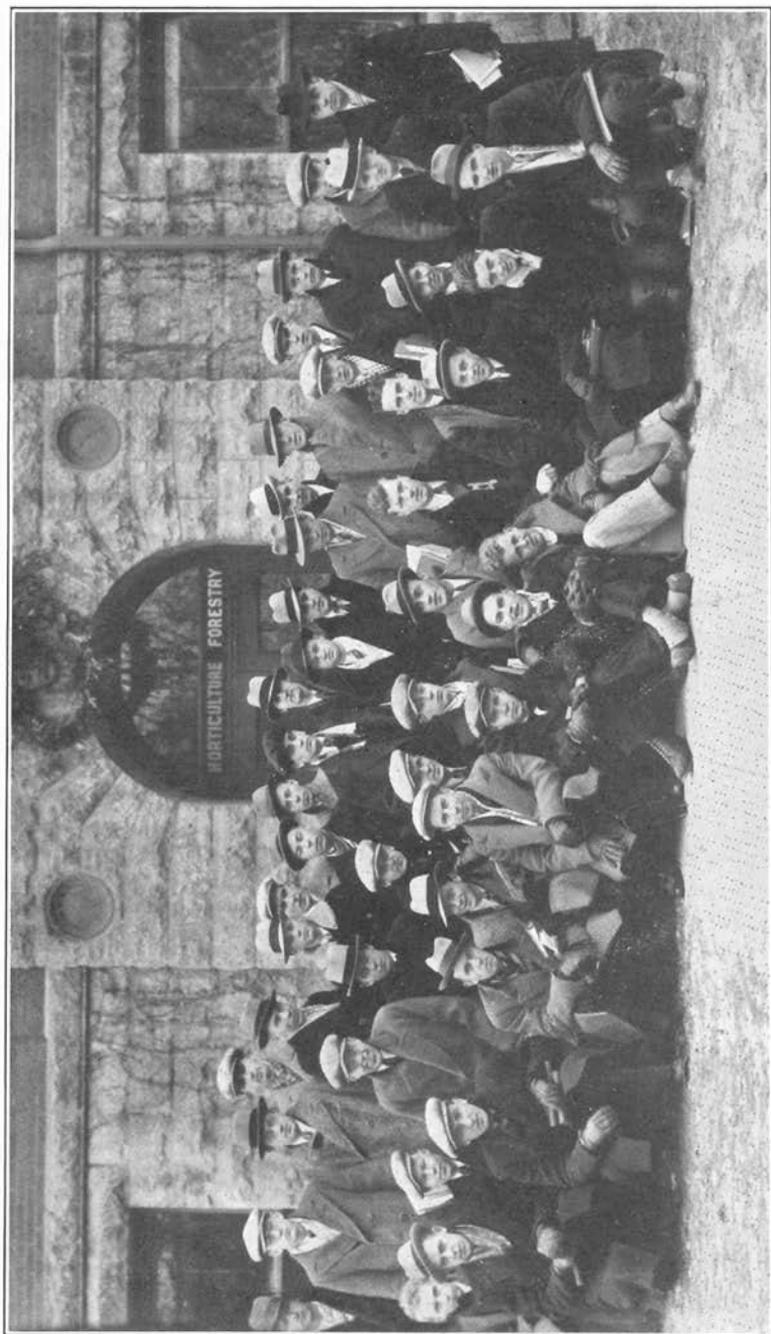
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Tau Phi Delta is the only national social-professional fraternity in the United States. Chapters may be established only in colleges and universities where degrees in forestry subjects are given. The Beta chapter of Tau Phi Delta was established at Minnesota in the winter of 1926.

It is our utmost desire to further the profession of forestry and its allied subjects; to maintain a high scholastic standing and to derive the mutual benefits resulting from the association of its members; both socially and professionally.



CLASS OF 1934

SHADE—FOR THE ASKING

By THAD PARR

"'The world's a stage'—and most of us are only stage-hands."

It is a far cry from the work of riding herd on several thousand acres of timber on a large forest, to the task of playing family physician, dentist, and nurse to a tree or a few trees on the private estate of a wealthy individual. And to the men of the woods who are used to thinking in terms of millions of board feet or several hundred thousand acres of land when timber or forestry is mentioned, the work of the aesthetic forester, or the man engaged in the servicing of trees will seem trivial, even insignificant.

As far as the production of timber is concerned, that is true. Yet some few trees on a private estate may be valued at a higher figure than the timber on several thousand acres of forest land, and are cared for far more scrupulously than any forest timber ever has been. For people, especially in the parts of the country that were first settled, have come to realize in the past few years that trees are not only beautiful in themselves, but materially add to the value of the property on which they stand. And this pertains not only to the owner of the property but to the community as a whole. And the larger and older and in more perfect condition the trees, the greater the value. Thus the care.

Roughly, the work of the man engaged in tree service consists of pruning—which includes not only the removal of dead branches and in some cases the taking out of rotten wood so that a cavity may be allowed to drain and heal over, but bracing and cabling and bolting of weakened trunks and limbs—spraying, feeding, planting, transplanting and moving of plants from the very small shrubs and plants to trees thirty or more inches in diameter. The work is exacting, interesting, and in some cases, thrilling to say the least.

While a forester may work with the problems of a whole forest, a district, or a vast section of the country, the man in the aesthetic field must treat more or less with the cases of individual trees. Insects, soil conditions, exposure, diseases of the wood—and if a tree is to be moved—environment and susceptibility to moving are a few of the things that must be taken into consideration. And that generally by one man or a very small group of men.

The work provides travel aplenty, if one is of a roving disposition. In something less than two years it has taken the writer from Ohio, East through most of the New England states, South to Florida, and back again. To work on the estates of wealthy families in the various sections of the country covered has been an education in itself. Just to observe the differences in people in the different sections is an experience never to be forgotten.

Pruning of trees, especially in the South, where some of the pines run to a height of seventy or more feet to the first limb, offers perhaps more physical thrills than any other branch of the work. In the taller trees it is not uncommon for a man to use two "skinning ropes", each 125 feet long, tied together, to let himself down out of a tree. And few sensations can compare with that of the first swing from one tree to another some sixty or seventy feet above the ground. A man's faith in his rope must far surpass any timidity he may feel at dangling in space with nothing between him and the needle-carpeted clay but a thin and unresisting atmosphere.

We have several times, in the South, pruned as many as half a dozen trees, swinging from one to another, in a forenoon, not coming down to the ground until time for lunch. The process impressed me as a striking example of the manner in which our somewhat hairy and chattering ancestors might have progressed from one tree to another by means of vines, in the humus-covered and time darkened ages of an almost-forgotten past.

For the man who is interested in entomology, the preventing or repelling of insect attacks upon valuable shade and ornamental trees offers an opportunity for practical application of theory that might otherwise go untried.

Private individuals of wealth, and in some cases whole communities are willing to spend the money in exterminating insect pests which would go unimpeded and perhaps little noticed on a large tract of forest. Here, too, exacting care is required. Should a spray material of too great strength be applied to a tree, damage which would be irreparable might be done. Conversely, if the spray solution be too weak then the pest would go unchecked and possible defoliation and ultimate loss of the tree or trees result.

To those of us who are inclined toward engineering, the moving of large trees is probably the most intriguing part of the work. To successfully transplant a small tree requires some knowledge of the work to be done. How much more must be known then, to move trees of perhaps fifteen, twenty, or thirty inches in diameter a distance of several miles, plant them, in some cases under entirely different conditions, and guarantee them to live and grow? And thereby hangs a tale.

In the spring of 1930, an industrial concern building a new plant in the East, needed a considerable number of rather large street trees to complete some of their landscape plans. It was decided to plant American Elms, and Eastern Ohio was the nearest place where trees of the right size and shape could be found in quantity. They were to be ten inches in diameter and would run thirty to forty or more feet in height.

That was late in March.

The trees were located, acquired, dug, canvassed, wrapped in burlap for the entire length of their tops, loaded two on a flat-car, shipped some five hundred miles, unloaded, planted, wrapped and guyed, and were all out in leaf by the end of the first week in May. *The first long-distance large-tree moving job ever to be undertaken.*

It was the writer's privilege to see the last few of the consignment planted and to have charge of the entire lot of trees for the first six month period after planting. And with the care of the trees came the care of the shrubbery.

A volume might be written on the care of those trees. Let it suffice to say that they were planted in a place that averaged about eight feet above sea level, where the soil was of fine clay, the consistency of putty when wet, and hard as fire-brick when dry. It was practically impervious to water and each tree had to be provided with adequate drainage.

Insects came with the leaves. The sprayer was first called into service to quell a riot of Fall Canker Worms that were filling the leaves with such nice little shot holes. The canker worms subsided. They were followed immediately by Spiny Elm Caterpillars that seemed capable of defoliating an entire tree in one day. Again the sprayer: again an absence of worms.

Then, to paraphrase the old silent films, came the drought. Not enough rain from the first of May until the first of November to soak through two inches of mulch around the trees. Artificial watering all summer.

And so it went for six months. Spraying, watering, pruning, thinning, and cutting back tops to conform to abbreviated root systems.

Three trees were lost because of failure of the drainage system to function properly. Two died early in the summer and the third passed on and gave up its spirit to wherever given-up tree spirits go, early in September.

So dry was the season that many of the trees and shrubs dropped their leaves very early in the fall and proceeded to put forth a new crop. Lilacs bloomed late in October, as did the Flowering Cherries, some of the Forsythia and some of the Crataegus. Even a Saucer Magnolia put out one bloom just before frost came.

Thus ends the tale. It has been definitely proved that large trees can be moved distances of at least five hundred miles, planted and brought through a summer such as that of 1930, with a loss of less than ten per cent. The day of planting a small tree and waiting for it to grow large enough to offer shade or be a definite object in a landscape plan is rapidly passing. Large trees may be had for the asking—and a price.

Yes, " 'the world's a stage' and most of us are only stage hands." I'm just one of those that shove the scenery around before the act.



CLASS OF 1932

BULL OF THE WOODS

*Yes, the name fits him well
Where e're he may dwell,
And it's one that you'll never forget.
It comes down through time
From some ancient line
And it fits to a "T" you can bet.*

*With steamboats for feet
And a nose like a beet,
And hair flying loose in the breeze;
A pair of wild eyes
Like a sudden surprise
And skin like the bark on the trees;*

*With a pair of big hands
Like ten pound hams
And arms that hang down to his knees,
A pair of bow-legs
Like the staves on kegs
And a map like a hunk of Swiss cheese;*

*His clothes are all worn
And tattered and torn
And the boots that he wears are a scream.
His hat tops his head
Like the roof on a shed
Or a cork on a jug if you please.*

*The tobacco he smokes
Just smothers and chokes
Every "Jack" that gets within range;
And the bowl of his pipe
Sure smacks of the type
That's sadly in need of a change.*

*To hear him bawl
At the old cross-haul,
You'd swear you were in the war.
His trap opens wide
Like the very inside
Of a barn that's minus a door.*

*The very trees quake
And shiver and shake
When his bazoo swings into action.
Yea, even the ground
Fairly jumps up and down
So the "Cats" can't even get traction.*

*He thunders and bluffs
And blunders and muffs
Every job that befalls his lot.
He don't even know
How to back up or go
For the brain that he's got ain't so hot.*

*When he hears the cook yell
Or bang on the bell,
He'll tear with a speed to surprise you
Through the door of the shack
Like a bloodthirsty pack
Of bloodhounds that shagged poor Eliza.*

*He'll dash to the table,
Scoop up a ladle
And gargle his soup in a flash.
He'll clean up the beans,
The spuds and the greens,
And boy—how he murders the hash.*

*He eats enough chuck
To fill up a truck
And tops off with a cake or a pie.
Then he'll rise to the floor
And stroll out the door
With a hungry look in his eye.*

*In the bunkhouse at night,
He sure is a sight
When he crawls up into his bunk.
The sound of his snore
Shakes the roof, walls and floor
Till the shack looks like it were drunk.*

*Yes, the name fits him well
Where e're he may dwell
And it's one that you'll never forget.
It comes down thru time
From some ancient line
And it fits him to a "T" you can bet.*

*He's got plenty of bulk—
The big windy hulk
And he's full of "Iams, cans, and could's".
When you've read thru this all,
You'll not wonder they call
This bozo the "Bull of the Woods".*

By FRANK "PORKY" ANDERSON, 1931.

METHODS USED IN A STUDY OF FOREST
TAXATION

By ROY B. THOMSON

In order to ascertain the extent to which forestry is being hampered by taxation in the United States and what is to be done about it, the Forest Taxation Inquiry was organized in 1926 to make a nationwide study of the problem. General methods used in this study have been described by R. C. Hall,* a member of the Inquiry staff, but it is believed that a description of the methods used in making an intensive tax study of a selected locality will also be of value to foresters and others interested in the problem.

The last region to be sampled by the Inquiry was the South, and the methods employed in that region therefore represent the latest developments in forest tax study technique. North Carolina was selected as a representative state and the work initiated there in March, 1930.

The reader is probably familiar with the more or less distinct geographic divisions of North Carolina. This State, as other Atlantic Seaboard States, is divided into three rather distinct areas, namely, coastal plain, piedmont, and mountain. Also, it must be stated that the principal political unit and also the taxing unit in North Carolina is the county; furthermore, that the counties vary considerably in proportion of forest land (forty to ninety per cent). Consequently three counties in the State with a large proportion of forest land and representing each of the three geographic divisions were selected as samples of the State. These counties are Beaufort (representing the coastal plain), Chatham (piedmont), and Macon (mountain).

In order to get a complete picture of the forest tax problem in these selected counties, a minute examination of the county records was necessary to secure data on the taxation of the various types of land, tax delinquency, relation of assessed to actual value, public finance, and relation of taxes levied to timber growth. Every property listed on the tax books was classified as to ownership, predominant use (farm, forest, resort, business or residential), and delinquency status. These data were gleaned from numerous county records and supplemented by information supplied by county officials. The acreage of each property was classified into cleared land, pasture land (in the case of Macon County), waste land, and forest land. This information had been secured by the assessors in 1927, the date of the last quadrennial assessment. It was also necessary to make a field check on this classification, which will be explained below.

*Hall, R. C., *Methods of Research in Forest Taxation*. Office Report, Forest Taxation Inquiry, January, 1930.

For each property thus classified it was possible, in each county except Chatham, to secure the total assessed valuation and also this total split into the values assigned to each class of land (cleared, pasture, waste, and forest), improvements (buildings), and merchantable timber. In Chatham county this break-down of the assessment was not made and it was necessary to approximate it on the basis of pure samples of each type of land.

It was also possible to get the total tax levied on each property but since this included, besides the real estate tax, personal property, poll, and dog taxes, the real estate tax had to be computed by applying the tax rates to the real estate valuations. This was no simple task because there were from twenty-three to twenty-eight different taxing districts in each county (mostly special school but some special road districts), each with a different tax rate.

The above resulted in a vast amount of data which had to be correlated and tabulated. To accomplish this, it was necessary to resort to a machine method. The various data were punched on cards and run through machines which sorted and tabulated them.

As stated above, a check on the assessors' land classification was essential. This was accomplished by a sampling process. From fifty to one hundred and fifty sample properties in each county were selected at random from the tax books. This method was used in order to get as representative a sample as possible. From information on the tax books giving the distances from certain towns and roads, it was possible to get a uniform distribution of these properties over the county.

Due to the absence of the rectangular survey in North Carolina, it was necessary to secure a local man to locate the properties. With his aid, each sample property was visited and the assessors' classification of the land verified. Their classification was found to be as accurate, or probably more so, than the Inquiry could have made without a detailed survey. The assessors, however, regarded a good deal of land as "waste" which was considered in the Inquiry's classification to be "forest". It was subsequently thrown into the "forest" category.

The assessors had also made estimates of the timber on certain properties, and an effort was made to use these estimates as a basis for getting an approximation of the timber in each county (applying a correction factor since they were known to be low), but they were so erratic in two of the counties that it was necessary to resort to another method which will be explained later on in this article.

In order to determine what proportion of the expected income of forest properties will go to taxes and to test out the effect of various alternative systems of taxation on these properties, it was necessary to determine the growth of the timber on them. The two eastern counties (Beaufort and Chatham) were characterized by extensive

areas of evenaged second-growth pine, so the growth was determined from yield tables prepared by the Southern Forest Experiment Station. § This was done on the sample properties referred to above. The growth determinations were checked by the Southern Forest Experiment Station, using the individual tree method. In making this check, sample strips were run and volumes figured from tables. † These volumes were applied to the total area of forest land in the counties to get a rough estimate of the stand of timber. For the unevenaged stands of the mountain county (Macon) the individual tree method was used to get the growth. Timber estimates of the Nantahala National Forest, most of which lies in Macon County, were used as a basis to get the timber estimate in this county, supplemented by a cruise of the privately owned land by means of sample strips. Nothing more than a statement of the methods used in these growth determinations is possible in this brief discussion. A detailed description of the methods is given in an office report of the Inquiry. ‡

Another field project was necessary to determine the extent to which forest property was being under- or over-assessed in comparison with other types of property. This is called an assessment ratio study. Each bona fide transfer of property in each county consummated during the last five years was taken from the deed books. The assessed value of these transferred properties was obtained from the tax books and the sale price obtained from one or both of the parties to the transaction. The verification of sale price was accomplished by interviewing the parties concerned and, when this was not possible, by questionnaire. The ratio of assessed value to true value (sale value) is the assessment ratio; consequently properties with high assessment ratios are assessed more in proportion to actual value than those with low ratios. A comparison was accordingly made between the assessment ratios of forest property and other types of property.

Any change in the system of taxation whereby the state or its subdivisions would be deprived of any of its revenue (even if only temporarily) might result in the crippling of state and local functions of government. Therefore an analysis was made of the functions of each governmental unit as to how much was spent for each purpose, where the money came from, and the amount of the debt. These financial data will be correlated with the data giving the amount of taxes borne by forests to determine the extent to which revenues would be disturbed by a change in method of taxing forests.

The field work on this North Carolina project required four months time, the full time services of two men (an economist and a

§Volume, Yield, and Stand Tables for Second-Growth Southern Pines. U. S. Department of Agriculture, Miscellaneous Publication No. 50, September, 1929.

†Idem.

‡Thomson, Roy B. Methods of Collecting Growth Data in North Carolina. Office Report, Forest Taxation Inquiry, September, 1930.

forester), and part time services of a dozen clerks and other temporary help. The office work is just now (January, 1931) being completed with the aid of a corps of computing clerks and stenographers. From this the time-consuming nature of a project of this kind may be fully realized.

Summing up, when the data are worked up, the Inquiry will be able to answer the following questions for the selected counties in North Carolina:

1. What is the area of forest land? What is its assessed valuation and how much tax is levied on it?
2. How much forest land is owned by lumber companies, non-residents, farmers, and other types of land holders?
3. How much forest land is tax delinquent? What proportion of this delinquency is a long-time condition and what part only of a temporary nature?
4. Is forest property assessed more or less than other property in proportion to its sale value?
5. What is the volume of merchantable timber? What is its rate of growth?
6. What proportion of the income from forest lands is being paid in taxes? Is forestry being hampered by taxation?
7. What proportion of the taxes is being contributed by forest land?
8. How much is expended to carry on governmental functions? What are the sources of revenue? What is the public debt? To what extent would a change in the system of taxing forest lands affect governmental functions and public finance?
9. If a forest tax law is necessary, what features of special application in North Carolina should it contain?



SHINE THE APPLE

(Dedicated to all loyal members of the R. O. O. A. P.)

*Oh, there is a college sport
Called—Shine the Apple.
Anyone, though tall or short
Can shine the apple
All you do is mount your horse,
See the "prof" whose got your course
And produce from any source
A polished apple.*

*Then you rub it till it gleams.
Yes, shine the apple.
And you shine it till it screams—
The poor apple
Oh you dang near wear out its skin
Running out and running in
To see the "prof" whose course you're in
And shine the apple.*

*Oh, it is a noble art
To shine the apple.
You can't stop when once you start
To shine the apple.
When it gets near finals' time
All the boys get right in line
To produce a healthy shine
Upon the apple.*

*When you're feeling kinda blue,
Just shine the apple.
When you think you won't get thru,
Oh, shine the apple.
When the skies look kinda gray,
And although you hope and pray,
The marks don't come your way
Just shine the apple*

(PORKY)

OH!

*The other night I called my gal
Campaigning for a date
A voice said, "Just a minute"
So an hour did I wait*

*I didn't know the little girl was in the tub,
Lashing in the foam
And I couldn't see her running,
Dripping to the 'phone*

*"Hello", she spake in shivering voice
"Hello, yourself", I said
"Have you ANYTHING on tonight?" I asked
"My God!" she cried, and fled*

*Now this may be a rapid world
Where things run with precision
But the little girl is misinformed
—We have no television.*

(GORMAN)

*She: Oh, do you take agriculture?
He: No, I was kicked by a horse!*

Tears!

"I WANNA GO BACK TO MICHIGAN"

By JACK KOPITKE

REMINISCENCES of a summer spent at the University of Michigan's Summer Forestry Camp gives me the inspiration to write this article, and further to tell you of Michigan's Forester's Summer Camp.

It was with the intent purpose of assisting Ralph Hall on his Bronze Birch Borer Investigation that I obtained the opportunity of working in the scenic Upper Peninsula of Michigan. You will recall reading Ralph's article of "Progress" on his Bronze Birch Borer Investigation in the "Gopher Peavey" of last year. The work last summer was along the same program, as mentioned in the above article, except that we were in a comparatively new region with a flourishing, but rapidly diminishing, hardwood forest type of Birch, Beech, Maple and Hemlock. Further, the investigation was expanded to include an intensive study of the root systems and an attempt to determine the effect of decadence upon the depression of the Freezing Point (Osmotic Pressure) of the cell sap. The work involved in accumulating data upon these new problems was most revealing and interesting. At this writing, Ralph Hall is busily engaged in writing up all the data he has accumulated from a three year study of the subject, and will present it for his Doctor's Degree this Spring.

The month of June was spent working in and around Marquette and Munising. During this time we were fortunate to have access to the Lake States Forest Experiment Station at Dukes, Michigan. Ed Mowatt, who many of us know in connection with the Experiment Station on the Campus, was in charge of the station. Ed and his three assistants were busily engaged in the compilation of much data, let alone doing a lot of construction and maintenance work. This station is comparatively new, and provides a wonderful field for the source of much desired information on the types in the Upper Peninsula. The construction work consisted of a new headquarter's residence and the complete fencing in of the station. One of Ed's assistants was none other than our own Clarence "Full Speed" Chase '30. However, as days rolled by (and we began to feel the affects of Ed's cooking) the latter part of June found us located at the University of Michigan's Forester's Summer Camp.

The Camp originally was a logging camp on a hardwood operation, but has since been abandoned. How this Camp, consisting of five shacks was converted to a Forester's haven, is a story of nothing more than hard work and brawn to produce a "Campus" consisting of the following: Headquarters Building, which was the commis-

sary, office, library, post-office, and faculty bunkhouse—all in one. The Dormitory, or bunkhouse proper, was divided or partitioned, so that a portion was used for a lecture and study room. Next came the Cook Shack and Dining Hall. One long table offered enough elbow room for the thirty hungry "wolves". And how they were fed up on beef! A storage shed and a barn completed the Camp. The storage shed offered facilities for a work bench, equipment, and space for a guest room with a "double-decker". The barn, after much renovating, provided space for a photographic film developing room, and also, a working laboratory and office for the Bronze Birch Borer Investigation.

Some of the boys thought that they were good agriculturists and started a truck farm or vegetable garden, but the effects of the drought and garden pests hit them. In fact, one morning they found a couple of stray horses using the garden for a good place in which to roll.

The task of teaching the twenty-five students (including one girl) the art of Forestry was attempted by two Professors and one assistant.

Michigan's Forestry school differs somewhat from ours at Minnesota in that the students spend two years in the "Lit." school and then register as Juniors in the School of Forestry. After completion of the two years in the "Lit." school they are required to attend Summer Camp. So, in reality their Camp is composed of Freshmen Foresters with a Junior rating, while ours is composed of Sophomore Foresters. Further, their camp is for a term of eight weeks in comparison to six at Minnesota. Also, the School has full charge of the Camp, that is, the students do not form a corporation. The students are charged a fee for tuition and commissary when they register for the summer session. If, after camp is over, there is a surplus in the commissary fund, it is divided equally among the students.

Classes were held six days of the week, with Saturday afternoon off. Lectures were given in the morning, with field work following in the afternoon. The schedule for the day went something like this:

- 6:30 A. M.—Rising gong.
- 7:00 A. M.—Breakfast.
- 7:30-8:15 A. M.—Camp Duty.
- 8:15-11:30 A. M.—Lectures.
- 12:00 noon—Beef.
- 1:00-5:00 P. M.—Field work.
- 6:00 P. M.—More beef!

The courses offered consisted of Forest Mensuration, with field work; Forest Protection, with field work; and Forest Improvements. The surrounding country offered ideal resources for field work. All year round hardwood logging operations were a few miles from camp.

National and State Forests were also accessible for observation and study. The town of Munising, which is about eight miles from camp, is similar to Cloquet having various wood utilizing industries, such as a large saw mill, veneer factory, large modern paper mill, and a wood converting factory where clothes-pins, wooden bowls, spoons, and the like are manufactured. Trips were taken through these mills and factories.

Forest fires were very numerous in the Upper Peninsular last summer, offering practical and actual experience in fire fighting for the course in Fire Protection. However, that was not all—the boys built two lookout towers and equipped them with a working telephone system and instruments. The operation of this fire protection system was undoubtedly the most unique and interesting of the summer's work.

Recreation had its place too. Over week-ends the flivvers were cranked and headed for trips all over the scenic Upper Peninsular. The iron mines around Marquette and Naganawee were unusual places of interest. Group trips were planned which included a launch trip on Lake Superior, a day at the Upper Peninsular Forest Experiment Station, and a over-night hike into virgin timber up to Beaver Lake (the future site of the Michigan Forestry school's summer camp).

The publishing of a weekly camp paper was a noteworthy accomplishment. A typewriter and a mimeograph device made the task quite simple. Kittenball, horse-shoes, and camp song-fests helped pass the evenings away.



OLD LIBRARY

THE CALIFORNIA CLUB RETURNS

GEORGE PLANT

AFTER a summer and fall filled with many thrills and experiences, the "California Club", the name designated to the group who were assigned to the Angeles National Forest near Pasadena, California, for the period from June to November, 1930, has returned, in part, to the campus of the University. Some students who were in attendance at the University of Minnesota during the spring quarter of 1930 will recall the publicity that was given to Arthur "Art" Roe, president, Roy "Frisby" Wagner, Ted "Thaddius" Niehaus, Harold Nilsen, and George "Willie" Plant in the Minnesota Daily. These worthy and enterprising students of forestry composed the "club".

The members started their westward journey on the morning of June 15. (Four of the group traveled from the Twin Cities out to the home of Ted Niehaus near Melrose, Minnesota, in the '25 Ford sedan, which was to be the mode of transportation part of the way, and arrived at the Niehaus farm at 10:00 A. M.) Shortly after noon the trip was under way with all present. Everything went along smoothly the first several days (except the Ford). As the party approached Yellowstone Park, the Ford was hitting on "3". After spending one and a half days looking over the wonders of Yellowstone as well as those of the popular product of Detroit, Michigan, the "club members" left in haste. They put Yellowstone behind them at 9:00 P. M. Thursday, June 19th and traveled along smoothly until 1:00 when the only tire trouble of the entire trip developed. Two hours later, when about sixty miles east of Butte, Montana, a railroad crossing after a sharp turn gave the travelers their real disaster. The car overturned in the ditch and all the windows were broken, door posts broken off, and the body was "successfully wrecked". The frame, fortunately, was not damaged. Nilsen and Niehaus both received broken collar bones, while Wagner was cut on the wrist by glass. The wreckage was towed four miles back to Three Forks. The work of taking off the body and replacing with an old touring model took a day and a half. Saturday noon the journey was again continued at the outrageous speed of 20 miles per hour with the injured members sitting in the rear while the three solid ones were "sandwiched" in the front seat.

An opportunity to see and traverse mountains was given to the gang and how! They visited the docks at Seattle and saw two Tysk brothers, one of whom, Harold by name, takes forestry at Minnesota and was looking for a boat to Alaska at the time. At Crescent City, California, the first glimpse of the ocean was available, and the same afternoon the redwoods were entered. The day before the boys

arrived at Pasadena another strange experience fell to their lot. The car sat down suddenly in the rear and one of the wheels was observed rolling merrily down the road.

The "California Club" went into conference on Monday afternoon, June 30, with the assistant supervisor of the "Angeles". Nilsen didn't care to remain idle for two weeks until his shoulder would permit of his swinging a mattock, so he received a timber cruising job in northern California. Harold told of wonderful experiences in the letters he wrote. The remaining four went out to camp which was in charge of Ed Thormodsen, a Minnesota man. This camp was in the foothills at the outskirts of Pasadena. Ted Niehaus remained in camp for two weeks before taking up the mattock and working with the rest of the bunch in clearing firebreaks and later, roadsides and camp grounds. About the middle of September, Art Roe received a patrolman's job near the famous Mt. Wilson observatory. The first of November, Plant took over the commissary department due to the sickness of the cook. The "unfortunates", from the latest report, have all survived the ordeal. Wagner secured patrolman's job which lasted but a few days (November 12 to 16) due to the several rains. The camp broke up and shifted the last part of November.

"Willie" Plant was the first to return and arrived in St. Paul via railroad on Thanksgiving Day. Wagner and Roe started the return journey in the latter's car (sh-h-h a model T) and abandoned that mode of transportation in New Mexico. They completed the journey by bus and reached Minneapolis about the middle of December. Ted Niehaus has decided to remain in the sunny south land until September of this year. Latest reports have it that Nilsen landed safely in China and has so far fulfilled many of his wanderlust aspirations. The foreman of our crew in California, Thormodsen, seeing the true qualities of men being educated at the University of Minnesota Forest School has also returned to Minnesota to complete his course in forestry which was laid aside two years ago.

Let's hope the "California Club" can be a tradition for all who become assigned to the Angeles or other National Forests in Southern California.

The Gopher Peavey Staff wishes to express its appreciation to the Ten Thousand Lakes of Minnesota Association, to "Fins, Feathers, and Fur" of the Minnesota State Game and Fish Department, and to Tau Phi Delta for the loan of various cuts appearing in this publication

JUST ANOTHER SMOKECHASER

*When "Uncle" sends you out alone?
At first it ain't so bad.
You're planted down in a mountain home,
And forget the times you've had.*

*You gaze around for things to do,
And plenty meets your eye.
You want the place to look like new,
And you wade right in knee high.*

*You clean up the grounds and mope around,
And put the joint in shape;
Arrange your stock and tune the clock,
And everything is jake.*

*And then you find that the next in line,
Is to try your luck as cook.
If you want some bread, you scratch your head,
And then consult the "book".*

*The bread is good; you knew it would;
And you pat yourself on the back.
And then you bake some pie and cake,
And munch it away by the sack.*

*You feel as snug as a bug in a rug,
And whistle a merry ditty.
And think of the saps that live on scraps,
And slave away in the city.*

*Something is wrong; the summer's half gone,
And you lay around on your bunk.
There's nothing to do; your time's half through;
And your belongings have dwindled to junk.*

*The nights are long; your gumption's all gone;
And you curse and bemoan your fate.
And you long for the time you'll leave this behind,
And commence to be pullin' your freight.*

*You get pretty lazy; you dang near go crazy;
You've read till your nearly blind.
All work you waive; you won't even shave;
And your hair is long behind.*

*The end is near; you hope you don't hear
Any talk of a fire.
When the telephone sounds, like a pack of hounds,
You wonder who's on the wire.*

*You sneak to the phone, chilled to the bone,
And answer in quavering voice.
Yes, it's the ranger; but he says there's no danger;
And you break right down and rejoice.*

*Then one day you wake, with shiver and shake,
And holler and jump up and down.
The sky is all gray, like a dirty ash tray,
And you act like a lunatic clown.*

*And comes the rain; it beats 'gainst the pane;
It hammers a tune on the shakes.
It blows through the door, and drops on the floor,
And you sure love the sound that it makes.*

*It rains for a week; it floods lake and creek;
The trees are all laden with moisture.
You lay on your back, in your cozy old shack,
As snug as shell-bound oyster.*

*At last comes the time, when over the line,
Comes a message so clear and sweet.
"Wake up you clowns—it's time to come down."
And you prance around on your feet.*

*You pack up your junk, and roll up your bunk,
And thumb your nose at the weather.
You dash from your nest like the "Pony Express"
And your heart is as light as a feather.*

*You don't look around, but dash straight for town,
And you burn big holes in your socks.
You may be some stale, but you sure burn the trail;
And sparks fairly fly from the rocks.*

*You get to the town and wander around,
Oh—for maybe a week.
Then you wish you were back in your little old shack,
High up on that lonesome peak.*

By FRANK H. ANDERSON,

(Kootenai National Forest, Libby Dist., 1930)

AMONG THE ALUMNI

To the Alumni:

The success of this section is dependent on you alumni, and the Staff of 1931 wishes to thank those alumni who have sent in the welcomed news letters.

Perhaps your addresses have changed. Perhaps your positions are different. Perhaps you have ideas which would help us or be of interest to your former classmates.

In all events, send us a brief note, and help to make this section grow. Editor.

1899

H. H. Chapman, our first graduate, is Professor of Forest Management at Yale University, and author of several forestry textbooks. This year he has been doing valuable work on the Fairchild Tax Study Commission.

1906

W. T. Cox, at one time Minnesota Forestry Commissioner, is now organizing a Forest Service at Rio de Janeiro for the Brazilian government. His address is quite intriguing, No. 7 Flamingo Terrace, Rio de Janeiro.

F. M. Cleator is with the office of lands in the regional forester's office in Portland. He is in charge of all recreational developments on the National Forest in the Pacific northwest. He is married and has a 14-year-old daughter.

1907

S. B. Detwiler is now Chief in the Office of Blister Rust Control, Bureau of Plant Industry, Washington, D. C.

1909

Walt M. Moore tells them how it should be done in the Air Service at Osborne, Ohio.

1910

A. O. Benson is busily searching into forest research at the Forest Products Laboratory, Madison, Wisconsin.

C. L. Lewis still reigns as "Cranberry King" at Beaver Brook, Wisconsin with the Badger Cranberry Company. His castle is in St. Paul at 125 South Oxford St.

N. G. Jacobson is in charge of the research department of the Western Forest and Conservation Association, and is now working on slash disposal problems in the western yellow pine type. Tradition has it that while at Itasca Park "Jake" placed such a huge boulder on a stoneboat that a team could not move it.

1911

"Dave" Arrivee assists the supervisor on the Targhee National Forest, Ogden, Utah. Best of luck to you Assistant Supervisor.

Julius V. Hoffman is now head of the Forestry Department of the North Carolina Forestry School at Raleigh, North Carolina.

A. F. Oppel is with the United States Forest Service, and he is now located here in St. Paul.

William Underwood after earning his doctor's degree in Economics at the U. of M., has secured a position in the Extension division at Purdue University, Lafayette, Indiana.

1912

John A. Stevenson is Senior Mycologist in charge of Mycological Collections in the Bureau of Plant Industry at Washington, D. C.

Grover M. Conzet, Commissioner of Forestry and Fire Prevention, has his offices in the Old Capitol Building at St. Paul, Minn.

Harry Blodgett although exceedingly busy with the Harvey Blodgett Printing Co., retains his interest in Minnesota and American Forestry.

1913

Chas. Simpson is one of our men to attain the rank of Supervisor. His field is the Lolo National Forest with headquarters at Missoula, Mont.

Robert Haworth is carrying Minnesota traditions to the West where he is working with the Red River Lumber Co. in Los Angeles, Calif.

1914

S. A. Graham is Professor of Forest Entomology at the School of Forestry and Conservation, at Ann Arbor, Michigan. Minnesota students are using his recently published "Principles of Forest Entomology" as a textbook.

Harold Spink has organized a lumber company of his own at Kansas City, Mo.

1915

Thorvald S. Hansen is head of the Experiment Station at Cloquet, and during the spring quarter, he aids the juniors in gaining practical forestry knowledge.

Hiram Wyman is with the Fire Protection Association of Oregon.

1917

L. S. Tuttle enjoys the title of lumber broker in Minneapolis, Minn.

1918

George Hauser is studying medicine at Ohio State University, and in his spare moments he carries on his duties as assistant coach.

Herb. Swanson is now in the paper business in Appleton, Wisconsin.

1920

"Shirley" Brayton is beginning his fifth year with the Itasca Paper Company at Grand Rapids, Minn.

Paul R. Palmer is an Episcopal minister at Benson, Minnesota.

Rudolph M. Brabow is a forester for a county in California.

Leo A. Isaac is with the U. S. F. S. in Portland, Oregon, and is in charge of Doug. Fir silvicultural research. "Ike, the deerslayer", is married, has two daughters, a Buick car and a place in Portland that is a real home sweet home.

1921

Leyden Ericksen is continuing his work with the American Lumberman's Association in Washington, D. C.

P. O. Anderson is with the Extension division, University farm.

Hubert Person does entomology research for the California Experiment Station at Berkeley, California.

1922

Ralph M. Nelson is a hard working pathologist in the office of Forest Pathology, Washington, D. C.

1923

Sidney S. Burton is using his forestry lore in a nursery at Woodward, Oklahoma.

Arthur L. Nelson is another of our men to attain the ranks of Supervisors. He issues orders in the Nebraska National Forest.

Raymond Stevens has already covered Hubbard County in his Economic Land Survey of Minnesota.

1924

Philip Byran is with the United States Forest Service at Hot Springs, Arkansas.

Victor A. Lynne is City Forester of Winona, Minnesota, where part of his duties is to keep this lovely little city beautiful.

Hubert Maturen has deserted the north in favor of the warm southland where he is doing duty with the Alabama Forest Service, with headquarters at Montgomery, Alabama.

1925

L. G. Baumhofer is now studying in Entomology at the University of Minnesota.

Walt Wilson has recently returned from the Firestone Plantations in Monrovia, Liberia, West Africa.

1926

Arland C. Blage, another Paul Bunyan disciple who "got religion" is now preaching in St. Paul, Minn.

Lyle Jackson is in the office of Forest Diseases Investigations Bureau of Plant Industry at Washington, D. C.

Nobel Shadduck is now studying law at the University of Minnesota.

R. M. Lindgren is also pathology minded, and he is in the office of Forest Pathology, Customs House, New Orleans, Louisiana.

From George Sargent, on the Klamath National Forest, we learn that the biggest timber sale of the forest is going into woods about February 17, or almost two months before the normal season. So, between fires and arguments with "lumberjacks" it looks like a busy season.

1927

Roy A. Chapman does his bit with the Southern Forest Experiment in New Orleans, Louisiana.

Leslie W. Orr is back at Minnesota after an absence of three years. He is teaching Forest Entomology to budding young foresters.

Arthur F. Verrall recently returned from the Firestone Plantations at Monrovia, Liberia, West Africa.

Fenton Whitney is a ranger at the Fort Rock Ranger Station on the Deschutes National Forest in Central Oregon.

Earl C. Wilson is with the Division of Forestry, University of California, Berkeley, Calif.

Warren W. Chase as assistant in Wood Utilization, ably passes on to present forestry students at Minnesota knowledge that he gained here.

Ernest Kolbe is with the Pacific Northwest Experiment Station, working on Western Yellow Pine Silviculture.

1928

Paul Rudolf, after working with the Southern Experiment Station, has moved north and now he is working with the Lake States Forest Experiment Station.

Thomas Lotti has been at the Harvard Forest School for two years, and now he is back at Minnesota with the Lake States Forest Experiment Station.

Gustaf Limstrom has joined the Minnesota men doing graduate work at the Yale Forest School.

Merrill Deters is an instructor in the Division of Forestry at Minnesota.

Lee Deen, desirous of yet more knowledge, is at the Yale Forest School doing graduate work.

Wm. Fischer is also with the Division of Forestry at the University of Minnesota.

Ellery Foster has been granted a year's leave of absence, and he is spending it in doing graduate work at the University of Michigan.

1929

Ernst George has the interesting job of making the treeless plains produce shade-giving and beautiful trees. His headquarters are at the Northern Great Plains Experiment Station, Mandan, North Dakota.

Frank Kaufert is very much interested in his work on Foot Rot of Wheat at the Halle University, Halle Germany.

Dale Chapman has completed a year's work at the Forest Products Laboratory, and he is now down south with the Southern Experiment Station at New Orleans, Louisiana.

John Neetzel after studying in the West for a year is now working at the Lake States Experiment Station where he is interested in Protection work.

"Bill" Hallin is a J. F. on timber sales on the Deschutes National Forest.

1930

Clarence Wiese and Richard Wittenhamp are doing some interesting work with Land Economic Survey in Wisconsin.

Robert Anderson and William Brener are busy writing reports on the work done in Hubbard County, Minn. by the Land Economic Survey, at the Lake States Experiment Station.

Eynar Benson is getting his Master's at the Yale Forest School at New Haven, Conn.

Hugo Pawek is continuing to work for the U. S. F. S. At present he may be found at Duke University, Durham, North Carolina. His field work is done in Duke Forest.

A. K. Wogenson is with the U. S. F. S. somewhere in North Carolina.

ALUMNI DIRECTORY

1899

Chapman, H. H. Yale School of Forestry, New Haven, Conn.

1903

Erickson, M. L., Flandreau, S. D.

1905

Cuzner, Harold, College of Agriculture, Laguna Province, Los Banos, Philippine Islands.

1906

Cox, Wm. T., No. 7 Flamingo Terrace, Rio de Janeiro, Brazil, S. A.

Detwiler, S. B., Chief, Office Blister Rust Control, Bureau of Plant Industry, Washington, D. C.

Rockwell, F. I., 243 Security Bldg., Minneapolis, Minn.

Tierney, D. P., Castle Rock, Minn.

Cleator, A. W., 514 Lewis Bldg., U. S. M. A., F. S., Portland, Ore.

1907

Canavarró, Geo. de S., 2739 Huuanu Ave., Honolulu, Hawaii.

1909

Moore, Walt M., U. S. Army Air Service, Box 234, Osborne, Ohio.

Orr, George R., deceased.

1910

Baker, Norman M., c-o Plywood Co., Martiney, Calif.

Benson, Arnold O., Forest Products Laboratory, Madison, Wis.

Berry, J. B., Winter Haven, Fla.

Brewster, D. R., 1339 Bank of Commerce Bldg., Memphis, Tenn.

Derring, Robert, Ferry Bldg., San Francisco, Calif.

Jacobson, N. G., 630 W. Lumberman's Bldg., Portland, Ore.

Krauch, H. G., Ft. Valley Exp. Station, Flagstaff, Ariz.

Lewis, C. L., Jr., 125 South Oxford St., St. Paul, Minn.

Underwood, C. L., 305 N. 4th Ave., Yakima, Wash.

1911

Arrivee, David A., Targhee National Forest, St. Anthony, Idaho.

Beard, F. W.

Bowen, C. W., Jr.

Brownlie, J. R., Thompson Yards, Livingston, Mont.

Campbell, Hugh B., Prairie, Wash.

Eisenach, Walter, 1410 E. 10th St., Duluth, Minn.

Gilles, J. R., Box 248, Zamboanga, Philippine Islands.

Hamilton, C. L., 808 Merchants National Bank Bldg., St. Paul, Minn.

Hauge, A. G., U. S. F. S., McNary, Ariz.

Hofmann, J. V., Forest School, North Carolina Agriculture College, Raleigh, N. C.

Kenety, W. H., Cloquet, Minn.

Martin, D. W., 1843 South St. N. W., Washington, D. C.

Oppel, A. F., 1523 Branston, St. Paul, Minn.

Underwood, Wm. Purdue University, Lafayette, Indiana.

Weber, Henry, Northern Oil Co., Virginia, Minn.

Williams, Donald, Washington Wood Preserving Co., Spokane, Wash.

Young, Paul.

1912

Beyer, W. F., 59 Maiden Lane, New York City.

Blodgett, H. P., 1376 Portland Ave., St. Paul, Minn.

Clymer, W. R., 1626 Laurel Ave., St. Paul, Minn.

Conzet, G. M., Commissioner of Forestry and Fire Prevention, Old Capitol Bldg., St. Paul, Minn.

Harris, S. Grant, Jr., Page and Hill Co., Minneapolis, Minn.

Hodgman, A. W., Westport, Ore.

Norman, Sigvald, 2253 Scudder St., St. Paul, Minn.

Orr, J. E., Bay City, Mich.

Pearce, Wm. R., Botsford Lumber Co., Faribault, Minn.

Pettibone, H. M., 500 Webster Place, Milwaukee, Wis.

Spellerberg, F. E., deceased.

Stevenson, J. A., Office Forest Disease Investigation, B. P. I., Washington, D. C.

Wilson, Robert, U. S. Field Station,
Cheyenne, Wyoming.

1913

Buhler, E. O., Merchants Trust Co.,
St. Paul, Minn.

Erstad, Andrew.

Griffin, Thos. A., 3529 Humboldt
Ave. S., Minneapolis, Minn.

Hall, Edwin H., 2000 Fairmont Ave.,
Eugene, Ore.

Haworth, Robert, Red River Lumber
Co., 702 Slauson, Los Angeles,
Calif.

Henchel, Norman, Bushong, Kan.

Moir, John, 1501 Pioneer Bldg., St.
Paul, Minn.

Nuffer, Harry

Renshaw, David, deceased.

Rogers, Ernest, deceased.

Savre, Oliver M., Northwood, Iowa.

Simpson, Chas., Lolo National Forest,
Missoula, Mont.

Tobin, Paul, Lewiston, Idaho.

Wiggin, G. H., School of Forestry,
Bottineau, North Dakota.

1914

Aldworth, Donald, 456 Fourth Ave-
nue, New York City.

Allen, P. T.

Braden, Kenneth, Detroit, Mich.

Cummings, Thos. S. C., Fort Benton,
Mont.

Freeman, George, 131 Hooper Ave.,
Toms River, N. J.

Graham, S. A., School of Forestry, U.
of Michigan, Ann Arbor, Mich.

Lindeberg, Geo. C., 900 First National
Soo Line Bldg., Minneapolis, Minn.

Mueller, A. T., Princeton, Wis.

Ringold, Stanley L., 2124 St. Clair
St., St. Paul, Minn.

Rose, Logan, Mankato, Minn.

St. Marie, A. A.

Spink, Harold W., H. R. Smith Lum-
ber Co., Kansas City, Mo.

Torgrim, J. R., deceased.

1915

Chance, Jenner D., 719 7th Street
S. E., Minneapolis, Minn.

Dennis, Henry M., Tacoma Lumber
Co., Tacoma, Wash.

Dunn, Frank M., 3110 4th St. S. E.,
Minneapolis, Minn.

Hansen, Thorvald S., Forest Experi-
ment Station, Cloquet, Minn.

Hawkinson, Carl, Jr., Virginia, Minn.
Sischo, Paul C.

Wyman, Hiram, Dundas, Minn.

1916

Bartelt, Harry, 2091 Buford Ave., St.
Paul, Minn.

Bell, Ernest, deceased.

Blake, Philip, Glendora, Calif.

Broderick, Martin,
hogany Co., Bluefield, Nicaragua.

Crane, Leo F., Post Recruiting Office,
Fort Sam Houston, Texas.

Gjerlow, Atle B., c-o Nicaragua Ma-
hokany Co., Bluefield, Nicaragua.

Hyde, Luther, deceased.

Johnson, Oscar.

Rhoads, Ralph, Scott Paper Co., Ches-
ter, Pa.

Schwartz, E. R., 1821 Liberty Street,
Marinette, Wis.

1917

Burnes, J. D., 5008 Vincent Ave S.,
Minneapolis, Minn.

Forsberg, Carl, 3444 32nd Ave. S.,
Minneapolis, Minn.

Tuttle, L. S., Odell-Tuttle Lumber
Co., 1645 Hennepin Ave., Minne-
apolis, Minn.

1918

Danson, Robert.

DeFlon, Leland L., Moody Bible In-
stitute, Chicago, Ill.

Hauser, Geo., Ohio State University
School of Medicine, Columbus,
Ohio.

Pendergast, Earl, 13215 Birwood St.,
Detroit, Mich.

Swanson, Herb., c-o Kimberley Clark
Co., Appleton, Wis.

1919

Backus, Romaine, 1953 Cheremoya
Ave., Hollywood, Calif.

1920

Brayton, S. C., Itasca Paper Com-
pany, Grand Rapids, Minn.

Frudden, Clyde M., Greene, Iowa.

Grabow, R. M., 202 No. Broadway,
Pasadena, Calif.

Isaac, Leo A., U. S. Forest Service,
514 Lewis Bldg., Portland, Ore.

Palmer, Paul, Benson, Minn.

Schmid, Walter W., 50 Church St.,
New York City.

1921

Anderson, P. O., Extension Division,
University Farm, St. Paul, Minn.

Anneberg, Robert D.

Armstrong, J. J., 2132 Dayton Ave.,
St. Paul, Minn.

Bryan, P. H., Arkansas National For-
est, Hot Springs, Ark.

Dwyer, Daniel F., 969 Goodrich Ave.,
St. Paul, Minn.

Ericksen, Leyden, National Lumber
Mfrs. Association, Transportation
Bldg., Washington, D. C.

Grapp, Lloyd, Indian Agency, Neopit,
Wis.

Ostrowski, Francis, Waldorf Paper
Co., St. Paul, Minn.

Person, Hubert, Calif. Forestry Ex-
periment Station, University of
Calif., Berkeley, Calif.

Wackerman, A. E., Crossett Lumber
Co., Crossett, Ark.

Whiton, Arthur L., 572 Elmwood
Ave., Apt. 19, Buffalo, N. Y.

1922

Anderson, Alvin A., 1305 Shorb Ave.,
N. W., Canton, Ohio.

Anderson, Otto W., deceased

Nelson, Ralph M., Federal Bldg.,
Asheville, N. C.

Sheehan, John A., Cudahy Packing
Co., Duluth, Minn.

Thayer, Burton, 2400 Bourne Ave.,
St. Paul, Minn.

1923

Burton, Sidney S., Woodward, Okla.

Cheesebrough, Herbert S., West Lib-
erty, Iowa.

Dockstader, Chas., 2338 Marshall
Ave., St. Paul, Minn.

Fegraeus, Thorbern, deceased.

Fenger, Gunnar, Chippewa National
Forest, U. S. F. S., Cass Lake,
Minn.

Frost, Orcutt W., Cloquet, Minn.

Hamilton, Herbert, McCloud, Calif.

McCreery, Otis, Assistant Dean of

Student Affairs, University of Min-
nesota, Minneapolis, Minn.

Nelson, Arthur L., Nebraska National
Forest, Halsey, Neb.

Probstfield, E. E., c-o Holland-Ameri-
can Plantations, Kiseran, Asahan,
Sumatra, D. E. I.

Stevens, Raymond, Minn., Forest Ser-
vice, Old Capitol, St. Paul, Minn.

Streinz, Augustine, Asst. Prof. of For-
estry, State University, Baton
Rouge, La.

Sunday, Clarence W., Redwood Falls,
Minn.

Tilden, Floyd, 412 Prior Ave., St.
Paul, Minn.

1924

Berggren, Harold, Lewiston, Idaho.

Betzold, Harold, 1224 Lexington Ave.
North, St. Paul, Minn.

Bryan, Philip H., Ark. National For-
est, Hot Springs, Ark.

Christopherson, Clifford, 1129 West
Lawrence, Appleton, Wis.

Hoar, Walter G., Coeur d'Alene Na-
tional Forest, Coeur d'Alene, Idaho.

Kribs, D. A., South Fork District,
Shoshone National Forest, Cody,
Wyo.

Leffelman, L. J., c-o Walter C. White,
R. F. D. 3, Sumter, South Carolina.

Lynne, Victor A., City Forester, P. O.
Box 382, Winona, Minn.

Maturen, Hubert, Alabama Forest
Service, 321 Shepard Bldg., Mont-
gomery, Ala.

Nelson, Albin C.

Ostergaard, Harold, Baudette, Minn.

Pillow, M. Y., Forest Products Lab-
oratory, Madison, Wis.

Ritchie, Wm. A., Marathon Paper
Mills, Ashland, Wis.

Sheffield, Ernest F., Robbinsdale,
Minn.

Upton, Nelson.

Weswig, Carl 1456 Branston St., St.
Paul, Minn.

Youngers, P. W., 4540 Vincent Ave.
S., Minneapolis, Minn.

1925

Barrett, Wilford.

Baumhofer, L. G., 341 Giannini Hall,
U. of Cal., Berkeley, Calif.

Blandin, H. M., Cornell Wood Products Co., Cornell, Wis.
 Cooper, Geo., East Lee, Mass.
 Flanagan, Clement.
 Gay, Chester, 1305 Pioneer Bldg., St. Paul, Minn.
 Gordon, J. R., 1511 Belmont Road, Duluth, Minn.
 Jensen, Victor S., Northeastern Experiment Station, Amherst, Mass.
 Litchfield, Wickliffe, Mankato, Minn.
 Maughan, Wm., Yale Forest School Camp, Urania, La.
 Peel, Wm. F., White Bear, Minn.
 Racey, Chas., 1003 8th Street S. E., Minneapolis, Minn.
 Thomson, Roy, U. S. Forest Taxation Inquiry, 360 Prospect St., New Haven, Conn.
 Wilson, Walt, c-o Meyer Engraving Co., 316 8th Ave. So., Minneapolis, Minn.

1926

Bjornstad, E. G.
 Blage, Arland C., Anoka, Minn.
 Christianson, D. A., Hinckley, Minn.
 Coffey, John J., 1731 Laurel Ave., St. Paul, Minn.
 Erickson, Eugene T., Millbrook, N. Y.
 Everts, Ambrose, U. S. F. S., Quincy, Calif. Plumas National Forest.
 Goldberg, Hyman M., 711 Dayton Avenue, St. Paul, Minn.
 Henry, Leslie, U. S. F. S., Lauder, Wyo.
 Hyatt, H. H., 3700 Penn Ave. No., Minneapolis, Minn.
 Ilstrup, Marshall, deceased.
 Jackson, Lyle, Office of Forest Diseases Investigation, Bureau of Plant Industry, Washington, D. C.
 Janssen, Geo. R., 911 Carroll Ave., St. Paul, Minn.
 Kelsey, H. B., 2817 17th Ave S. E., Minneapolis, Minn.
 Kuenzel, J. G., Yale Forest School, New Haven, Conn.
 Lindgren, R. M., Office Forest Pathology, Customs House, New Orleans, La.
 Lystrup, Herbert, Warendale, Greenhouse, Como Ave., St. Paul, Minn.
 Manuel, Ronald, Buenos Aires, Argentina, S. A.
 Shadduck, Nobel, Law, University of Minnesota, Minneapolis, Minn.
 Sargent, Geo., U. S. F. S., Yreka, Calif. Klamath National Forest.

Umbehoeker, Kenneth, 4633 Oakland Ave. S., Minneapolis, Minn.
 Watts, Paul Kenneth, 619 Washington Ave. S. E., Minneapolis, Minn.
 Whitchurch, Gale M., County Forestry Dept., Los Angeles, Calif.
 Zierke, E. A., 2124 Como Ave. W., St. Paul, Minn.

1927

Carlson, C. Homer, 3838 22½ Ave. S., Minneapolis, Minn.
 Chapman, Roy A., So. Exp. Station, Customs House, New Orleans, La.
 Chase, W. Warren, Div. of Forestry, U. of M., St. Paul, Minn.
 Clement, Raymond, Minn. Forest Service, Hibbing, Minn.
 Duclos, E. P., 793 9th Ave., Wauwatosa, Wis.
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 Hartupee, Chas. H., Red Wing, Minn.
 Himebaugh, W. K., Education, U. of M., 418 S. E. Oak, Minneapolis, Minn.
 Holmberg, R. E., Hastings, Neb.
 Horton, Gerald S., U. S. F. S., Mio, Mich.
 Kaner, Arnold, Cloquet, Minn.
 Knutson, Clarence, U. S. F. S., East Tawas, Mich.
 Kolbe, Ernest, U. S. F. S., Portland, Ore., 514 Lewis Bldg.
 Krueger, Carl G., U. S. F. S., Shoshone National Forest, Cody, Wyo.
 Lawson, Edward L., Minn. Forest Service, St. Paul, Minn.
 Leaf, Geo., 932 Westminster St., St. Paul, Minn.
 Martilla, Uno, Eveleth, Minn.
 Nelson, Stanley C., 3241 18th Ave. S., Minneapolis, Minn.
 Orr, Leslie W., Dept. of Entomology, U. of M., St. Paul, Minn.
 Sheridan, E. P., 2526 Bloomington Ave., Minneapolis, Minn.
 Swanbeck, H. J., 813½ 12th Ave. S., Minneapolis, Minn.
 Verrall, Arthur F., U. Farm, St. Paul, Minn.
 Whitney, Fenton, Deschutes National Forest Bend, Ore.
 Wilson, Earl G., 3128 20th Ave. S., Minneapolis, Minn.

1928

Blatter, Paul, Olympic Forest Products Co., Port Angeles, Wash.

- Harvey, Harry, 1189 Hague Ave., St. Paul, Minn.
 Homola, Jerome.
 Kirkham, Dayton, Colorado National Forest, Ward, Colorado.
 Knudson, Ray, Sawyer-Stoll Timber Co., Escanaba, Michigan.
 Knutson, Clifford J., 3236 18th Ave. S., Minneapolis, Minn.
 Limstrom, Gustaf, Yale Forest School, New Haven, Conn.
 Lotti, Thomas, Lake States Forest Experiment Station, St. Paul, Minn.
 Norgorden, Emil, Veronia, Ore. P. O. 41.
 Piras, Stanley, 83 Douglas St., St. Paul, Minn.
 Rathbun, Harold, National Pole and Tie Co., Minneapolis, Minn.
 Rudolf, Paul, Lake States Forest Experiment Station, St. Paul, Minn.
 Sheridan, Edgar, 2526 Bloomington, Minneapolis, Minn.
 Strimling, Harry, 4813 28th Ave. So., Minneapolis, Minn.
 Van Alstine, J. Neil, Woodstock Dist., U. S. F. S., White Mt. National Forest, Laconia, N. H.
 Whitehill, Benjamin, Washakie National Forest, Du Noir, Wyoming.

1929

- Anderson, W., North Route, Hoodsport, Wash.
 Andrews, Shirlee B., c-o Michigan Tie & Pole Co., Reed City, Mich. Haven, Conn.
 Wogenson, Adolph K., Tyler, Minn.
 George, Ernests, Northern Great Plains Experiment Station, Mandan, N. D.
 Kaufert, Frank, Halle Universty, Halle, Germany.
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 Cook, Oliver, Flour City Paper Box Co., Minneapolis, Minn.
 Cooper, Arthur.
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 Fischer, Wm., Medicine Bow National Forest, Laramie, Wyo.
 Foster, Ellery, School of Forestry, U. of Michigan, Ann Arbor, Mich.
 Grant, Albert, Scott Pole Company, Minneapolis, Minn.
 Halvorson, George, 2216 26th Ave. So., Minneapolis, Minn.
 Robinson, Winfield R., Indian Agency, Neopit, Wis.
 Christenson, Clyde, Pathology Dept., U. Farm, St. Paul, Minn.
 Crew, John, 3233 21st Ave. S., Minneapolis, Minn.
 Chapman, Dale, Forest Products Laboratory, Madison, Wis.
 Hallin, Wm., U. S. F. S., Bend, Ore.
 Light, James, Ottawa, Ohio.
 Marks, Elmer.
 Neetzel, John, Lake States Exp. Station, St. Paul, Minn.
 Parr, Thad., Armstrong Tree Service Co., Box 169, Poughkeepsie, N. Y.
 Peterson, Harry A., 1361 Greenleaf Ave., Chicago, Ill.
 Ritter, Lawrence, 1400 Raymond Ave., St. Paul, Minn. Blister Rust Control.
 Roan, Audray, c-o Gamble Store, Moorehead, Minn.
 Thomas, Jr., R. D., International Paper Co., Glen Falls, N. Y.
 Tilden, Ray B., 253 Louis St., St. Paul, Minn.
 Williams, David M., c-o Curtin-Howe Corp., Galesburg, Ill.

1930

- Nelson, Henry O., 2225 West 4th St., Duluth, Minn.
 Anderson, Carl H., 1245 Hamline, St. Paul, Minn.
 Boettcher, Paul, Retail Lumber Co., McLaughlin, S. D.
 Bulfer, Daniel, U. S. F. S., Ogden, Utah.
 Clough, Robert, 1320 St. Clair St., St. Paul, Minn.
 Lorenz, Ralph, 210 3rd Ave., Waseca, Minn.
 Lorenz, Rolland, 210 3rd Ave., Waseca, Minn.
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 Aamot, A. Loren, Spring Valley, Minn.
 Anderson, Milton, 519 5th St. S., Virginia, Minn.
 Anderson, Robert, Land Economic Survey, Lake States Experiment Station, St. Paul, Minn.
 Forder, Milton, Buhl, Minn.
 Chase, Clarence, 121 Lynn, Ames, Ia.
 Benson, Eynar, 66 Howe St., New Haven, Conn.

- Brener, William, Land Economic Survey, Lake States Experiment Station, St. Paul, Minn.
- Freeman, Victor, U. of Minn.
- Maki, Tenho, U. of Minn.
- Mitchell, Harold, Waseca, Minn.
- Pawek, Hugo, c-o Director of Duke Forest, Durham, North Carolina.
- Royer, William, 605 So. Seorilla Ave., Oak Park, Ill.
- Wittenkamp, Richard, Land Economic Survey, Wis.
- Wogenson, Adolph K., U. S. F. S., Region 7, North Carolina.

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