

*John R. Neetzel*

# GOPHER PEAVEY

1933



Forestry Club  
UNIVERSITY  
OF  
MINNESOTA

THE  
1933  
Gopher Peavey

THE ANNUAL  
PUBLICATION OF THE  
FORESTRY CLUB





### THE WHISPER

*A whisper is made of the paddles dip,  
Or the push of the frail canoe;  
The quiet tread of padded feet  
That fall where the trail is new;  
The sudden flush of startled things,  
The untamed song of the stream,  
Or talk of men who dream of luck,  
And die for the luck of their dreams.*

—ANONYMOUS



## *Dedication*

To Mary Dwight Akers, whose unselfish devotion to conservation in Minnesota has been an inspiration to us all, this issue of the Gopher Peavey is affectionately dedicated.

We have come to look upon you as our most sympathetic contact with the State Federation of Women's Clubs which has always given its loyal support to conservation. The women, under the competent leadership of Mrs. J. S. Thurston, have accomplished great things, and we deeply appreciate that support. We acknowledge our debt to all the women, but it has been very largely through your kindly and generous cooperation that we have been brought into closer contact with that work. For us you have come to epitomize that never flagging interest.

It is with a feeling of deep admiration and respect that we now honor ourselves by giving this slight recognition to Woman's contribution to conservation through the person of Mary Dwight Akers.

## Foreword

For twelve years now the Gopher Peavey has bravely carried forth its message of good fellowship and cheer. It has come to you in times of joy and in times of sorrow, looking with a certain satisfaction upon its past history and with confident hope upon the future. So it comes today.

Blind indeed would be the man who could ignore the present depression which has set the good ship close upon her beam; but she has not sunk, nor, thank God, has her ballast shifted. The water is being rapidly pumped from the hold and slowly, very slowly, she is beginning to right herself.

The storm has been one to try the courage of the best of us, but for him of the stout heart, with the poise to keep his head and the will to endure, the sun will shine upon a better day. And in times like these it sometimes helps to know that other eyes as anxious as your own are watching the steering of your little boat.

To those who have faith in the future! The Peavey Salutes you!

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1933  
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## GAME MANAGEMENT

BY RALPH T. KING

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THIS article does not attempt to prove the worthwhileness of game conservation efforts. It is taken for granted that we are sufficiently well aware of the value of game animals as one of our natural resources to concede the necessity for constructive game conservation measures.

Our game species constitute a valuable natural resource although their importance in this respect was not realized until 1910 and they were not considered as deserving inclusion in this category prior to that date. However, the last twenty years have seen not only a growing interest in these wild creatures but an increased appreciation of their real values.

These values may be listed as aesthetic, recreational, sporting, purely commercial, biological and scientific. Anyone of these is great enough to justify the expenditure of time and effort to conserve and increase the stock of the various species included under the heading game animals.

The problems arising in connection with game conservation may be roughly divided into three groups, namely—sociological, economic and biological, and among the biological problems are a number that fall in the domain of game management. It is only with these latter that this paper is concerned.

Any consideration of game conservation must take in to account past attitudes. A background of history will serve best to make clear present problems.

There was a time in the history of this country when the only wild-life problem was that of killing off the too numerous species and individuals in order to make room for domestic breeds—the removal of forests in order to make room for corn and wheat fields. Everyone has read accounts of the tremendous flocks of wild pigeons that at one time darkened the skies for hours in passing—of the enormous herds of buffalo and antelope that grazed our plains country—of the innumerable deer, elk and moose in our forest areas—of waterfowl and shore birds so abundant each spring and fall that there seemed no possibility of reducing their numbers—of the hordes of prairie chicken, quail, and ruffed grouse so abundant and so easy to obtain that servants stipulated in contracts with their employers that they were not to be furnished this type of food oftener than three times a week.

It would be an easy matter to go on quoting from such accounts written on the grounds at the times in question. We now have hundreds of them on file covering the period from 1840 to 1930. But everyone knows the main point in the story—there was an abundance, now there is an alarming scarcity.

It is very probable, however, that the difference in numbers between then and now is not as great as it seems. Observations by these early settlers were quite largely confined to the "fringe areas." This area, lying between undisturbed wild land on the one side and developing agricultural land on the other was ideal game land. Not only was the game attracted in large numbers from the surrounding country by the types and abundance of food made available in this belt but this game found here ideal conditions for reproduction and consequently the annual increase was greater than it had been before the white man's advent.

There can be little doubt that the opening up of forests, establishment of clearings, extension of crop range, introduction of new foods, and similar factors, all incident to the development of a new country, encouraged and increased the game supply. However, this stage was rapidly succeeded by further development. Clearings became more extensive, resulting eventually in the removal of most of the forests and thickets; invasion, and often times, actual destruction of the breeding range followed. Increased population meant increased hunting, not only by a larger number of sportsmen but to supply a market provided by this larger population. And coincident with all these changes were changes in agricultural practices, improved methods of harvesting, introduction of fences and granaries, removal of crops at maturity and other such practices that more than did away with the possibilities of increased food through increased acreage.

This reduction of the range and increased shooting finally reduced our game to the point where it became obvious that something had to be done if the remnant was to be saved. It was at this point that we began to pass laws and appoint game commissioners with a view to conserving the supply.

The game conservation measures thus far adopted may be broadly outlined under four main headings and in the following order:



restrictive laws, predator control, establishment of refuges, and artificial replenishment.

Restrictive laws were the first conservation measures undertaken. These laws were passed in the belief that if hunting was limited game populations would increase and there would always be an abundant supply of wild life. It soon became evident that legal restrictions even though enforced would not maintain a satisfactory game population and could not possibly bring about an increase.



Eventually it came to be realized that neither predator control or restrictive laws were going to save our game populations and then the third step, establishment of game refuges, was taken. It was believed that the setting aside of wild or semi-wild areas where game could rest, feed and breed undisturbed would result in greatly increased populations on these so-called refuges and the surplus would wander out over the boundaries and restock the surrounding areas. Large numbers of refuges, sanctuaries and preserves were established and a few of them actually accomplished the purpose for which they were intended. However, the results did not measure up to the expectations and again conservationists were forced to conclude that the measures thus far adopted had only not brought about any increase in the numbers of game animals but had failed to maintain such populations as existed when the measures went into effect.

It is not the intention of this paper to prove that the measures just listed accomplished no good at all. As a matter of fact they have

each helped and are perhaps to be credited for saving what we now have but they did not do all they were intended to do or all that is was hoped they would do, and they will neither save or greatly increase what we have left.

These facts became more or less evident to some conservationists some years back and it was then the fourth of the major steps in game conservation was taken, that is, artificial replenishment, either through the introduction of foreign species or through the rearing of certain species on game farms to be released later in the wild.

So far this method has worked successfully with two introduced species, ringneck pheasants and Hungarian partridges, and in some places under certain conditions with one native species, bobwhite quail.

As for the two introduced species included in this class we can thank whatever deity it is that looks out for those who walk blindly in dark places for the luck that has attended our efforts thus far. In some regions their introduction has been almost unbelievably successful. The results following the introduction of the Ring-neck pheasant in the Northwestern States is well known, as is also the success in South Dakota with the same bird.

The Hungarian partridge, a later introduction, is showing the same ability as the pheasant to occupy and hold territory and to increase in numbers. In Alberta, where the partridge was first introduced in 1908, an open season of thirty days with a daily bag limit of five was permitted in 1912; limits later were extended until in 1927 the open season was 3 months and the bag limit was 15 birds a day.

This all looks very encouraging but the northwestern Hungarian population already shows plain indications of a reversal of trend. The peak cannot be maintained even in the absence of shooting. The population to be eventually established will be less than one would have expected from their past behavior. Where the population curve will finally lie remains to be seen and whether or not this species will begin to exhibit the violent fluctuations of our native grouse and supply good shooting for only three years out of ten is a development to watch for.

Is the South Dakota pheasant population approaching the same status? There are not many men familiar with game population problems who believe they will maintain their present numbers.

As for the Bob-white quail, we will in the future point to Stoddard's work on this species as marking an epoch in game management and demonstrating to everyone's satisfaction the success of the methods here advocated. This species in Minnesota has occurred from the south boundary to as far north as Brainerd. For a few years following the Hinckley Fire all the country covered by this

fire was literally overrun with quail. In all the region around the Twin Cities and in the west and south of them quail have occurred in considerable numbers on numerous occasions and still do. Why these sporadic outbreaks? Why the oscillations? It is such questions as these that we must answer and only through research will we find the answer.

Research will provide the basis of scientific fact on which the art of game management must be built and game management is the fifth major step in game conservation. Such management can be accomplished only through environmental controls, that is, the control modification of certain factors of the environment such as food, cover, predators, accidents, diseases, parasitism, inimical cultural practices, hunting both legal and illegal, and other such influences and requisites as go to make up game range. It means recognition and appreciation of all the innumerable factors affecting game populations and application of control measures directed toward improving the whole environment rather than control of a single factor. It means the doctoring of "sick" environments and not the doctoring of sick individuals.

Such control cannot be practiced until we learn to recognize these various environmental factors and until we have devised means of measuring the effects of the individual factors. As such detailed knowledge becomes available it will make of "Game management the art of making land produce sustained annual crops of wild game for recreational use." This quotation is taken from Leopold's book "Game Management" which has just this week come from the press. As a definition it leaves little to be desired for it states clearly and concisely the purpose and content of game management. Its chief significance may not, however, lie so much in the fact that this art has progressed to the point where its aims can be so definitely and deliberately stated as in the fact that such aims and the means for achieving them have been recognized as sufficiently important to warrant their discussion and publication.

Game management is not synonymous with game conservation although it should be and perhaps sometime will be. Management is an art and art is the application of knowledge, where there is no knowledge there can be no art. Game Management is at present a very crude art, and its crudeness is quite apparent when it is compared with older and longer established arts such as agriculture and forestry. Its development into an exact art is dependent upon increased knowledge, upon an accumulation of facts. It must, like every other art, be based upon a science if it is to have a firm foundation. Science is systematized knowledge and it is only through this systematized accumulation of facts in regard to the growth and interrelations of game that we can build up a science of game conservation on which an exact art of game management can be based.

## SUSTAINED YIELD MANAGEMENT IN THE ADIRONDACKS

WESTON DONEHOWER, '31

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FOR many years sustained yield management has been recognized as of paramount importance in American forestry. Why then is it that, in general, sustained yield principles have not been adopted by industrial forest enterprises? For example, under current conditions the pulp and paper industry of the northeastern United States faces the severest economic test in its history. Yet, with the exception of the company whose operation is herein described, no other industrial forest enterprise has conscientiously adopted and carried out sustained yield management. That this company has been able to maintain its timber policy in the face of general economic demoralization would seem to argue strongly in favor of sustained yield management and makes a brief description of it timely.

It was in 1910 that Finch, Pruyn, & Company, Inc., of Glen Falls, N. Y. inaugurated systematic management of their Adirondack holdings. The company originated as a lumbering enterprise prior to the Civil War. With characteristic shrewdness and sagacity and by means of carefully thought-out policies, a gradual shift was made from lumber to the production of pulpwood and the manufacture of newsprint paper; by 1920 the sawmill was completely abandoned. The availability of a paper mill which was constructed in 1905 to supplement the lumbering operations facilitated this change in policy.

In 1908 the Company made application to the U. S. Forest Service for advice and a general examination of their timber holdings. This examination resulted in the appointment in 1911 of Mr. Howard L. Churchill, a trained forester from Maine as the Company's forester. Subsequently other foresters were appointed to the Company's staff under Mr. Churchill, who has put in more than twenty years of service with Finch, Pruyn, & Company.

The Company's holdings have been increased from approximately 150,000 acres (in 1910) to about 200,000 acres. Located in the east-central Adirondacks about 20,000 acres were (in 1910) first-growth spruce, hemlock, and pine, and the balance second-growth softwoods and hardwoods. Lumbering had culled much of the sawlog material on the area prior to 1890; from 1890 until 1907 a certain amount of pulpwood material, eight inches or better in diameter

at stump height, was removed from the area in addition to saw-timber.

Recognizing the necessity for a firm foundation upon which to base its future policies of management, Mr. Churchill in 1911 undertook a general forest survey of the Company's holdings. This initial cruise extended over a period of two years and upon its completion a great amount of valuable data had been obtained, including:

- (1) A system of maps showing timber and topography.
- (2) Detailed and accurate information concerning the conditions of timber on each watershed or logging unit.
- (3) Volumes (estimated) of the commercial pulpwood species, spruce and fir.
- (4) Recommendations for logging operations and general conduct of the work.

Such growth figures as were available at that time indicated that although the forest conditions were reasonably satisfactory, the annual increment was probably insufficient to meet the mill requirements, and that, therefore, continued cutting would soon exhaust the growing stock.

Accordingly, the long-term forest management became an integral part of the Company's policy, and a working plan was prepared for guidance with due regard to successive crops of timber. This policy of forest management was conceived by the Company as a business proposition, taking into consideration not only the necessity of continued wood production, but the practicability of such a policy as part of its enterprise. The forestry (Woodlands) department has confined itself within those limits compatible with reasonable economic practice, but due to the remarkable spirit which has prevailed between the executive and technical personnel of the Company, has succeeded in carrying out many desirable silvicultural practices for the future upbuilding of the growing stock.

Realizing that, on the basis of the timber owned in 1911, continued cutting would at the rate then in practice exceed the sustained yield, it was decided (1) that a certain amount of pulpwood would be purchased each year in the open market; (2) that this purchasing would continue until the growing stock had reached a capacity capable of eliminating the deficit; and (3) that favorable additions would be made in the timber holdings of the Company.

After following this plan for over a decade it became apparent to the Company that more accurate knowledge of growth was essential to the proper management of its timberlands. In 1923 a comprehensive growth study was undertaken by A. B. Recknagel of the Department of Forestry, Cornell University in collaboration with the Company's foresters. The additional data gathered enabled the more effective analysis of the problems of management and silvi-

culture. It showed a sustained yield of 35,000 cords yearly of spruce and fir—still, however, 7,000 cords short of the then mill requirements. Furthermore, considerable attention was given to the problem of land classification and in the years that followed this resulted in a carefully worked out system, a distinctive feature of which is the designation of lands below the margin of profitable pulpwood timber growing. The classification (cf. *Jour. Of Forestry*, November, 1931 pp. 429-431) involves too great complexity to permit a detailed description here. It suffices to state that the basis for type separation depends largely upon the amount of available spruce and fir pulpwood of merchantable or near-merchantable size; however, other factors affecting the productivity of the stands and the conditions for logging operations are taken into consideration.

The classification survey was completed in 1930 and 1931 and was accompanied by a thorough check of the estimates for 1911 and of the growth study of 1923. These confirmed the previous figures. The Company is now possessed of more exact knowledge of its timber properties than is perhaps any other eastern company and its management policy rests firmly on a basis of sustained yield, whereby the present stand is cut conservatively and a second cut is expected at the end of a cutting cycle of from 20 to 25 years.

A most important factor in the Adirondack region upon which to base the selection of stands for cutting is the presence or absence of advanced growth. The subsequent restocking of those cut-over areas, upon which advance growth was absent at the time of cutting, progresses very slowly or may fail completely. The danger of loss from windfall also plays an important part in the determination of cutting methods. Although the pulpwood species are naturally adapted to selection cutting, caution must be exercised to prevent excess openings in those stands containing a high admixture of these shallow rooted species. The danger of windfall loss is appreciably less in the mixed hardwoods-softwoods stands but unfortunately the proportion of the hardwoods increases at the expense of the spruce and fir regardless of the method of cutting practiced. The cutting of the commercially worthless hardwoods involves unwarranted expense and in addition would cause considerable damage to the spruce and fir undergrowth. Upon the advice of Mr. Austin Cary of the U. S. Forest Service, experimental girdling of hardwoods was undertaken in 1925 and at the present time several thousand acres have been selectively girdled. The acceleration of the released undergrowth and the



favorable influence upon the site by the gradual opening up of the stand is very encouraging. However, it is most likely that any future girdling will be restricted to releasing nearly merchantable spruce and fir on which the additional increment will be available by a cutting within ten to twelve years. Expenditures of this nature are prohibitive when applied to the undergrowth of pulpwood species due to taxes, interest, and the risks of the investment.

The present practice of controlling cutting involves the marking of each merchantable tree in advance of the logging operation. This work is accomplished by a crew of three trained foresters who select the trees for cutting on the basis of the principles stated previously. The Company is thereby afforded, prior to the operation, a very accurate estimate of the amount of timber to be cut. The residual stand left generally consists by volume of 20% of the spruce and 10% of the fir as a result of this selection cutting. The marking is directed to all spruce 8 inches d. b. h. or larger and to all fir 6 inches d. b. h. or larger but the diameter limit is very flexible.

The typical logging conditions may be described briefly as follows: topography ranging from gentle slopes of the foothills to extremely rough and precipitous; moderately stocked stands of small size pulpwood; long winters with moderate or deep snow; and many driveable lakes and streams. The cutting begins generally by the middle of May and continues into the month of August. Ordinarily three man crews use axes, crosscuts, and pulpwood saws for felling and bucking. In accordance with the state requirement, the trees are limbed and topped to the three-inch diameter. To facilitate stream driving the bark is peeled by means of an axe and spud. These peeled tree-lengths may then be skidded to a head-block or bucked up at the stump depending on the logging chance. Other devices for placing the wood on the stream banks include the use of chutes, "bobbing," chaining, or hand-rolling methods wherever each is most applicable. Hauling on two sleds with pulpwood racks is the general practice. The 100-mile drive of the 4-foot peeled bolts down the Hudson river begins the following spring after the ice breaks up and lasts for about two months with a loss of less than 3% of the wood.

The circumstances under which this company has successfully developed its policy of management may only be possible of duplication in limited cases, yet it is significant to know that the Company believes in a policy of sustained yield management as a partial solution of the industry's present problems.



## ON GOING TO WORK IN FORESTRY

ELLERY FOSTER, '28

TO JUDGE from some of the talk we hear one would think that college makes a man over. Especially from "practical" men and from college men who have but lately reached the sophomore stage in the graduate world of practicalities does the idea emanate that the college man is remarkably different from his less-schooled brother. "Impractical," "inexperienced," "cocksure," "not content to serve a long apprenticeship in lower positions," "don't know what hard work is, not willing to learn," "thinks a college degree entitles him to better than average treatment." Such are the accusations. That they are just in certain cases there is no disputing. But that they apply as a blanket to the majority of college men is no more true than to say that all uneducated men are hard workers, practical, patient, grateful for even the smallest opportunities.

The truth probably is that colleges get a large number of men who would react in the same way to their first "practical" assignments had they never gone to college. But this does not mean to say they are men who will or will not develop into good workers. It is an axiom of business management that the type of man who will make a good executive is the hardest man to train. This does not mean that making himself hard to manage is a good way for a young man to make a favorable impression on his first employer. It is a way to make him lay awake nights wishing he had never heard of you.

The army and navy are first-class examples of the actual struggle there is to fit men into administrative positions. Cadets and midshipmen fresh from the academy are popularly considered a menace to the national safety by their seasoned elders who, years since, went

thru the same "shaking down" and seasoning process as confronts the newly made officer. It is a wise sergeant who can take the orders of a green West Point lieutenant and do the right thing in spite of them, say old service men.

By the nature of the employment usually found by foresters the situation is similar to that in the Army and Navy. On the whole the college forester is slated as the Annapolis and West Point military man, for an administrative position. It is unfortunate when the man proves unqualified for such work.

There is one thing about the average college man's attitude that I think can be criticized. He often displays too firmly a conviction that his college training has left him eminently better fitted for a good job than is the non-college man. This is unfortunate. For in many ways he is more poorly fitted for his first positions of responsibility than a "practical" man who has been learning on the job while the college man has been getting his formal training.

If the college work were actually rigorous and made stiff demands upon the students powers, weeding out a fair percentage of the less capable, the man with formal training might with some justice demand a more responsible position with better pay and better working conditions right from the start. But college work does not require as much of the student as many a job, in the way of either brains, ability or a willingness to work. In fact, college is often made a very pleasant four-year vacation, which the sons of fortunate families enjoy before entering into the affairs of a workaday world. Such a vacation is a nice thing. And it may do a lot for one's future enjoyment of life. It may even increase his potential value as a citizen. But a four-year vacation, or four years on part-time work does not entitle a man to special consideration when he decides to enter the hurly-burly of life proper. And many a man does appear to come away from college with just such notions. And that is the major source of the criticism which is so often heaped upon him.

I believe that so-called "practical" courses taught in college often do more harm than good. The forester, for instance, who got an "A" in the course in Fire Protection may think his notebook contains a lot of things that the old-timer hasn't got in his head. It takes time to dissipate such illusions and it may well be that knowledge of such practical matters could well be left largely for learning on the ground.

A fellow who is not hopelessly cocksure will find a hundred things of which he feels a need for knowledge, and the practical things he can get much more readily out on the job than the fundamental or basic sciences which the colleges were originally created to teach. For the four under-graduate years at least, there is little room for more than a smattering of the practical if the basic training is to be well supplied. It is to be regretted that there are not more schools

like the New York State Ranger School for the training of practical men. A year at such a school would fit nicely between high school and college. For the "practical" jobs it is sufficient formal training in itself.

In these days when jobs are scarce to find and uncertain to last when found, a man considers himself lucky to land any kind of employment. Whether the condition is temporary or whether we are due for a long period of "hard times" no man knows. For a forester, rather than go back to the parental roof to "wait it out," or to make a more drastic move "back to the soil," I believe a wiser course is to seek employment somewhere in the industry or the profession even at next to no wages. Even on the poorest jobs there is opportunity to learn the practical things a technical man must know before he becomes valuable to his employer. The large number of men who are taking advanced college work while waiting for things to pick is a good thing. There should be as great a number, however, serving an apprenticeship in the forest industries and in forestry. There is need for an aggressive move in this direction. College men should get behind the idea and draw the attention of the industry and the profession. If more thought were given the subject I feel sure an effort would be made by both lumbermen and foresters to take on well-qualified college men who express a willingness to work for experience and only a little more than expenses.

The forest industries need a supply of fresh blood, and here is their chance to get some and train it cheaply. For the sake of forestry the more foresters that can be gotten into the forest industries the better. I am one of the old-fashioned men that believe forestry is one thing, lumbering another. Yet I see the advantage of having lumbermen with a forester's outlook.

I am far from convinced that forestry on private lands is as hopeless a proposition as the compound interest boys with their formulae would have us believe. A forester that knows his stuff, both forestry and lumbering, ought to be able to show a timber-owning lumberman some mighty interesting figures anent the relative returns from destructive versus sustained yield management. Garver and others have shown that the cost of clear-cutting is much greater than the cost of intelligent selection cutting. Any economist can demonstrate the advantage of preserving a good volume of growing stock merely as a speculative investment in stumpage futures. The interest of the public in sustained yield production has been preached enough so that it is very likely local governments, properly approached, will make concessions in the way of taxes, provided they are given sufficient guarantee of the permanency of an operation. Sufficient effort has not been expended in this direction.

In the field of utilization a man with brains and ideas ought to find profitable work that will take the best there is in him. Cellulose chemistry, wood-pulping, lumber as such, all have possibilities for

new and better uses. In regions where wood substitutes have to be shipped in the "live at home" idea provides an opportunity for forest products to hold their own against nearly all substitutes.

The fullest development of this idea will require the perfection of better wood-burning furnaces and stoves than have yet been made for home use, industrial heating and central heating. It may conceivably even lead to the manufacture of motor fuel from wood and other vegetative products. Germany claims to have learned how to make bread from wood more cheaply than from wheat flour. The fact that she was making sugar from wood at the end of the war more cheaply than it could be produced from sugar beets is a matter of history. The fact that production was stopped for the sole purpose of saving Germany's beet-raisers should not be forgotten.

The future of forestry and the forest industries is far less gloomy than that of many an industry and profession. The fact that our raw material is replaceable, the fact that public opinion is very favorable to forests as recreation grounds, the fact that a producing forest is useful in so many more ways than a cultivated field, the fact that the most productive forest is the one with a large volume of growing stock, the fact that a large volume of growing stock is the best sort of insurance against possible war-time needs for raw material, the fact that growth can be removed from the forest without depleting the capital stock, the fact that the capital and interest of the forest are adaptable to such a wide and ever-widening circle of uses, all these things should give foresters increased courage, increased conviction, increased faith that their work is not only worth while, but that it has possibilities for earning both the forester and the lumberman a good living.



*Administration Building*

## SOIL EROSION

*As seen by a field assistant*

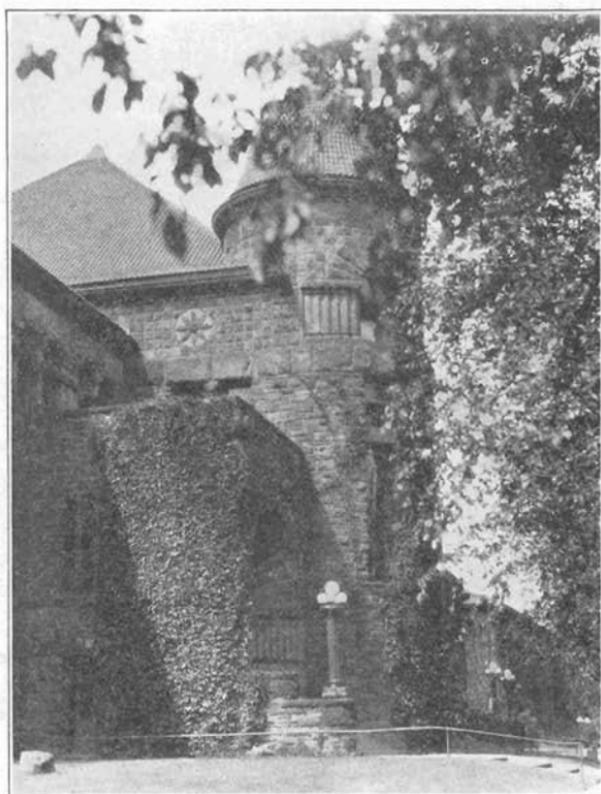
T. E. MAKI, '30

IN THIS era of hard times, moratoria, jig-saw puzzles and other scourges of lesser consequence it might be well to confine one's belletristic attempts to some cheer-emanant subject such as, for example, the return of prosperity, or three-point-two percent beer. However, this dissertation is not intended to be orthodox in that respect; not calculated to buoy the spirits but to sadden and to depress them. For it deals with some of the unpleasant aspects of that "national menace," **soil erosion**, affecting certain portions of the Gulf States, especially the loessial uplands of Mississippi. As such, this lays no claim to inerrancy, sufficiency, nor finality; it essays merely to record some casual observations of a field assistant.

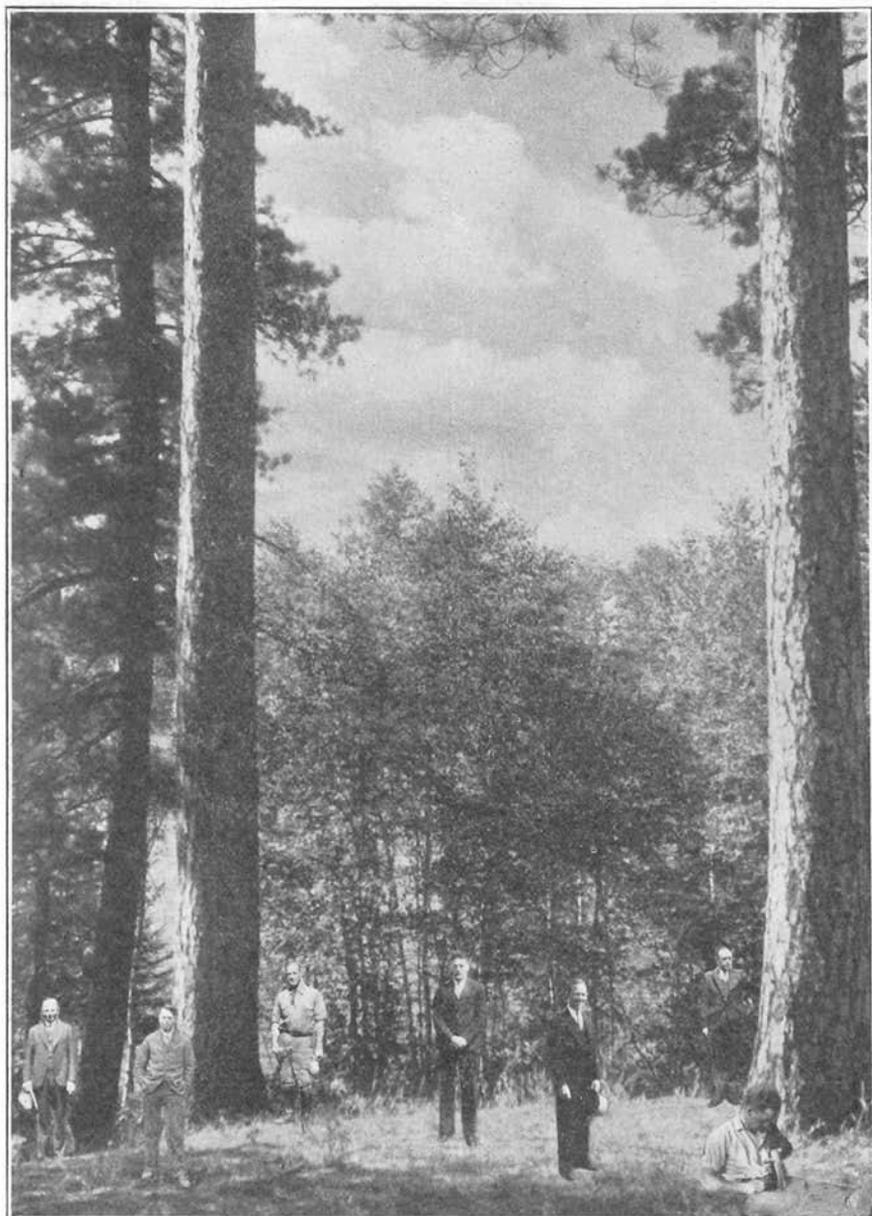
Contrary to popular conception, a large portion of the land area of the Gulf States consists not of swamps but of well-drained uplands, some of which has rather abrupt relief. The surface features of the region have been carved from deposits of marine and aeolian origin; coastal plain sediments overlaid by loess, varying in thickness from a thin veneer to several scores of feet in depth. The soils for the most part are especially erosive in character; they freeze but partially during the winter months, and the period of alternate freezing and thawing may actually extend over two or three months. Not infrequently the rainfall exceeds sixty inches per annum, and the bulk of this precipitation comes in the form of torrential showers. These factors alone are sufficient to initiate or to augment destructive erosion. But they are not forced to work alone. The Southern agriculturist, like most agriculturists elsewhere, has definitely allied himself with the destructive natural agencies; has courted and invited disaster by carrying his cultural operations even on the steepest slopes; by failing to make wider use of protective winter cover crops; by frequent and indiscriminate burning of the native vegetation in pastures, woodlands, and waste areas; and by fostering a tenant system of farming, with all the consequent evils—lack of fealty, indifference to soil impoverishment and wastage, and the like. When one considers the combined force of these artificial and natural factors, one need hardly conjecture as to the result. It has meant the virtual abandonment of fifty to seventy per cent of the original farm acreage in some counties. It has encouraged tax delinquency, with subsequent reverting of large parcels of unproductive land to the

state. Fields that were once "white with bursting cotton bolls" have been so dissected by washes and gullies that they are now useless wastelands. "Broad acres" have been reduced to pitiful strips and patches. Stream courses have been filled, fertile bottoms ruined, by heavy deposition of erosional derbis from the uplands.

But here and there one can still catch a glimpse of the thriving romantic South, the South that used to be. The huge manor houses of the planters still stand, decadent now, but attesting to the glory of former days. Forlorn-looking cabins still clutter the country-side, lending to it a picturesqueness of singular charm. And the climate hasn't changed. The South is still a land of long summers and mild winters, abundant sunshine and rain; a land where red buds bloom early and red birds stay the year around. But its rich heritage has been squandered; the productive capacity of its basic resource badly impaired. It is just possible that a new "badlands" area is being created out of a region which once was the heart of fertile agricultural land.



*Geology Building*



*Babes in the Woods*

"Doc" "JOHN" "CHEYNEY" "MAW" "CHASE" "REES" "BROWN"  
*(Schantz in the Bushes)*

THE FACULTY AS REVIEWED BY  
 PROF. CHEYNEY

*Mr. Schmitz is the man at our head,  
 Than be idle he'd rather be dead;  
 He's on all the committees  
 In both the Twin Cities,  
 And knows what each student has read.*

*For dates and statistical media  
 J. H. is our encyclopedia.  
 His desk is piled full  
 With a ton of this "Bull"  
 Which he always is ready to read to ya.*

*Prof. Cheyney's old courses are pie  
 (It's the kind that one gets in one's eye).  
 When he hears the birds tweeter  
 And faces St. Peter  
 He'll surely ask Petie, "and why?"*

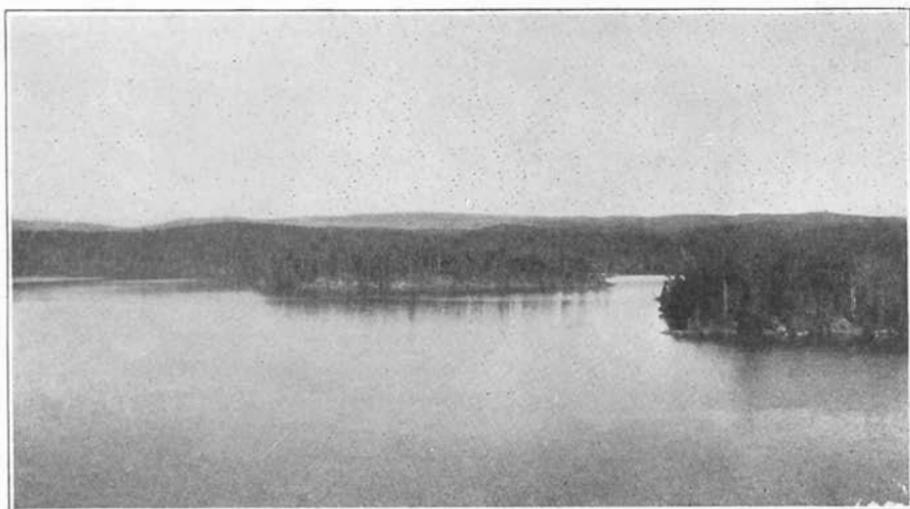
*Mr. Chase made a study of gas  
 (If anyone has it he has),  
 He just punctured a tree  
 And said, "Now let me see",  
 And he heard the tree bark out a "raz".*

*He studies and studies at Botany  
 With nothing to break the monotony.  
 To keep up with Deters  
 Just gives one the jeeters—  
 Of leisure he's really not got any.*

*Mr. Rees is our expert on wood,  
 With such dope he's undoubtedly good.  
 With a sharp section cutter  
 He earns bread and butter,  
 And a little additional food.*

*Mr. Brown handles figures en masse,  
 Till he stuns every man in the class.  
 He draws graphs, he draws curves  
 Till it get on their nerves;  
 And he hands them some mean apple sass.*

*Mr. Hanson's the boss of Cloquet;  
 He's the man who demands that we pay  
 For windows we broke  
 In some practical joke;  
 But he can't see the joke, so they say.*



## A PAVEMENT FORESTER SPEAKS

CHARLES L. DOCKSTADER, '23

YOU will probably wonder how one, who has completely disassociated himself from an active participation in the science of Forestry, possesses the audacity to break into print in a publication of this kind, devoted, as it is, exclusively to Forests and Forestry.

It is done, you may be assured, with a feeling of abject humility and with sincere apologies to those boys of "23" who are carrying on in Forestry's front line and who will be subjected to the ignominy of being obliged to read this treatise by a pavement forester.

In the language of Larry Ho, therefore, my heart goes out to Jack Frost, our Cloquet citizen, Eddie Probstfield, the African rubber man, Gump Nelson, the mountain tamer, The Big Dane, Gunnar Fenger, (bless his old whiskers) and all of the rest of that illustrious class, who have scattered to all corners of the earth.

In Minnesota, where the problem of conservation has long been a political football, so much space in our daily press is devoted to the controversy that even the most cursory reader receives a liberal education on the subject. It becomes doubly difficult, therefore, for one who has trod the pine needles, barked his shins on buried logs, and attempted to hold a steady compass where crow-like mosquitoes swarmed and swarmed, to entirely divorce himself from the problem.

Occasionally a project arises in which even the pavement forester may become vitally interested.

Such a project lies behind the dreams and ambitions of the Quetico-Superior Council and because of my belief in the feasibility and worthiness of their plan to save the lake and forest regions in northern Minnesota and southern Ontario for the people of the two nations, I am influenced to do my bit to proclaim it to the uninitiated.

It is entirely likely that many readers will be more familiar with the project than is the writer. On the other hand, I know of forestry students and others, to whom this publication will go, strange to say, who have never heard of this Gargantuan job and who, once they have received their baptism will become ardent supporters.

Anyone who has visited any portion of the border lakes region, either at Rainy Lake or the Namakan chain or as far east as Pigeon River or in any of the tributaries to the south must be impressed how totally unsuited the area is to agriculture or settlement. This obvious fact, has not prevented exploitation of the forests, water and wild life of the region—a priceless public heritage—for private gain. Already the virgin timber from the American portion of the watershed is practically gone. Only through generations of careful guidance, such as the U. S. Forest Service proposes, can there be any hope of restoration. Much former grandeur has been destroyed forever, especially where wild rice beds and wooded shore lines have been flooded. If the Quetico-Superior Council is successful, however, and success of their project depends largely on public support, further damming, flooding, draining, timber-slashing, game slaughter, and exploitation of every kind will become a thing of the past. This original piece of America will be kept for the use and enjoyment of all the people.

Briefly, here is the plan:—

The Council proposes to set aside approximately 10,000,000 acres of land in northern Minnesota and southern Ontario as a lasting peace memorial between Canada and the United States, the region to be left in its natural state for the enjoyment of all our people.

The arrangement will be made by treaty between the United States and the Dominion of Canada, and, if accomplished, will promulgate the following principles:

1. Park-like conditions, free from logging, flooding, draining, and all other forms of exploitation will be established and maintained on all visible shores of lakes, rivers, and islands under public control.

2. All the hinterlands, not visible from the waterways will be administered under modern forest practices for the continuous production of a maximum timber supply.

3. All game, fish, fur-bearers and other wild life will be managed for maximum natural production.

4. These ends to be pursued under the guidance and direction of an international board, representing forest, park, and biological authorities from both countries.

The resulting reservation—four times as large as Yellowstone—will be in the nature of both park and forest. While it will be under the jurisdiction of the U. S. Forest Service, its lakes and streams will be protected as in a national park.

The writer feels his own incompetency adequately to describe this project but printed matter is freely available from the Quetico-Superior Council at 1218 Flour Exchange, Minneapolis. This work is under the direction of Ernest Oberholtzer, President of the Council, who speaks with ability and authority. Having spent 20 years in this lakeland wilderness, he knows it intimately and, as the main proponent for years in support of the public program, his word can be taken without prejudice.

Mr. Oberholtzer, however, is by no means alone in the championing of this cause. He is merely the representative of innumerable forestry, conservation and civic organizations in both countries, including the Izaak Walton League, the American Game Protective Association, the General Federation of Women's Clubs, the Federated Farm Bureaus, the Minnesota Junior Association of Commerce, and both the American and the Canadian Legions. The National Board of Advisers includes such public leaders as Dr. Henry Van Dyke, Jack Miner, Dan Beard, Kermit Roosevelt, Ernest Thompson Seton, Dr. Felix Adler, Jane Adams, William Beebe, Stuart Chase, Irvin S. Cobb, Walter Damrosch, Zona Gale, William Green, Dr. Vernon Kellogg, Viljalmur Stefansson, Carl Sandburg, Lorado Taft, Professor E. G. Cheyney, and Dr. Raphael Zon.

Much has already been accomplished toward fulfillment of this program. In 1929 the State Legislature memorialized Congress to pass an Act protecting the American portion of the lakeland. On July 10, 1930, after a long and bitter contest, the so-called Shipstead-Newton-Nolan Act finally passed Congress without a dissenting vote and was approved by the President. This Act designates an area in Cook, Lake and Saint Louis counties in northeastern Minnesota, covering the border lakes and their tributaries from Rainy Lake to Lake Superior, and forbids any further alteration of water levels without the consent of Congress. It thus declares a recreational policy for the protection of islands, beaches, waterfalls, rapids and wilderness shore lines.

Meantime, however, in spite of this Act, various logging and power interests are making a determined effort to block and destroy the public program for utilization of the region. The International Joint Commission for the past eight years has been considering the feasibility of power development all along the border. Private interests are still hoping to secure a favorable recommendation from

this Commission and, thus armed, to go before Congress and demand an amendment to the Shipstead-Nolan Act. A public hearing will probably be held on the subject some time during the coming spring. It is highly important that the public groups under the direction of the Quetico-Superior Council shall be able to present their case fully and forcibly.

My appeal will fall, I know for the most part, upon fertile ground and will not experience any setbacks along the trails, around the campfires, or in the laboratories of the forester's habitat.

The vast enterprise, if carried to accomplishment, will provide a playground spot, not for Minnesota, not for the United States, but for the entire world.

In addition, the administration costs will be negligible and, with scientific forest management, the future profits secure.

You can be of assistance here by lending your moral support, spreading this gospel to others and augmenting the voices of the thousands of supporters already pleading in behalf of this excellent cause.

And so speaks an ex-forester: First, because he still knows a good thing when he sees it; second, because still having his same old generous nature, he enjoys sharing such things with others, and, third (and the truth), because the editor was tolerant enough to allow a rank outsider the freedom of the press.

Criticisms, both razzberries and hurrahs, will be gladly received from all the old grads who, by this time, probably are looking for the double-bitted axe.



*The Spell of the North*

## PROGRESS ON THE NEBRASKA NATIONAL FOREST

BY ARTHUR L. NELSON, *Forest Supervisor*, '23

THE Nebraska Forest is now an outstanding example of what Foresters with faith and funds can do. The dreary, grass covered hills are now clothed with a dark green carpet of evergreens. The older plantations are being thinned and pruned and intensive methods of Forestry must be practiced.

The Nebraska National Forest was established in 1902 for the purpose of determining the practicability of growing forests on the rougher portions of the Nebraska sand hills and of supplying wood for the large number of farms and ranches in this rapidly developing country. Up to January 1, 1933, 12,368 acres of coniferous trees had been successfully established on this Forest. The first plantations of coniferous trees were set out in 1903. During the earlier years of the project, when experimentation with species and methods was in progress, the survivals were poor so that it was found necessary to plant the trees close together in order to obtain a stand. From 1909 to 1911 inclusive, trees were planted two feet apart in rows about six feet apart. Weather conditions were favorable and excellent survivals resulted. Consequently, these forest plantations soon became overcrowded and by 1920 it was evident that some of the trees would have to be thinned out.

Thinning a growing forest is as essential in maintaining proper growing conditions as thinning is to any other agricultural crop where spacing of plants is important in obtaining the maximum yield. In order to be prepared with the information necessary as a basis for extensive thinnings, a number of experimental thinning plots were established in 1920 and 1922 in stands of jack pine (*Pinus banksiana*) and Scotch pine (*Pinus sylvestris*), planted in 1910 and 1911. Periodic growth measurements of the trees left showed that the greatest average diameter increases were made on the plots with approximately 700 trees per acre, but the greatest average height growth was in plots thinned to 1,100 trees per acre.

In 1929, when the first thinning and pruning work was done, we had to resort to detailing forest officers from other forests to do the job, as the local people were not interested. In fact we had trouble at first to sell the cut material resulting from the thinning as the "natives" did not know how to use wood. However after the first two loads of poles had been hauled out and stored in the back yard of one of the Halsey homes we began to get inquiries and the demand equalled our output. The price obtained varied per cord

depending upon the species and accessibility to the highway. The first five cords were sold for 50 cents per cord. After the demand grew the price per cord went up to \$1.50 and in a few sales the product was sold on a lineal foot basis of 16 cents per 100 l. f.

In 1930-31 very little work was done but the demand for wood was growing. We felt that it was so great that the local people would go as far as thin and prune the stands for the resulting product. Last fall we worked on the basis that the economic conditions were such that our time had come to get a large number of acres thinned and pruned. We were surprised at the results and so far have issued some forty Administrative Free Use Permits covering about one hundred and thirty acres of jack pine. The permittee prunes up the trees on the area allotted him and then the District Ranger goes through the stands designating by marking or having the permittee cut such trees as he feels are to be removed. The permittee then may do as he pleases with the wood obtained which comes from the main stem of the tree cut and any limbs larger than one inch in diameter. The smaller limbs are scattered on the site for soil improvement purposes.

The stands being thinned are jack pine plantations 15 or more years in the field. Some Scotch pine planted in 1910 and '11 has also been thinned and pruned. These plantations were planted following a 4x6 foot spacing and some even closer. The average product resulting from this thinning from below after leaving 700 to 800 trees per acre is a stick 3 inches to 4 inches at the butt and about 14 feet long. A total of four cords per acre of this small material is the extent of the returns to the cutters.

When one considers the cost of doing this work with detailed Forest Officers the saving in cost of producing our ultimate product is considerable. It required eight man days to thin and prune an acre in 1930 at a cost of \$48. An acre yielded an average cash return of \$6.00 making the net cost \$36 per acre to thin and prune. Under the present method the thinning and pruning is costing the Service only the time of the District Ranger needed in supervising the permittees. This averages about \$3.50 per acre.

The "natives" are learning the use and value of wood and the Forest is benefitting by getting needed thinning work done at a negligible cost.



## A LABORATORY BEATER TEST

R. D. THOMAS, '29

A BEATER may be briefly defined as a machine used in the mechanical treatment of pulp preparatory to conversion into paper. Beating pulp is usually the first step in the conversion process. Various terms have been applied to the action taking place during this mechanical treatment; but for the sake of simplicity, the term hydration is chosen although it is somewhat of a misnomer—brushing is perhaps a better term. Many different mixtures of pulps are beaten; sometimes a long fibred pulp is beaten for a relatively long time while a short fibred pulp is added to it with very little, or no beating at all. To the paper maker, all pulps are composed of fibres or groups of fibres. There is no distinction made between the true fibres and vessels of the hardwoods and the tracheid and parenchyma cells of the soft woods, except in so far as the physical dimensions of these cells are concerned. Then the cells are either long or short fibres. While there are four pulps in general use, namely, groundwood, soda, sulphate and sulphite, only the last two receive any considerable beating treatment. Of these two, it is the sulphite pulp with which we are primarily concerned. The purpose and nature of a laboratory beater test on that pulp will be described.

The purpose of beating pulp in the paper mill is to prepare the pulp for ultimate conversion into paper. The purpose of a laboratory beater test is to determine the strength developed by subjecting a pulp to a definite treatment under controlled conditions. The beating action increases the strength of the pulp, consequently, the strength of the paper. A harsh feeling pulp is transformed by beating into a slippery feeling pulp. This slippery feeling is noticeable after the pulp has been sufficiently hydrated or brushed, and remains until such a time as this brushing action ceases and an apparent cutting action takes place. It is essential that all conditions during a beater test be kept constant in order that all results may be comparable.

The laboratory beater test is a means to an end, that is, samples of the pulp being tested are removed from the beater at regular intervals for subsequent testing. The intervals may be ten, fifteen, twenty or thirty minutes. The subsequent tests are freeness, strength, tear and fold. The laboratory beater is constructed with a roll in a stationary position revolving at a speed of about 535 to 545 F. P. M. It has a movable bed-plate which is raised to the roll by means of weights placed on the opposite end of a pivoted bed-plate arm. A definite weight placed on the bed-plate arm causes a definite pressure to be exerted by the bed-plate against the roll. Weights generally

used are of fifteen, eighteen, twenty or twenty-five pounds. The density of the pulp mixture is practically limited to 2.0% or 2.5% bone dry consistency. Generally anything higher than 2.5% will not circulate freely while anything under 2.0% is not dense enough to receive proper beating action.

The beater used in the test described is designated as a one and one-half pound capacity Niagara type beater. It is manufactured by the Valley Iron Works Co. of Appleton, Wisconsin. In it are placed 24.375 litres of water at 27° C. and 625 grams bone dry pulp to give a consistency of two and one-half per cent. After the pulp is thoroughly disintegrated, a weight of twenty-five pounds is placed on the end of the bed-plate arm and the initial sample taken. Subsequent samples are taken every fifteen minutes. These samples may be taken using the maximum strength development as a guide, but it is desirable to have tests beyond the maximum strength developed so the guide generally used is that of the drop in freeness. When the freeness test is 100 or less the beating is stopped. It is interesting to note that with the starting temperature of 27° C. each fifteen minutes beating raises the temperature about one degree.

The freeness tester used is the Canadian Forest Products Laboratory standard freeness tester standardized and calibrated by that laboratory. It is desired to have a consistency of 0.3% and a temperature of 20° C. for this test, so the sample is diluted to that consistency with water at 20° Centigrade. Two 500 c. c. consistency tests are made on this mixture to assure accuracy. The freeness test is made in duplicate, one test to check against the other, the temperature recorded, and if necessary, corrections are made to the standard conditions for consistency and temperature. Reasonably accurate charts are available for this purpose. The freeness test recorded is the cubic centimeters drained from the side orifice of the tester. The remaining pulp mixture is used to make sheets of pulp for the additional tests.

Paper is manufactured by weight on the basis of a ream of five hundred (or 480) sheets of a definite size. This weight is known as the basis weight of the paper, and in this test the basis weight used is 32 lbs. for a ream of 500 sheets 24"x36" in size. This is commonly written 32 lb. 24x36x500. To obtain sheets of this weight the pulp remaining from the freeness test is diluted to the proper consistency and enough sheets made to conduct the remaining tests. It is customary to use six sheets for the Mullen bursting strength test, four sheets for the Elmendorf tearing test, and two sheets for the Massachusetts Institute of Technology folding test. These sheets are made on a circular sheet machine four and one-half inches in diameter making a sheet of the same size. They are couched from the sheet machine screen plate onto filter papers, and run through rubber press rolls to give a moisture content of about 66%. They are then dried in an oven at 105° C. and later placed in a constant humidity

room at 65% Relative Humidity and 70° F. temperature for testing. Testing on the sheets is done only after they have been thoroughly conditioned. The sheets are weighed and their diameters measured. The sheets shrink in diameter due to the hydrating effect, and as this has a direct effect upon their basis weight it is necessary to make corrections to compensate for this shrinkage.

It was stated above that the basis weight used for this test is a 32 lb. sheet. This is true for the Mullen bursting strength test, but it has been found advisable to use a higher basis weight for sheets for the tearing and folding tests. A 40 lb. sheet 24"x36"x500, is used for these two tests, for the reason the 32 lb. sheet is a bit too light to fully represent the resistance of the pulp to tear and fold. In that connection, other methods of testing pulp samples from a beater test call for basis weights of 60 and 80 pound sheets, also on the ream basis of 24"x36"x500. This means that the basis weights to choose from are 32, 40, 60 or 80 pound sheets. The thirty-two and forty pound sheets are made round, being four and one-half inches in diameter. The sixty and eighty pound sheets are made square, and can be trimmed to five and one-half by five and one-half inches. The heavier basis weight sheets show higher test results. Partial correction for this difference is made by reporting the results in per cent points per pound basis weight. Even this correction will not show the same results for the same pulp made up into thirty-two and forty pound sheets tested under identical conditions on the same testing machine. It does, however, compensate for any slight difference there may be in a series of test sheets made up to the same basis weight.

The Mullen bursting strength test consists of five tests on each of six sheets, for a total of thirty tests for each set in a series. These are averaged to arrive at the recorded bursting strength for each set. The Elmendorf tearing test is conducted by cutting the set of four sheets to a size of 6.3 cm. (2.5 inches) in one dimension. This strip is cut with a slit after being clamped in the tester so that the actual width of the sheets being torn is 4.3 cm. (1.69 inches). The four sheets are torn together in four places, which is equivalent to sixteen tears on one sheet. The total of the reading for these four tests is the tear test reported. The two sheets made for the folding test are cut into strips 15 m. m. (.59 inches) wide. Six or more of these strips are tested and the results averaged to get the folding test. The results of the tests as conducted are pounds per square inch bursting strength, grams tear (i. e. the force in grams necessary to tear the sheets), and the actual number of double folds the strips will undergo before severance under one kilogram tension.

### An Unbleached Sulphite Pulp Beater Test

Beating Time Minutes	Freeness c. c. Side Drainage	Strength % Pts. - Lb.	Tear Grams	Fold Actual Folds
Initial	747	0	24.9	0
15	659	58.3	84.9	17.7
30	460	83.8	89.5	127.0
45	217	85.2	95.4	198.0
60	102	76.3	86.0	183.0
75	41	62.0	78.7	577.0
90	23	60.8	69.3	702.0

The freeness test figures in cubic centimeters side drainage have been corrected to standard conditions of 0.3% consistency and 20° C. temperature.

The strength sheets tested were 32 lb. 24"x36"x500 and have been converted to per cent points per pound.

The tear and fold test sheets were 40 lb. 24"x36"x500 and are reported in actual grams tear and actual double folds.

The figures shown in the table are results taken from a laboratory beater test on an unbleached sulphite pulp. It is to be noted that the pulp was too weak to show results on the initial strength and fold tests. The maximum strength and tear developed was at the end of forty-five minutes beating time. The fold test at the end of sixty minutes beating time is unquestionably far too low. This particular beater test was purposely carried beyond the freeness drop to one hundred points, but it is quite indicative of the results obtained from a beater test.



## SAILING WITH THE LIGHTHOUSE SERVICE IN ALASKA

HAROLD NILSEN, '34

IN THE spring of 1931 I felt that Alaska offered new scenes and experiences. Within a few moments after the thought struck me, I started to make inquiries amongst the schooners of the halibut fleet in Seattle. The captain of a schooner sailing the next day kindly consented to give me a lift to Ketchikan.

The trip was occupied in taking a trick at the wheel now and then, and endeavoring to learn the mysteries of overhauling halibut gear. A new hand finds himself all thumbs the first few times.

Four days of sailing were required to reach Ketchikan, the first port of call in Alaska, where I went ashore. By the time four more days had passed, the picture of Alaska didn't look so bright. Work was scarce, and the salmon cannery season had not begun. Fortunately, when a week had elapsed, and the board walks had begun to look altogether too familiar, I was able to ship as a sailor on the tender "Fern."

The atmosphere in the foc's'le was congenial from the start. Most of the crew were of Norwegian descent, and many times conversation lapsed into that tongue. When the day's work was done we often played whist, pinochle or cribbage in the foc's'le while the portable phonograph played music from the latest hits to Norwegian dance tunes.

Pranks were in order during leisure hours, and all suffered equally. When the ship was tied up at a saltery for the night, it was practically certain, unless you were the last one to turn in, that you would awaken to find a herring on the pillow. A fellow slept just as well. The sailor who happened to be "Peggy" of the foc's'le for the day had a tough time trying to swab out the quarters.

The tender "Fern" patrols regular beats in the waters of Southeastern Alaska, a division of the 16th Lighthouse District. Its steaming distance averages about 17,000 miles yearly in waters from Dixon Entrance to Skagway and westward to Cape Spencer on the Gulf of Alaska.

The unwatched acetylene lights are tended twice a year in the main. Certain of them, on account of landing conditions, are visited only once yearly except in cases of emergency.

Buoys are taken up at regular intervals, and brought into the lighthouse depot for cleaning, repairing and painting. At such times

new buoys are put in place of the old and the positions checked, for danger spots cannot be left unguarded. The work of picking up and loading buoys on a rolling deck is not easy. For this purpose the tenders are fitted with a low forward well deck close to the water.

Supplies are taken to the lighthouses. At times heavy seas make it impossible to land with the whaleboat, and the tender must stand by until the weather abates and a landing can be effected. Construction trips are made for the purpose of building new lights and beacons. Those already in position are serviced and painted. Inspection trips of the lighthouses with the district superintendent aboard are made at intervals.

Beside the regular beats, the tender makes special trips regardless of gales or calms. A buoy has been reported out of place or a light extinguished. Then the tender must remedy the condition, and not leave the menace to navigation unguarded for a longer period than necessary.

The work always presents something new, and never is it devoid of interest. The element of weather creates conditions far from favorable at times. The crews are ready day and night to fix a light, and put it in commission.

The tenders are ready to stand by to aid any vessel they may sight in distress. At times these instances may be hazardous—with a gale blowing and heavy seas running to make handling difficult.

Since buoys and lights are set at hazardous positions of the coast line, it follows that the tenders must be constantly nosing into danger spots from which all other ships are warned away. In fair weather or foul, they make the sea highway safe for ships.

The crews of lighthouse tenders are experts in the handling of small boats in the surf, and rowing practically every day makes for lusty pulls on the oars. This proved a real asset in the whaleboat race staged by the crews of the four government ships in the port of Ketchikan during the Fourth of July. Each boat was manned by seven men—one of them the cox'n. It was a happy moment when the "Fern" crew crossed the line, and "tossed" oars first.

Thus it is not all routine work aboard the tenders. While we were anchored in a bay, several fishing lines would be over the side. Good catches were made. We watched salmon cannery operations while tied up alongside of some cannery dock. Ashore in the towns of southeastern Alaska, we hiked around looking things over. The principal towns are Ketchikan, Juneau, Wrangell, Petersburg, Sitka, and Skagway. In each one the prevalence of canneries and cold storage plants denotes the main industry—that of fishing salmon and halibut. There was no question about being tied up alongside a saltery—the smell was terrible when the tide went out.

Sitka still possesses remnants of the old Russian settlement. The Russian church is of special interest with old paintings, crosses, etc. Sitka National Monument is a beautiful park, the paths of which are lined with totem poles. In it facing the sea is a replica of the old Russian blockhouse. Across the bay Mount Edgcombe, an inactive volcano with snow on its peak creates a beautiful background.

Juneau, the capital of Alaska, is a gold mining town and a base for prospectors. Several highways have been built leading to scenic points of interest. Our trip by car to Mendenhall Glacier, about ten miles from Juneau, was of especial interest in that we walked about on the glacier, and peered into the numerous crevasses taking great care not to fall into any of them.

Beautiful Taku Glacier at the head of Taku Inlet not far from Juneau is reached by boat. There a solid wall of ice about two hundred feet high meets the sea. Huge bergs are continually breaking off with a thundrous roar.

The inland waters of southeastern Alaska afford one of the best ocean trips in all the world. They are broken up by numerous islands which are indented by deep fjords extending far back. The vista as viewed from a boat is forever changing—mountains, glaciers, icebergs, small fishing boats, and perhaps a couple of whales may be seen spouting as the ship goes by.

During the eight months as a sailor aboard the tender, I viewed these sights many times, and it was with regret that the day came when the "Fern" came alongside the depot dock, and I threw a heaving line ashore for the last time. When the "Princess Mary" steamed south from Ketchikan, I saw the gang on the deck of the "Fern" as it passed the lighthouse docks, and I knew that some day I would have to go back to Alaska, the land of the totem pole.



## WHY BRUSH FORESTS ?

TED NIEHAUS

OUR National Forests include some 70,000,000 acres of land which cannot be classified as commercially important timber land. Some of this land has at one time been forested, but the greater part of it is not capable of producing commercial wood. The bulk of these so called "brush forests" are situated in Arizona, New Mexico and Southern California. Why such lands should be managed at a considerable expense, is a question that may well be raised by one who is not familiar with this section of the country.

The Angeles National Forest offers a good example by which to point out the practicability of brush forests. It is an area of approximately 690,000 acres or 1000 square miles located north of the city of Los Angeles, California. The topography is very rugged, with a minimum elevation of about 1000 feet and a maximum of 10,000 feet, on Mt. Baldy. South and east slopes have a cover of chaparral, usually three or four feet high, consisting chiefly of sages at lower elevations, and grading into a mixture of grease-wood, yucca, scrub live oak, manzanita, mountain mahogany, and various other shrubs as elevation increases. North and west slopes usually have much heavier cover, consisting largely of scrub oak chaparral ten to twenty feet high and a limited amount of live oak and big cone spruce timber scattered about or in small groves in favorable locations. Canyon bottoms usually support a growth of live oak, alder, sycamore, willow, and black cottonwood trees. High plateaus are in some cases stocked with open stands of yellow pine. Elevations above 8000 feet are practically bare. As a whole, such timber as exists is of inferior quality and too widely scattered to be of any importance commercially.

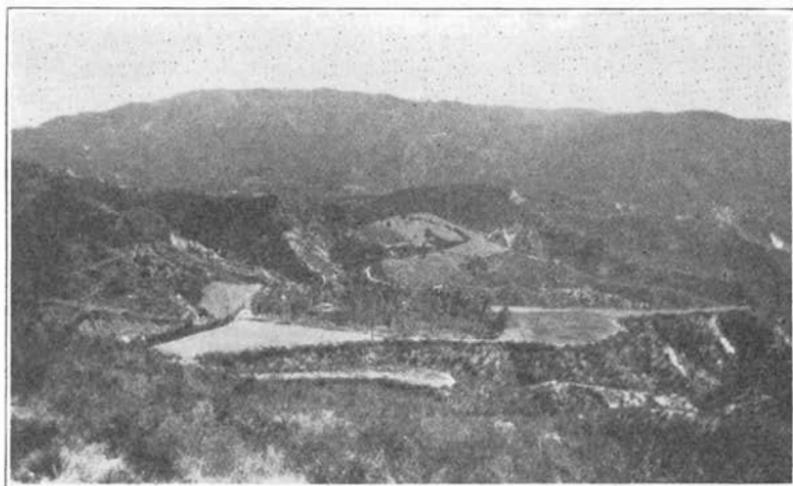
The climate of Southern California is semi-tropical. The late spring, summer, and early fall are characterized by lack of rainfall excepting that which occurs with thunderstorms on limited areas at high elevation; low humidity; hot days; and cool nights. Heavy rains occur from November to May, usually being more or less concentrated into the months of January and February. At elevations above and sometimes considerably below the 5000 foot mark, snow is common in winter. Weather conditions, especially the amount and distribution of precipitation, vary greatly from year to year.

The extensive valley lands of Los Angeles County support citrus orchards valued at \$90,000,000\* along with other crops, notably gar-

\* Angeles National Forest Fire Plan—1932.

den truck. All of these crops depend entirely upon irrigation for the major part of the year. The Angeles National Forest is the source of eighty per cent of the irrigation water used in Los Angeles County, and in addition, of practically all of the water supply of the city Los Angeles and the major part of the supplies of some twenty other towns and cities including notably Pasadena, Poinona, and San Fernando. Although wells furnish considerable water, they can hardly cope with the situation. Their great depth, often a thousand feet, makes their construction costly. The underground water has been thousands of years in collecting and evidently is exhaustable, for even now, the water table has been reduced 200 feet and many expensive wells are going dry. It is therefore practical to depend as much as possible on mountain streams for a water supply.

Since rains are heavy and concentrated into a small part of the year, there is danger of floods on the one hand and of water shortages on the other. The chaparral cover of the watersheds has been found by sad experience to be very important in minimizing these dangers. The vegetation materially increases the absorptive power



*A small ranch making use of a spring to irrigate orchards and alfalfa.  
(Angeles National Forest)*

of the soil by creating in it a definite system of pores or channels and by maintaining a rather loose structure. The duff and moss on the surface of the soil prevent the pore system from being sealed up, and are themselves capable of absorbing large quantities of water. The roots of the vegetation bind the soil, while the vegetation itself breaks the force of rainfall considerably. The importance and

function of the properties mentioned can best be pointed out by comparison of the course of rain water on vegetated and denuded watersheds. On a vegetated watershed, rain strikes the bushes and drips gently to the ground. The moss and duff absorb much of the water and gradually liberate it to the porous soil which leads it on to the subsoil where it then forms a reservoir which feeds springs and streams over a long period of time. The runoff is checked materially in speed by the resistance of bushes and litter, and the soil-binding properties of roots tend to keep it free from silt. On a denuded watershed, the loose, porous surface soil is soon washed off leaving a hard, packed surface which absorbs water with difficulty. Rain hits the ground with a splash and starts down the hillsides gaining rapidly in velocity, and carrying with it particles of soil. The water soon runs together into torrential streams which sweep property aside, and deposit their load of mud over valuable agricultural soils as they widen out over the valleys on their way to the ocean which finally receives much of the water.

The argument is sometimes raised that vegetation uses large quantities of water which might otherwise be used for irrigation purposes. The exponents of this theory argue that denuded watersheds would shed nearly all of the water which could then be collected in large reservoirs at the mouths of the streams. This theory, however, seems impractical. In the first place, reservoirs are a great expense; in the second place, reservoir sites of such capacity as would be required are rare; and in the third place, without the soil binding properties of vegetation, the silt carried down by streams would fill up the reservoirs and render them useless in a comparatively short time.

The proximity of the Angeles National Forest to Los Angeles, Pasadena, and many smaller cities, makes the recreational facilities of the forest quite important. Warm days, cool nights, and lack of rain make camping conditions ideal. Many of the larger streams offer trout fishing. An abundance of deer, quail, wild pigeons, and rabbits provide sport for the hunters. Cool, shady canyons contain choice summer home sites. All of these opportunities draw large crowds from the cities. Eight hundred automobiles are commonly registered on Sundays in some of the more accessible canyons. In the deer hunting season of 1931, two thousand five hundred hunters were registered in upper Pacoima Canyon which has an accessible area of approximately ten square miles. Without the trees and chaparral much of the charm of the mountain would be lost, and game and fish could of course not exist.

Mines, apiaries, and ranches make use of all suitable sites within the boundaries of the National Forests. Miners depend upon stream

flow to carry on their operations which yield them a hard earned living. Many apiaries depend upon the mountain flora for part or all of their yearly supply of honey. Small ranches utilize the water from creeks and springs to irrigate apple and pear orchards, the products of which are superior in quality to valley grown fruits.

To reap the benefits of natural resources most effectively, certain destructive forces must be controlled. The two most important problems met with in a forest are to control fire, and to prevent monopolistic and destructive use of the resources. Both of these problems are exceptionally acute in the Angeles National Forest. The highly inflammable nature of the chaparral along with rough topography and the long dry season makes fire fighting difficult. The scarcity of water makes efficient distribution essential. Obviously the only satisfactory way to handle the situation is to maintain a permanent protective and administrative organization on the



*The inflammable nature of the chaparral along with the rugged topography makes fire fighting difficult. (Angeles National Forest.)*

forest. Such an organization is found in the U. S. Forest Service, a bureau of the U. S. Department of Agriculture.

The Forest Service has gone a long way toward the solution of the problems facing it. With the development of a well-organized fire fighting force and the construction of telephone lines, trails, roads and firebreaks, many of the difficulties of fire control have been overcome. All resources have been so disposed of as to yield the greatest permanent benefit to the greatest number of people. National Forest lands better fitted for mining or agriculture than for forestry

have been opened to those activities. The retention of the balance of the lands in government ownership, and the use of short-term, revocable permits in the distribution of resources have eliminated the dangers of destructive use and monopoly. Fire proofed public camp grounds, and the roads and trails have solved the problems of the recreation seeker. Most important of all, constant contact with the public and rigid law enforcement have spread and established the gospel of fire prevention and conservation.

Although the Angeles National Forest is perhaps of greater importance than other brush forests, proper protection and administration in all of these forests has proved beneficial. The brush forests located in Arizona and New Mexico are of primary importance for the forage they afford the rancher, but are also essential for the protection of the water supplies of many communities. In grazing as in the use of other resources, intelligent management is essential, for each rancher depends on his share of the forage, while on the other hand overgrazing not only impairs the future forage crop but also destroys the necessary protective cover of watersheds.

The importance of our western National Forests cannot be over-emphasized. The permanence and proper distribution of the resources are indispensable to the future development of the West; for upon these factors depends the success of agricultural operations which ultimately are the foundation of prosperity.



1933  
GRADUATING CLASS



WILLIAM E. ACKERNECHT "*Bill*"

Saint Paul  
*Forest Sciences*  
Xi Sigma Pi  
Forestry Club  
Y. M. C. A.  
Summer Work  
Angeles National Forest



GORDON H. CARR

Minneapolis  
*General Forestry*  
Forestry Club  
Y. M. C. A.



FLOYD COLBURN

Minneapolis  
*General Forestry*  
Xi Sigma Pi  
Forestry Club



THURE C. DUVALL

Saint Paul  
Tau Phi Delta  
Forestry Club  
Summer Work  
Selway National Forest, Idaho, '30-'31

JOHN R. FRY JR. "*Waldemar*"



- Saint Paul
- Game Management*
- Tau Phi Delta
- Wing and Bow
- Psi Upsilon
- Silver Spur
- Xi Sigma Pi
- Gray Friar
- Gobblers
- Gopher Peavey Board, 1
- Gopher Peavey Business Manager, 2
- Ag. Student Council, 2
- Forestry Club Treasurer, 2
- Sophomore Commission, 2
- 1931 Homecoming, University Farm
- Executive Committee, 3
- Senate Committee on Student Affairs, 3
- Junior Ball, General Arrangements Committee, 3
- All-U Board of Publications, 3; Pres. 4
- All-U Council, 4

JOHN L. ENGLSBY "*Jack*"



- Minneapolis
- Wood Technology*
- Officers Club
- Ag. Union Board of Gov., Sec. 3 - 4.
- Finance Com.—Military Ball, 4.
- Summer Work
- Blister Rust Control
- Kaniksu National Forest, Idaho

ROSS W. HAVEN "*Jackpine*"



- Saint Paul
- General Forestry*
- Forestry Club
- Intramural Basket Ball
- Summer Work
- Blister Rust
- Clearwater National Forest, Idaho

LEON O. HILL



- Granada
- General Forestry*
- Summer Work
- Gopher Countryman Staff



EMIL KUKACHKA "*Kuky*"  
 Montgomery  
*General Forestry*  
 Forestry Club  
 Y. M. C. A.  
 Newman Club  
 Student Council, 3 - 4  
 Summer Work  
 Blister Rust Control  
 Clearwater National Forest, Idaho



IRWIN H. JOHNSON  
*General Forestry*  
 Xi Sigma Pi  
 Forestry Club  
 Summer Work  
 Blister Rust Control—Idaho, '31  
 Range Research, Intermountain Forest  
 and Range Experiment Station, '32



HARLAN G. JOHNSON "*Harley*"  
 Minneapolis  
*General Forestry*  
 Forestry Club  
 Steward—Junior Corp., '32



SULO OLIVER KOSKI "*Olus*"  
 International Falls  
*General Forestry*  
 Xi Sigma Pi  
 Alpha Sigma Phi  
 Forestry Club  
 Treasurer, Junior Corp., '32  
 Football, '30, '31, '32  
 Summer Work  
 Angeles National Forest, '32

## WILLIAM W. JOLLY "Bill"

Minneapolis  
*General Forestry*  
 Forestry Club, Pres. 4  
 Track Team, 4  
 Summer Work  
 Superior National Forest  
 Timber Cruise, Oregon



## JOSEPH H. LOZINSKI "Joe"

Taunton, Minnesota  
*General Forestry*  
 Xi Sigma Pi  
 Forestry Club  
 Newman Club  
 Y. M. C. A.  
 Summer Work  
 Blister Rust Control  
 Saint Joseph National Forest, 3



## JOHN McMILLEN "Mac"

Saint Paul  
*Wood Technology*  
 Xi Sigma Pi  
 Y. M. C. A., Vice Pres., 4  
 Gamma Sigma Delta  
 Forestry Club



## HARRY C. MILEY "Miley"

Moorhead  
*Forest Sciences*  
 Officers Club  
 Tau Phi Delta  
 Swimming, 1  
 Gobblers  
 Pershing Rifles  
 Forestry Club  
 Summer Work  
 Blister Rust Control,  
 Clearwater National Forest, Idaho





SAINT ELMO NAUMAN "Elmo"

Minneapolis  
*General Forestry*  
 Xi Sigma Pi  
 Forestry Club—Sec. 3  
 Freshman Corp. Pres. 1  
 Summer Work  
 Blister Rust Control, Idaho



THEODORE NIEHAUS "Ted"

Melrose  
*General Forestry*  
 Xi Sigma Pi  
 Forestry Club  
 Swordsmens Club 4  
 Summer Work  
 Angeles National Forest, Calif., '30, '31



GEORGE W. PLANT "Willie"

Saint Paul  
*General Forestry*  
 Forestry Club  
 Gopher Peavey Staff  
 Circulation Mgr., 4  
 Summer Work  
 Angeles National Forest, Calif., '30



DONALD E. PRICE "Don"

Minneapolis  
*Wood Technology*  
 Forestry Club  
 Shakopean Literary Society 1, 2  
 Xi Sigma Pi  
 Scabbard and Blade  
 Officers Club  
 I. M. B. B. 4  
 Summer Work  
 Blandin Paper Co., Minneapolis

WALTER RIDLINGTON "Walt"

Cloquet  
*General Forestry*  
 Duluth Junior College, '30, '31  
 Tau Phi Delta  
 Xi Sigma Pi  
 Forestry Club  
 Gobblers  
 Peavey Board, 4  
 Experience  
 2 Years—Wood Conversion Co.—Cloquet



JOHN A. RUNDGREN "Johnny"

Minneapolis  
*Game Management*  
 Forestry Club  
 Xi Sigma Pi  
 Farm Campus Daily Staff 2-3  
 Fencing - 3  
 Summer Work  
 Bitterroot National Forest, '31



VICTOR O. SANDBERG "Vic"

Hibbing  
*General Forestry*  
 Hibbing Junior College, '30, '31  
 Xi Sigma Pi  
 Forestry Club  
 Y. M. C. A. President, 4, Quartette, 4  
 Gopher Peavey Staff  
 Business Manager, 3 Editor, 4  
 Summer Work  
 Guide—Superior National Forest



HOWARD SMITH "Howie"

Saint Cloud  
*General Forestry*  
 Theta Delta Chi  
 Wing and Bow  
 Junior Corp. Sec.  
 Forestry Club, Sec. 4  
 Ag. Student Council, Treas. 4  
 Summer Work  
 Field assistant to entomologist  
 at Halsey, Neb., '31





ORLO E. SOLAND "Bunny"  
Oklee

*General Forestry*  
Forestry Club, Vice Pres. 4  
Xi Sigma Pi  
Summer Work  
Blackfeet National Forest,  
Trail Construction, '31  
Fire Detection, '32



HENRY STOEHR "Baron"  
Chicago, Illinois

*General Forestry*  
Crane Junior College, 1, 2  
Forestry Club  
Fencing, 3, 4, (Captain, 4)  
Wrestling, 4  
Pack Essay Contest, 2nd Prize



ALICE STUART "One-half"

Chicago, Illinois  
*General Forestry*  
Forestry Club  
Y. W. C. A.  
Summer Work  
Nature Guide at Private Girls Camp  
Mpls. Campfire Camp,  
Lake States Experiment Station



FREDERICK WANGAARD "Fred"  
Minneapolis

*Wood Technology*  
Xi Sigma Pi  
Forestry Club, Pres. 3  
Tau Phi Delta  
Peavey Board, 3, 4  
Student Council, 2, 3, 4, (President, 4)  
Senate Committee on Student Affairs, 4  
Gobblers  
Freshman Corp. Treasurer  
Summer Work—Blister Rust Control  
Kaniksu National Forest, Idaho



WALTER ZILLGITT "Zilch"

Lake City  
*General Forestry*  
 Hamline University, '28 '29, '30,  
 Xi Sigma Pi  
 Forestry Club  
 Y. M. C. A.  
 Summer Work  
 Blister Rust Control,  
 Kaniksu National Forest, Idaho, '31, '32

HARRY CALLINAN "Rip"

Saint Paul  
*General Forestry*  
 Forestry Club  
 Summer Work  
 Cabinet National Forest, '31, '32

ERO E. LAITALA "Ero"

Ely  
*General Forestry*  
 Forestry Club  
 Summer Work  
 Guide—Superior National Forest

WILEY T. FULLER "Dan"

Minneapolis  
*General Forestry*  
 Summer Work  
 Chippewa National Forest, '31

LORENZ R. LINDSTROM "Lindy"

Lakeland  
*General Forestry*  
 Forestry Club  
 Punchinello

DAVE GIBNEY "Gib"

Saint Paul  
*General Forestry*  
 Forestry Club  
 Summer Work  
 Cabinet National Forest, Montana

ROLAND SCHARR

Hastings  
*General Forestry*  
 Forestry Club  
 Wrestling, 3, 4  
 Summer Work  
 Blister Rust Control,  
 Kaniksu National Forest, Idaho

## SUNDOWN ON THE DESERT

BY "PETE" BROWN

I HAD just ridden down from the Sierra Madre mountains and out onto the desert floor. It was while cantering the last eight miles into Victorville, that the sun dropped below the horizon. Shades of purple, blending into red, and then gold seemed to rise from the hot sands like heat waves and stood out against the western distance. The short twilight of the evening lasted only a few minutes, but it was long enough to burn on my mind, unforgetably, the only evening I have spent on the desert.

Silhouetted against that colored west were Joshua trees with their pointed leaves standing out like rapier blades. Other types of cactus squatted here and there in the shadows of the desert; while sage, mesquite, and scrub chaparral in their conquest for life extended heat-withered growths toward the heavens.

Blue as sapphire was the zenith and here and there a white crystal star twinkled in readiness for the ensuing night. The west lost its diversity of gorgeous coloring and transformed into an ether of golden mist. The heavier purple hue hovering close to "Mother Earth" seemed to rise from the very sands at my side, which in the twilight appeared an Arabian brown. As the fleeting moments of evening hurried by, the deeper hue grew darker and expanded phantom-like, forcing the lighter shades to encroach upon the gold. No eye, or hand of man could now draw the line that marked the adieu of day and arrival of night.

Several times in the dusk I saw collie like coyotes bound from nowhere, dash along the highway and disappear again into the shadows. Their evening chorus in the distance faded with the western shades, and died. The death-like silence of the desert was once again encamped.

Sundown on the MaJava desert had come and gone, night was in full custodianship and only the deep roar of my motor broke the silence as I rode on toward another day.

## SPORT HIGHLIGHTS

GEORGE PLANT, '33

THE athletic achievements of the Forestry College for the past year seem quite worthy of mention in the student publication. Although no All-American athletes of the high caliber of Herb Joesting were designated from our ranks, a large number of foresters participated in sports this year.

From International Falls, the home of several well-known Minnesota athletes, came Sulo Koski to carry on the glory of this northern border town. Koski excelled in the great sport of football and received major letters in 1931 and 1932 as well as a minor letter in 1929, having received each of these awards from a different coach, namely Spears, Crisler, and Bierman. He played at a guard position and in 1931 teamed up with Clarence Munn. Koski also tried his hand at the "grunt" and "groan" game and succeeded in winning the heavyweight division title in the intramural wrestling contests of 1932. Added to these attainments, he showed his scholastic ability at the same time by being selected for Xi Sigma Pi.

The past year's president of the Forestry Club, Bill Jolly, was certainly on his toes in more than one way. Bill placed second in the high jump event at two of the Big Ten indoor track meets this past winter, but due to graduation at the end of the winter quarter, he could not be in the outdoor meets this spring.

Several more of the foresters have competed for places on varsity teams and some have succeeded. Among these are Francis "Bubs" Moore and Roland Schaar who both competed for the U of M on the cross-country team and also tried for positions on the wrestling team. Ralph Graves also worked out in the latter sport.

The intramural contests of basketball and hockey occupied the spare time this winter of three forestry basketball teams and one hockey team. Of the ten teams competing in the Farm Campus cage league, the forestry teams of the Frosh Foresters, All Foresters, and Peaveys were in the running all the time. The Frosh Foresters won eight out of nine games they played on the Farm Campus, thereby winning the championship. In the all-University playoffs, they won three games but lost a fourth to the Cardinals, the team that went on to win the all-U championship. The members of this scrappy frosh aggregation included Roger Meacham, Fred Guest, Charles Isaacs, Peter Schuft, Herman Arle, Don Ambrosen, and Art Sweet.

In the hockey playoffs this year the Tau Phi Delta sextet, composed of John Riss, captain, Russ Wheeler, George Herion, R. W. "Baldy" Nelson, Duane Rauenhorst, and Jimmy Wilkus, were in there fighting all the time and even overtime. After carrying the final game into twenty-eight minutes of overtime, players from the forestry fraternity started to feel fatigue creeping on and lost the all-U title to the outfit representing Psi Upsilon by a score of 1 to 0.

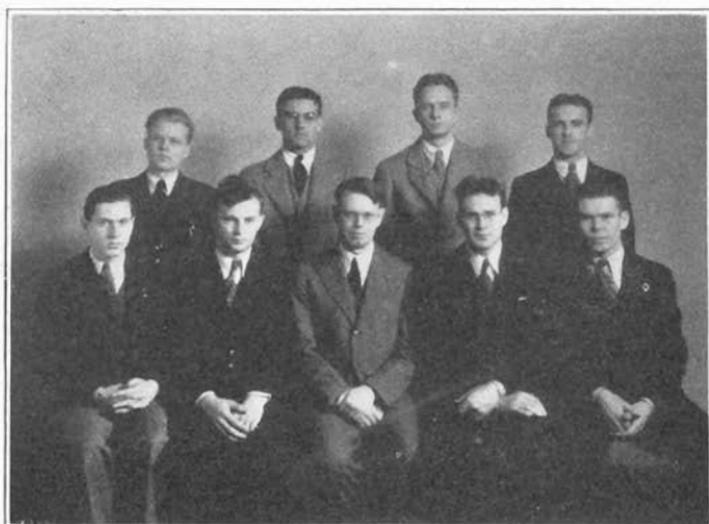
Of special interest to the graduates, it may be stated that Milford Riggs, who is working out devices to beat the squirrels at opening acorns, is a handball artist of great ability. Riggs won the Farm Campus title from about twenty aspirants, as well as the professional fraternity crown. He was not content to rest with such laurels so he did it up "brown" by copping the University championship.

The U fencing team was well represented by foresters. "Baron" Henry Stoehr won the "Big Ten" Foils Championship last year, and captained the squad this term. Others enjoying the sport of "D'Artagon" were "Wally" Jacobson, Pete Super, Ted Niehaus, and John Rundgren.

And in the art of snowshoeing, the way Ralph "Baldy" Nelson copped the all-U title, and medal is "nobodies business." He shuffled the race off at such a clip that he shattered the preceding years records by a wide margin of a full two minutes.



## THE FORESTRY CLUB



DINGLE SOLAND SMITH JOLLY EMERSON  
RIDLINGTON ALLISON DETERS WANGAARD

### FORESTRY CLUB OFFICERS

WILLIAM JOLLY	-	-	-	-	-	<i>President</i>
ORLO SOLAND	-	-	-	-	-	<i>Vice President</i>
HOWARD SMITH	-	-	-	-	-	<i>Secretary</i>
WILLIAM EMERSON	-	-	-	-	-	<i>Treasurer</i>

### PEAVEY BOARD

J. H. ALLISON	-	-	-	<i>Faculty Representative</i>
MERRIL DETERS	-	-	-	<i>Alumni Representative</i>
FRED WANGAARD	-	-	-	<i>Senior Representative</i>
WALTER RIDLINGTON	-	-	-	<i>Junior Representative</i>
ROY DINGLE	-	-	-	<i>Sophomore Representative</i>
WILLIAM JOLLY	-	-	-	<i>Forestry Club Representative</i>

### FORESTRY CLUB NOTES

"HOWDYS" were first exchanged between club members at the ANNUAL BONFIRE. A small ravine in the University golf course proved to be an ideal setting for the occasion; the cheerful light of the bonfire swallowed up the darkness and blended the hearts of the "Profs", "Grads", and students as one into a cheerful exchange of stories and greetings.

After a few selections by George Plant on the sax, and Vic Sandberg on the uke, the group swung into a medley of tuneful songs, the most of which dwelt on those sweet love lyrics of the West.

Beer and apples were served, and again the group broke into song. The hour was late, and the bonfire had dwindled to a few glowing embers before the group reluctantly sought their way out of the darkened ravine.

The Club was entertained at one of its meetings by Dr. W. S. Cooper of the botany department. He spoke on a recent trip that he made through the Gulf Coastal Planes, and supplemented his talk by some very colorful movies.

A huge truck and trailer was bedecked with "Thuja," sphagnum moss, miniature fire towers and cabins, and the ponderous relics of that famous woodsman, Paul Bunyan; and entered in the annual Homecoming Parade last fall. About fifteen members of the Club rode the float which placed fourth out of a field of about forty. The high light of this parade came when Don Buralow, '34 dropped an overly ripe pumpkin on the head of a passing "John Law." It was an unfortunate incident for the "Chick Saleian Bungalow" float behind, for it was the source of the projectiles. "John" kept his eye on this float for the rest of the parade.

At another meeting, Supervisor M. A. Mattoon of the Pisgah National Forest in North Carolina entertained the Club with a very educative and entertaining lecture, and a scenic array of slides.

The Forestry Club Dance was something different this year. Paul Bunyan was disgracefully forgotten, but Robin Hood and his merry crew were brought to life. A "beer garden" was erected in "Sherwood Forest" in one corner of the Ag. Gym. The air was pregnant with the sweet scent of the pine and cedar boughs which beautifully graced the walls and ceiling of the gym. Robin Hood Stoehr, and Little John Niehaus cudjeled with quarter-staves during intermission. Much praise is due to the chairmen and committees for the success of the party. The Foresters still have the "rep" of putting on a real "brawl".

On March 16, election of officers was held. Those winning offices were: Harold Nilsen—President, Sidney Rommel—Vice President, Karl Kobes—Secretary, Richard Smith—Treasurer.





## JUNIOR CORPORATION 1932

ELMO NAUMAN, '33

### UPON THE HEARTH

*A tree will prove a blessing all life long;  
 From birth to death it brings us naught but good,  
 The shade will make a pleasant solitude  
 For one who lies and dreams the grass among;  
 What golden globes upon the limbs are hung  
 In summer! And when dead, the burning wood  
 Will foster sweetness in the poet's mood,  
 Hum on his hearth, and help his sylvan song.  
 Its death is like the day's, for still it throws  
 A lingering light roseare around our rooms,  
 As slow the fire its last of life consumes;  
 Then sinks to embers like the sunset snows,  
 And lying, even in its ashes, glows  
 With bright remembrance of the spring-time blooms.*

LLOYD MIFFLIN

IT IS common to man that the gentle hands of memory should fondle the cherished events of days gone by and place them upon the beautiful vista of recollection before him. Ah yes, and still more common that such a beautiful presentation should occur when the

immediate atmosphere is conclusive to such delicious moments of reminiscing.

Let us humbly endeavor to paint such a picture. A man, alone, before a fireplace. He is young, a college man, a forester. Having gratefully succumbed to the beckoning arms of the past, he rests deeply submerged in the ethereal bliss of comfort. The ashes in his pipe have burned low. Through the blue haze of smoke one can scarcely discern his features. Ah, it seems as though he were of another world; as though he were but an apparition—a spirit! And he is. He is stalking the musty depths of a towering forest. He is hearkening to the subtle challenge of a massive snowcap. He is pushing a little canoe through the whirling waters of the north country. He is imbued with the lust to wander and for the moment this world is not of him. Ah yes, he is a happy man, the child of his manifold experiences.

He drifts on and on until the substance of his memory is almost tangible. He hears the clatter of dishes, the boisterous laughter of gulping foresters, the sliding of benches and long sighs of genuine relief as over-indulgent lads lower themselves into the most comfortable chairs. He re-lives again the part played as a constituent of the everlasting bull session. He can not forget the socratic pipes, the knitted brows. Ah, his mind is alive now! No longer does he casually dream. He is a living being in the recent past.

He is once more among that group of active students whose various factions banded together under the title of Junior Corporation 1932; those old boys who broke their bread together, who snored in the same old room together and who swung their axes together.

A toast men, a toast to the truest hearts ever to beat beneath the hairy chest of man; to the brightest star which glitters in the afterglow of a dying sun—the Corporation of Junior Foresters of the year nineteen hundred and thirty-two.

'Twas a motley collection of brutes, fellows, a motley collection of brutes. All good looking in their way and talented, not mentally, but otherwise. A cultural taste, if I may insert the term, characterized most of our fine and upstanding young men. Ah, pain of life, these men were want to express the rich content of their hungry souls in the form of music. Ah, hark! Believe we can still catch the plaintive strains by Baron Stoehr as he tranquilly wrung that touching and haunting composition "Oh Promise Me" from the trembling strings of his plucky violin (in twenty-five movements).

Ah yes, the "three million dollar" voice of Pulky as he dragged on a fag and coldly crooned the most passionate of melodies. To intensify the volume Lindy would squeeze in a measure or two of "Lies" by the crude manipulation of Pulky's non-union accordion. This undercurrent of music even went so far as to culminate in

an impromptu orchestra providing the weather was of such nature as to fertilize the more pensive moods of man.

Brother Plant on the "sax," Rotciv on the banjo or "uke," Sulo belching into an empty ten-gallon jug, "Speed" Lauer on the improvised drum, Theodore bending his mental resources to the task of working a broom-handle on the floor, and other men who lacked this highly specialized training in the finer arts composed that assembly from which evolved such a concoction as to causeth all the wood folk to lend their ears.

Travel? Oh yes. These men were fond of travel. Take that cold trip to the Minnesota National. Recall the pressure of economy and the resultant desire of some fourteen mighty men to ride the rails to Deer River. Haywire logging camp was the ultimate destination and never did name more fit subject matter. Ah, the stretch toward home! The train rumbling along te-click-te-clack-te-click-te-clack. An empty box car. A full moon. Music in the heart of every man. Can memory offer more?

After the "Haywire venture" was over the destructive forces of spring began their subtle play upon the will of man. One by one we slipped, poor old Nils going first of all. You know fellows there is a beautiful little flower up there in the woods known as the trailing arbutus. It is extremely dainty and appeasing and aromatic and—well Nils suspected all of this: Thus with heart hangingeth upon sleeve he hopped and skippetted around the woodsie woods. A trusting soul, he transferred the responsibility of their care to a few intimate pals. Ah disloyalty of man, for soon bouquet was a real bouquet. Pepper was cleverly intermingled with the aromatic effects and the group of expressive blossoms were carefully wrapped in a certain soft form of paper. Sorry I can't continue from this point, fellows. Just what did take place after that, Nils?



*Creators of the Straight and Narrow Section Lines.*

Speaking of things along this line reminds one of the chivarree we had the opportunity to take part in. You know, fellows, brother Cheyney's good-looking daughter became married and dropped into to see her papa. Having nothing to do (at this particular moment) we gathered and marched over to the professor's house. No song seemed more appropriate to top off the din than the "Old Pine Tree." The groom assumed the gracious wedding smile and, in speaking, opened the avenue for our unreplenished departure, et cetera, et cetera. Aha, subtlety of life! Monster of deception!

Oh yes, dancing. Ma foi! Can those chic little maidens of the north country whirl a dainty hoof. Truly men, creatures of inestimable charm and quite tactful in the rigors of mutual co-operation. Twice did the men of this great group indulge in the terpsichorean pastime. The latter dance, having the more favorable weather on its side, was probably the more impressive. Ah, what a night. What a night for tenderness. But she fluttered by, fellows, the night fluttered by. The soothing and inspiring forces of balmy weather, fragrant breezes and mellow moonbeams were very effective. Ipsy dipsy wipsy? Ucksie ducksie wucksie.

Yes, just a petal in the flower of life, men. Just a petal. And we must agree with Socrates, "Humanum est errore."

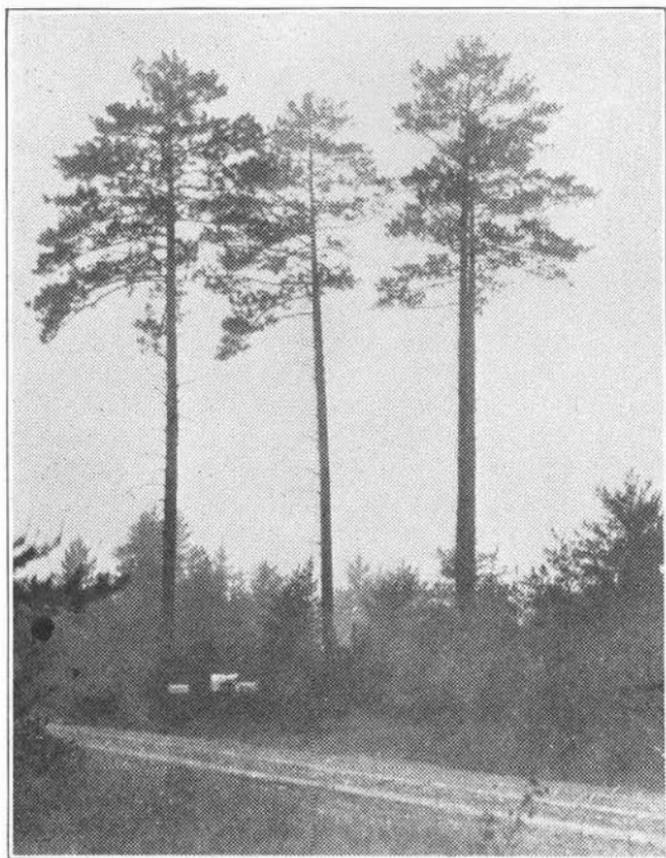
Sassiety! Among the elegant draperies of the Hansen home did we sit, Cheyney with us. One nice story after another fellows. Cheyney even read one or two to his little boys.

Who but our honorable president, Emil G. Kukachka, would advance his attentions to such an extent that the arm of the law would place a tag upon the one and only means of transportation? Yes, men, our corporation was represented in the courts of Cloquet. Imagine the sinking sensation one must feel when the law says bluntly, "Say, what were you doing at that hour in the morning, anyway? (Whew!)

Time passes on but we can't pass without touching upon the Bull-cook-Carr-Baron-Bertha Walkathon. Ah, inconsistencies of life, your dagger is plunged deeply into the heart of well-meaning men. What could soothe the loneliness of women more than a walk through the woods with a man who knows the ropes? Do I see G. Herbert C. blushing? Ah no, my vision fails me. And Bertha was with them always with the Baron panting at her heels.

And then the maximum food consumption contest at Stillwell's. Mammy! What a feed! Huge allotments. Tubs of fruit salad, bushel baskets of cookies, and a cord or two of buns plus a colorful array of other delicacies. A haven for men with no sense of proportion and thus a delightful haven for the corporation.

Thus ends the story of three months of genuine fellowship. Days which were profitable and again those which were not. A mode of life long to be cherished for memory can do naught but enhance its appeal.

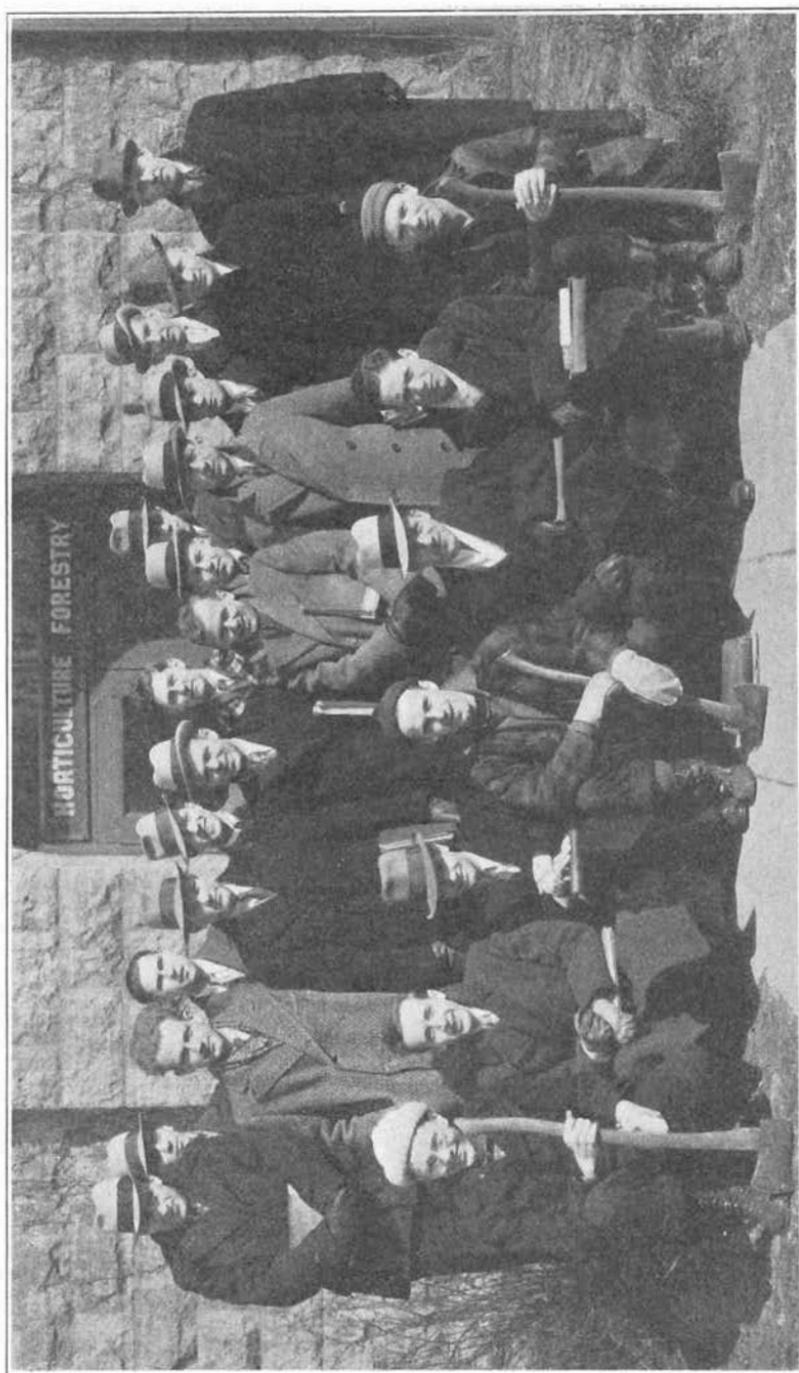


*Familiar?*

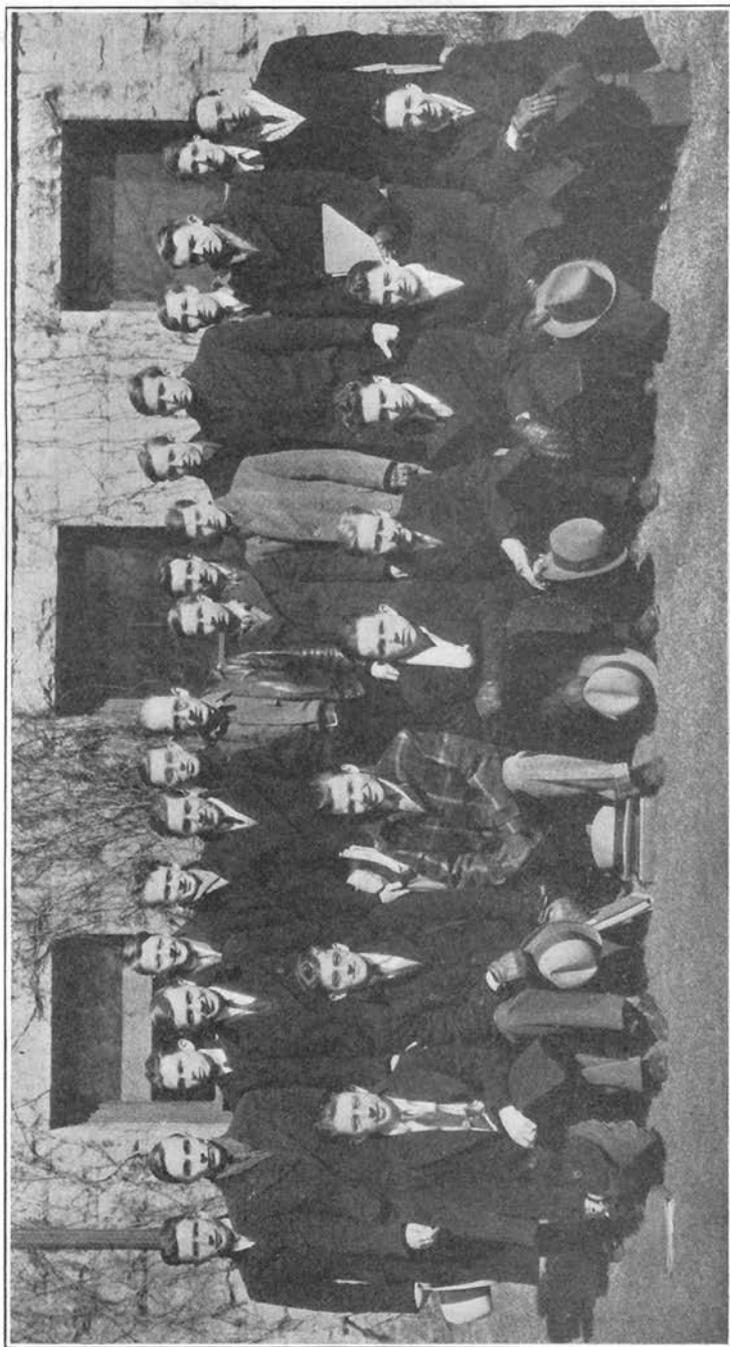
BY THEIR WORDS YE SHALL KNOW THEM

- J. LOZINSKI "JOE"—*Aint you.*  
 F. MOORE "BUBS"—*Now Scharr and me.*  
 H. SMITH, Secretary "HOWIE"—*"Philosophy? Now you're talking my favorite subject."*  
 W. JOLLY "BILL"—*"Well, Cheyney says so. It must be right."*  
 O. SOLAND "ORLO"—*"she did!"*  
 J. HAGEN "JAY"—*"Youse guys goin' to Cloquet?"*  
 L. HILL—*"Sawyer? Why sure I'll go!"*  
 W. LAUER "WILLY"—*"Haaw haw haw, Aw haw haw haw. Is that right, Nils? Is that right?"*  
 H. JOHNSON, Steward "HARLY"—*"So I say, boys, See her TONIGHT!"*  
 H. MILEY "MILEY"—*"Gee, Do you think so?"*  
 H. STOEHR "BARON"—*"Holy man!"*





CLASS OF 1934



CLASS OF 1935



*The Well-Traveled Road to  
Douglas Lodge.*

## THE FROLIC OF THE FROSH

*"Up in Them Thar Woods"*

ROY DINGLE, '35

NOW, I don't want nobody to misunderstand me and think that this here six weeks' affair was all frolic by any means. But this here article is about the frolic part of it.

Well, to start with, we got up there, some by car, some by bus, some by "rule of thumb," and some by miracle. The latter term had

to be used for lack of a better one that would include old Fords, bicycles, and roller skates. Some fellows, lucky cusses, didn't get there at all; and we wish to say that we missed them terribly.

The first thing we did when we got there after looking the camp over and choosing our bunks, was to go up to the stores (Indian Trading Post) and buy corncob pipes and Edgeworth Tobacco. (Paid advertisement). The second thing we did was to smoke them pipes. Some made a smoke screen; others were more cautious; but some, including one Dingle so I hear, made a rather bad job of it. At any rate the second week up there found most of the corncob pipes on the shelf, mere souvenirs of Itasca Park.

That first day we were looking forward to a six weeks' vacation. Little did we realize that we would tramp miles and miles (millions of 'em) for "our pals" Dawson, "Rosy", Cheyney, and last but not least, Brown. How'd you like a look into the Bunkhouse one of those first evenings we spent up there?

The evening is a clear, chilly one, and everyone is in. The boys are scattered around studying, or trying to study, or trying to sleep, or well, that takes care of all except the K. P's.

There are the so-called "athletes" on the northeast porch, the "try to keep others from studying" kind who make so much racket by their athletic endeavor that the "sleepy" boys below often register disgust, malice, anger, or what have you, in no uncertain terms. Not the least of these athletes is one husky Swede, surname Carlstrom, the "poet laureate" of the camp. The fellow was not worth mentioning who wasn't at some time honored by mention in the verses of our most "able bard". (?)

An inconsistent quantity is the bunch that might be called "studying" (by any conceivable stretch of the imagination). Naturally we all had our flings, so to speak. From my own experience there were only two big outside attractions, the tourist park (Indian camp included) and Lake George. Those addicted to Lake Georgitis were A. W. O. L. most often according to statistics. I'm still curious to know what the big attraction was. And then, of course, there were a few who simply had to study every night including Saturday, not that they needed the study; but Algy had to keep the library from getting lonesome and then, too he had so many specimens to mount; and Leo, from Tower, had to do two men's work; and of course Olie was kept busy trying to write something to suit Algy. But enough of this praise of a few, we all deserved praise for having studied some.

There was quite a bit of harmony among the boys especially just after "lights out." At this time the barnyard chorus let loose with full enthusiasm. One talented individual was dog, cat, rooster, hen, calf, pig, and sheep all in one. We found out later, however, that this individual had had the edge on us all along since his home town is Robbinsdale (what an environment for that kind of talent!) As for myself, I had to be satisfied imitating a hen and a duck. Webb and O'Neill were even worse off, they tell me; they could only carry on cat conversations (Yes, conversations). This and the "rustling of the pines" and the "night music of the lake" helped to "lull us off to undisturbed slumber." Ah, yes, the beauty and tranquility is scarce believable as one looks back upon it. (Due apologies to that great old author, Avon.)

On account of us freshmen were just like all other freshmen and wanted to do something different, we buried the "Bugs" instead of the quiz. We knew we wouldn't get no quiz anyhow, and besides we had too much to do besides gather up half the Park for souvenirs during the last couple of weeks. Another thing, we were thoughtful of our dear old Prof. Dawson in that we thought handing in fifty bugs would make less work for him than handing in a hundred. And that ain't all yet. We thought of the poor little freshmen that were coming up next summer and would be told by naughty, mean, old Prof. Dawson to get a hundred bugs apiece and wouldn't be able to find that many because we had taken them all. So we buried the bugs. Each of us kept fifty, and we buried the rest. We felt deeply



*The Burial of the Bugs.*

sorrowful to think that we, being embryonic conservationists, would be so thoughtless as to fill countless numbers of our most useful and valuable and beautiful part of our Creation ruthlessly and without thinking. (Ouch! Confound those mosquitoes and deerflies, let's kill a bunch of 'em!) Of course our long drive to the cemetery and the final burial ceremony constituted the big social event of the season. All of the social bugs and butterflies were there (reference *Heinystera* and *Lapidstera*) including Prince Albert, State Street Sadie, and Miss Arago (I'm a liar). The burial ceremony and funeral sermon were duly conducted by none other than "parson" R. H. Dingle. Owing to the deep sorrow present in the hearts of all, the burial ceremony was quite properly followed by a "lake party" to which faculty members were given special invitations. Much to our regret Mr. Brown was the only one who accepted, and he needed a little coaxing.

We made our final "party" a "forty" engagement which lasted for two weeks. (Or was it two months?) We all had "pards" and went forth into the great wild forest in search of just a little forty. Speaking of pards, a little general discussion of some of our pards ought to be in order. What follows here, then, is a composite of opinions that most of the fellows had of their pards. (The dirty scums.)

He's a little short guy one way, and then another way he's not so short. He's a pal sometimes and a pest others. But he's my "pard", so he's all right. His name's Jack and he sleeps in the bunk next to mine. When I want to sleep, he doesn't; when he wants to sleep, I don't. We sometimes get pretty mad at one another, and

the words that pass between us aren't just right. But he's my "pard", and that makes him all right.

The other day we went down to a spruce swamp to write a silviculture report on an acre of spruce. We found a mountain ash tree, and I claimed it was poison sumach. We argued from morning till night until I found out I was wrong. I had to admit I was wrong. That was hard. Then, to round off the day, we argued about the sizes of trees for a while.

We got a bug net the other day to catch insects in. Prof. Dawson gave us one for the two of us, and we've never had any peace since. We always want to use it at the same time.

He's always after me to go some place I don't want to go, and he bothers me when I'm studying. And he wakes me when I'm sleeping. And he tells my personal affairs to everybody.

But when my Ford needs fixing, and I don't know how to fix it, he's right there to help me. Then, believe me, we get it fixed. Or when I'm lonesome or disappointed with the "apple of my eye," he knows enough to hold his silence and let me brood it out. But best of all is his sportsmanship when we're playing a game of bridge. When I get "doubled" and begin to look downcast, he perks right up and pulls me out by bidding something else. Yes, you bet he's my pard, and I'm mighty proud of it.

Yes, folks, bridge even invades the sacred innermost precincts of Mother Nature. Now, come to think of it, here's some of our poet laureate's poetry.

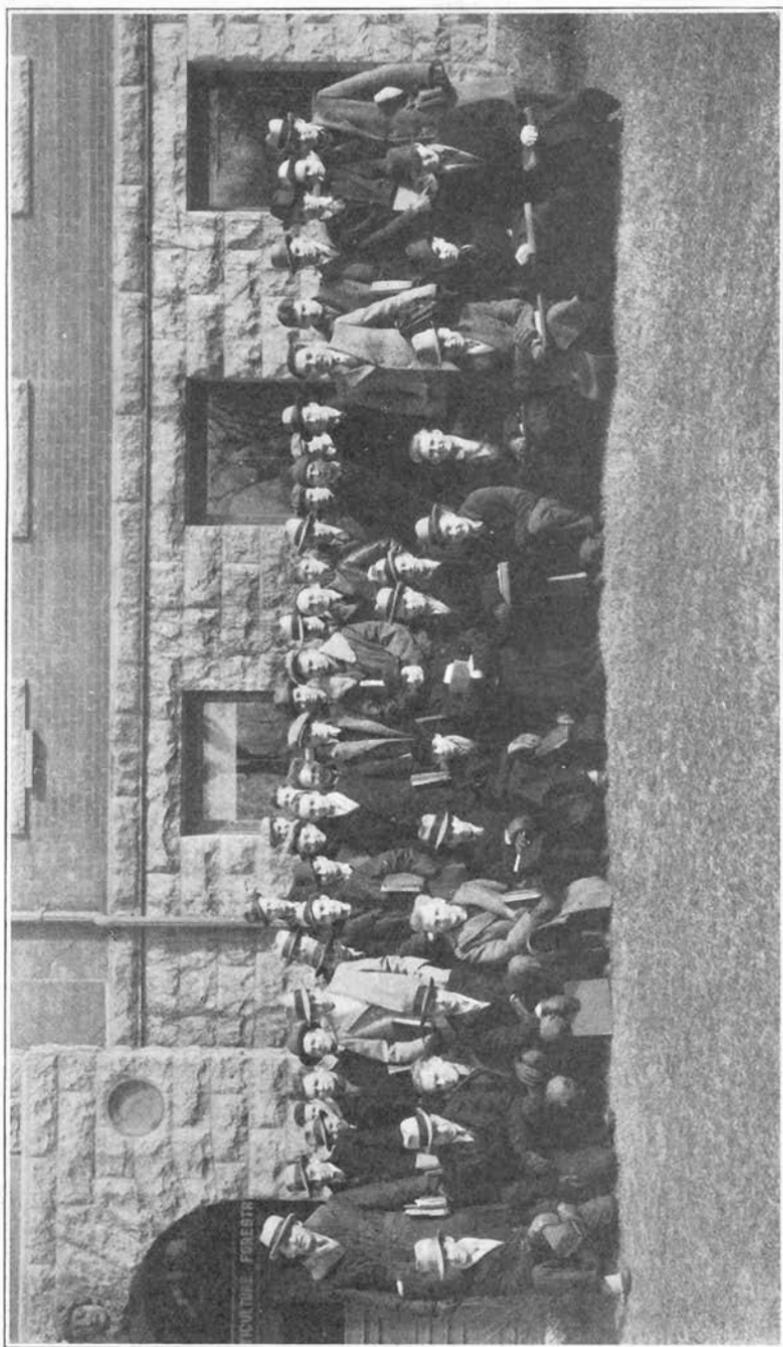
Well, them's our sentiments and we're sorry we can't do anything about it.



*Good Injuns.*

## STAR BOARDERS

1. ACKERMAN—SOUTHPAW—*Perfesser.*
2. ALGREN—OTHERWISE KNOWN AS ALGY—*"I like snipe hunting."*
3. AMIDON—THE DEAR SLAYER—*Oh, but he's married.*
4. ASP—*"How're you supposed to get the volume on the strip?"*
5. CARLSTROM—TARZAN OF THE SCANDYHOVIANS.
6. CLARK—BUMBLE BEE—*'cuz he was too busy to work.*
7. DENSMORE—SLEEPY—*Late for Dinner (for short).*
8. DINGLE—PARSON—SQUARE MAN—NICOTINE HOUND.
9. DUNDAS—KIBITZER FROM BAUDETTE.
10. EFFRON—APE MAN—*"It must be an earthquake. Help!"*
11. ELLERTSON—BUGS—*Our Photographer.*
12. FELTMAN—*"Burgs, I guess I ate too much, Burgs!"*
13. FRAVSON—UNCA WALT—*"Where's my bed?"*
14. HURLEY—APPLE POLISHER—*Downfall of Civilization.*
15. HOLBROOK—HALF OF MENZ AND HOLBROOK—*"Get us a homer!"*
16. JOHNSON—BISHOP—BIRD CHASER—*"How far is it to church?"*
17. JACOBSON—OLAF—*"It's no use; Algy says I'M no good."*
18. RENNING—WHAT A MAN—*"Where's Burp Feltman?"*
19. LINDEBERGH—BOB—*"Oh, Joe, let's go fishin'."*
20. LYNCH—SHANTY—*"Pretty nice squaws down there!"*
21. LAMPHER—RED—*He was a good man. . . He's married now.*
22. LEE—ARMY—*"Who's going down to the tourist park?"*
23. LORENZ—JOW—*Fisherman and bug catcher.*
24. MERZ—THE OTHER HALF—*"Ain't he handsome, though?"*
25. MORSE—FETUS—*"I'll bet we've got a flat tire."*
26. MUNTHE—BERT—*"C'mon let's play ball."*
27. MURPHY—SOMNAMBULIST—*"Where the devil's Lanpher?"*
28. NORD—PREXY—*"Dick, how about Lake George tonight?"*
29. NORMAN—WOMAN HATER—*"When do we eat?"*
30. NEASE—BARON—*"I've seen trees six hundred feet tall."*
31. O'NEILL—IRISH—*"Meow, come on out on the fence."*
32. PARKER—LANKY—*"Who's new at the tourist park?"*
33. RISS—STEWARD—MISS ARAGO—*"I'm a liar."*
34. ROMANOWSKI—ZEPHYR—GRAVE DIGGER.
35. SHARP—PRINCE ALBERT—SEVEN LEAGUE BOOTS.
36. STURTEVANT—ART—*"We can't find our forty."*
37. SCHWARTZ—DEUTCH—*"Boy, is my Ford fast!"*
38. SEASTROM—BEEFIN'—*"I know Brown, he wants everything."*
39. SMITH—FISH—*"I guess we'll have to clean up Riss's car."*
40. TOWNSEND—OH, JOE!—*"Was there ever a storm last night."*
41. WEBB—WILLIE—*"Where's that beefin' Seastrom?"*
42. WILJAMAA—LEO—*"Up in Tower, where I come from—"*
43. WHEELER—PANSY—*"Beefin' again?"*



CLASS OF 1936



## XI SIGMA PI

### *Honorary Forestry Fraternity*

*Founded at*

UNIVERSITY OF WASHINGTON

1908

*Local Chapter*

DELTA

1920

#### FACULTY MEMBERS

J. H. ALLISON  
R. M. BROWN  
W. W. CHASE  
E. G. CHEYNEY  
FRANK KAUFERT

M. DETERS  
T. S. HANSON  
L. W. ORR  
L. W. REES  
H. SCHMITZ

#### ASSOCIATE MEMBERS

G. GEVORIKANTZ

R. ZON

#### GRADUATE STUDENTS

R. ANDERSON  
S. J. BUCKMAN  
H. ENGSTROM  
R. HUNT  
R. LORENZ

C. OLSON  
S. OLSON  
L. PETERSON  
A. ROE  
J. STOUDT

T. E. MAKI

#### ACTIVE MEMBERS

WILLIAM ACKERNECHT  
FLOYD COLBURN  
JOHN DOBIE  
WILLIAM EMERSON  
JOHN FRY  
IRWIN JOHNSON  
SULO KOSKI  
JOSEPH LOZINSKI  
JOHN McMILLAN  
THOMAS MORTENSON

THEODORE NIEHAUS  
HAROLD NILSON  
DONALD PRICE  
WALTER RIDLINGTON  
SIDNEY ROMMEL  
JOHN RUNDGREN  
VICTOR SANDBERG  
ORLO SOLAND  
FRED WANGAARD  
WALTER ZILLGIT

ELMO H. NAUMAN



*Stewart, Nelson, Nelson, Seastrom, Olson, Anderson, Herion  
Miley, Brown, Riss, Rauenhorst, Sanders, Super  
Wangaard, Ridlington, Fry, Nilsen, Densmore*

## TAU PHI DELTA

### *Professional Forestry Fraternity*

Founded at  
UNIVERSITY OF WASHINGTON

BETA  
1926

#### FACULTY MEMBERS

H. SCHMITZ  
J. H. ALLISON  
R. M. BROWN

M. DETERS  
R. W. LORENZ  
F. R. KAUFERT

#### GRADUATE STUDENTS

S. J. BUCKMAN  
C. E. OLSON  
D. M. STEWART

M. RIGG  
R. T. ANDERSON

#### ACTIVE MEMBERS

ROBERT CLARK  
JACK DENSMORE  
HOWARD BROWN  
PAUL SEASTROM  
R. A. NELSON  
R. W. NELSON  
PETE SUPER  
WALTER RIDLINGTON

DUANE RAUENHORST  
GEORGE HERION  
JOHN RISS  
FRED WANGAARD  
HAROLD NILSEN  
JACK FRY  
HARRY MILEY  
EVAN SANDERS

#### PLEDGES

JAMES WILKUS  
JOE LORENZ

OSWALD KROGFOSS  
JOHN KRAMER

## ALUMNOTES

JOHN RUNDGREN, '33

ZOOLOGISTS have been finding out a great deal about the movements of birds by banding fledglings ready to leave the nest. The alumni writer-upper has the advantage of the zoologists in one respect. The fledglings who have left the Forestry school in times past are so considerate as to reply to the insistent letters of a harrassed circulation manager with a greenback and a few scraps of information about themselves. This information is so fragmentary, however, that one is forced to conclude that either nothing ever happens to Minnesota foresters or that these foresters are suffering from a sense of false modesty.

What about the alumnus five years after graduation? Is he still convinced that forestry is the world's best profession? Does he build upward from his forest school education or does he forget as rapidly as possible. These are pertinent questions to the undergraduates but the only available answer is the fact that most of our alumni are in forestry work.

Only a professor realizes the unchanging character of the student body. Ever since that remote day when the first tobacco can was pushed into place on the beams of the Itasca Park bunkhouse there has been a yearly succession of type characters . . . the fellow who spends all his time searching for blueberries on a botany field trip . . . the one who plans a lake party while being primed with facts regarding the use of a hand level . . . the fellow who is invariably drawn to the tourist camp or the Lodge, secure in the knowledge that the opportunities for insect collecting or silvical observations are unexcelled at these points. Probably there has always been an inexplicable disappearance of canoes the night of the dance . . . heated bull-sessions around the fireplace . . . and midnight riots in the bunkhouse. At least to the extent of these parallel experiences we acknowledge a kinship with our alumni and to that group who have made the words "Minnesota foresters make good" something more than a mere saying, the undergraduates offer a salute.

## AMONG THE ALUMNI

1899

H. H. Chapman, the first of our graduates, is professor of forestry at Yale university. He has played an active part in the development of the profession since the turn of the century. As author of several textbooks he has students in most of the forest

schools in the country burning the midnight oil.

1905

Harold Cuzner, another pioneer, is in the Forestry Department of the College of Agriculture in Los Banos, Phillipine Islands.

1906

W. T. Cox recently dropped as state conservation commissioner despite the disapproval of conservationists throughout the country, stresses the fact that conservation still has a long way to go in Minnesota.

S. B. Detwiler is Chief of the office of Blister Rust Control, Bureau of Plant Industry at Washington, D. C.

1909

Walter M. Moore is with the U. S. Air Service at Osborne, Ohio and tells how a forester happened to take the air in this issue of the Peavey.

1910

Donald R. Brewster, Utilization Engineer for the National Lumber Manufacturers Association, engages in wood utilization research at Memphis, Tenn.

Robert Deering is Assistant Regional Forester in charge of operations in the California Region.

N. G. Jacobson is in charge of the research department of the Western Forest and Conservation Association.

A. O. Benson is engaged in research at Forest Products laboratory at Madison, Wisconsin.

Charles L. Lewis Jr. is in the cranberry business at Beaver Brook, Wisconsin.

1911

David A. Arrivee is Assistant Supervisor of the Targhee National Forest at Ogden, Utah.

A. F. Oppel in charge of Fire Prevention and Control with the State Forest Service turns in good results on a tough job.

W. H. Kenety is General Manager of the Northwest Paper Company at Cloquet, Minnesota.

1912

Grover N. Conzet as State Forester is a busy man what with fourteen new state forests and the unemployment relief plan.

G. Grant Harris and Sigvald Norman are with the Page and Hill Company in Minneapolis.

Robert Wilson is managing a government lemon grove at San Fernando, California.

Harry Blodgett is with the Harvey Blodgett Printing Co., St. Paul.

1913

Andrew Erstad is with the Weyerhaeuser Forest Products Company at Klamath Falls, Oregon.

Ernest O. Buhler is Sales Manager with the Merchants Bank Building Company in St. Paul.

Robert Haworth is connected with the Red River Lumber Company at Los Angeles, California.

Charles Simpson is Supervisor of the Lolo National Forest, and is located at Missoula, Montana.

Paul Tobin, formerly at Cloquet with the Weyerhaeuser Company, is now at the new mill at Lewiston, Montana.

G. H. Wiggin is located at the Robinson Experiment Station at Quicksand, Kentucky, a comparatively new station which is in conjunction with the University of Kentucky.

1914

S. A. Graham is teaching forest entomology at the University of Michigan School of Forestry. His recent textbook on entomology is being used by Minnesota foresters.

Stanley L. Ringold is in the haberdashery business in St. Paul.

Harold W. Spink is the new owner of a lumber company at Kansas City, Missouri.

1915

Thorvald S. Hansen spends his leave as director of the Cloquet Forest Experiment Station getting his Ph. D. at Yale.

Henry M. Dennis is with the Tacoma Lumber Co. at Tacoma, Washington.

1916

Ralph E. Rhoads sends his best regards to his old classmates. He is in Chester, Pennsylvania, where he is Secretary of the Scott Paper Co.

E. R. Swartz is with the Michigan Electro-chemical Company, Menominee, Michigan.

1917

Parker O. Anderson is Extension Forester at U Farm, St. Paul and extols the virtues of woodlots, shelter-

belts and Forestry in general, to all and sundry.

1918

George Hauser is assistant football coach at the University of Minnesota.

1919

R. L. Bacus is living in Hollywood, California, and is exercising his interest in tree growing in his own front yard.

1920

R. H. Grabow is working for Los Angeles County in California.

Leo Isaac is working on the Northwest's forest problems at the Pacific Northwest Forest Experiment Station, Portland, Oregon.

1921

P. H. Bryan is engaged in administrative work on the Ozark National Forest in Ogden, Utah.

H. L. Person is Associate Silviculturist at Berkeley, California and is in charge of the silvicultural studies in the redwood region.

A. E. Wackerman, Southern Forest Experiment Station, New Orleans, La.

Leyden Erickson is with the National Lumber Manufacturers Association in Washington, D. C.

1922

Alvin A. Anderson is with the Chicago Mill and Lumber Company.

Ralph M. Nelson is with the Forest Pathology Department and is located at Asheville, N. Carolina.

1923

Charles Dockstader is cashier of the Minnesota Mutual Life Insurance Company of St. Paul.

Orcut W. ("Jack") Frost is with the Wood Conversion Company at Cloquet, Minn.

Alfred L. Nelson is "super" of the Nebraska National Forest at Halsey, Nebr. and sends his regards to other '23 grads.

Augustine Streenz is Assistant Professor in the Forestry Department of Louisiana State University, Baton Rouge, La.

1924

Harold Betzold is busy in St. Paul keeping Como Park beautiful and looking after the conservatory there.

Victor A. Lynne is City Forester of Winona, Minnesota.

Walter G. Hoar is located on the Coeur d' Alene National Forest, Coeur d' Alene, Idaho.

Albin Nelson is Assistant in Public Relations in the State Forest Service, St. Paul, Minn.

Harold Ostergaard is Assistant Forester in the Minnesota State Forest Service, in charge of State Forests.

1925

Victor Jensen is with the Northeastern Forest Experiment Station at Amherst, Mass.

William Maughan is on the staff of the Duke Forest School at Durham, N. C.

Leslie G. Baumhofer as an Entomologist makes the insects behave on the Nebraska National Forest and elsewhere.

Roy Thompson is connected with the Forest Taxation Inquiry of the U. S. Forest Service, and is located at New Haven, Conn.

G. Proctor Cooper leads the Cooper Third Caribbean Botanical Survey and plans to remain in the Caribbean until next summer.

1926

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

Ralph M. Lindgren is at present on leave from the Office of Forest Pathology, U. S. D. A. and is continuing his graduate work at the University of Wisconsin.

Leslie Henry is in charge of timber surveys on the Washakie National Forest, Landers, Wyoming.

John G. Kuenzel is at the Yale School of Forestry, New Haven, Conn.

George Sargent is technical assistant on the Klamath National Forest.

1927

Roy A. Chapman is a member of the silviculture division of the Southern Forest Experiment Station at 348 Baronne St., New Orleans, La.

Warren W. Chase is assisting in the Division of Forestry, U. of M., and studying for his doctor's degree.

Leslie W. Orr is teaching forest entomology to student foresters at Minnesota, and is also in charge of entomology work in the state.

Ernest Kolbe is with the Pacific Northwest Experiment Station at Portland, Oregon.

Carl G. Krueger reports his work on the So. Fork district of the Shoshone National Forest "as interesting as ever."

Fentan Whitney is ranger in charge of the Fort Rock Ranger District, Deschutes National Forest, Bend, Oregon.

## 1928

Merrill Deters is assisting in mensuration and dendrology in the Division of Forestry, U. of M., while studying for his doctor's degree.

I. Lee Deen is instructing and working for his Ph. D. degree at Yale University, Forest School.

Albert Grant is with the Scott Pole Company in Minneapolis.

Edgar Clark is with the Wood Conversion Company of Cloquet and is located at Sioux Falls, South Dakota.

Ben Whitehill is in charge of timber sales on the Washakie National Forest, Du Nair, Wyoming.

Ellery Foster working on the National Forest Survey in the state of Mississippi ballyhoos the south as a great timber country.

J. N. Van Alstine is the new ranger on the Twin Mountain District of the White Mountain forest, Laconia, New Hampshire. He was recently married.

## 1929

W. H. Fischer is a district ranger in the Black Hills. He was married last fall and is living in Rockford, South Dakota.

W. R. Anderson is working on timber sales on the Olympic National Forest and is located at Headsport, Washington.

Dale Chapman is at New Orleans with the Southern Forest Experiment Station and the Bureau of Plant Industry, and is engaged in pathology work.

Ernest George is at the Northern Great Plains Experiment Station at Mandan, North Dakota, and is in charge of an extensive shelter belt demonstration project.

Clyde Christianson is studying Forest Pathology in Germany.

Frank Kaufert is teaching Forest Pathology at U Farm.

John Neetzel is working on forest fire investigations for the Lake States Forest Experiment Station.

William Hallin orders his Peavey to be sent to Berkeley, California. We suspect he is doing graduate work.

Lawrence Ritter is blister rust control agent for the Minnesota State Forest Service.

David M. Williams is with the Mac Gillis and Gibbs Company, New Brighton, Minn., in the pole treating industry.

Harry A. Peterson is with the Bell Telephone Company at Chicago, employed in the research department of the company.

## 1930

Bob Anderson is taking graduate work in mensuration and is working part time for the Lake States Forest Experiment Station.

"Ike" Benson, "Happy" Forder and Milton Anderson are over on the New Mesabe purchase unit at Virginia, Minn.

William Brenner is working at the Lake States station for the Wisconsin Land Economic Survey.

Dan Bulfer is hard at work on the Targhee Forest, as a J F at Ashton, Idaho.

Rolland Lorenz is working in Liberia with the Firestone Rubber Company. Brother Ralph is back taking graduate work at Minnesota.

Richard Wittenkamp is with the Wisconsin Land Economic Survey.

T. Ewald Maki is digging up a lot of "dirt" in connection with his work for his Ph. D. in soils.

## 1931

Stanley Buckman is winding up work on his Ph. D.

Robley Hunt and Webster Sterba are working for masters in game management.

Maurice Day returned from the University of California to work for the state Forest Service and get clawed by a bear.

Ben Fredrickson found a job with the State Forest Service.

"Kark" Karkula is waiting like the rest of the boys.

Wes Donehower spent last summer nosing thru timber tracts of New

England and Canada in connection with his work at Cornell U.

Clarence Olson has spent considerable time toting books around in his graduate work.

Lyll Peterson was doing graduate work until he started working on the Chippewa.

Charles Randall still haunts the campus with a heavy load of books.

"Hoot" Huhtala denned up at Libby, Montana last winter and from reports he will not be returning soon.

Wayne Sword: 'Tis said his beaming countenance is seen in Cloquet occasionally. He works with the State Forest Service out of Deer River.

Art Schneider is with the U. S. F. S. on the Superior.

1932

Roan Anderson is "back on the farm" waiting for things to break. Mr. Roosevelt please! !

Dorothea Cahill proved she believes in the forestry profession in a big way by becoming engaged to Harold Engstrom.

Harry Callinan "carries on" around the campus.

Harold Engstrom is back after a masters and looks a little dazed. Congratulations Harold.

Clarence Evenson is taking charge of the Cloquet station in the absence of Professor Hansen and shares a bunkhouse with Alan Laidlaw who is

conducting a Ruffed Grouse study on the area.

Don Ferguson peeked in on us for a few days this winter before he launched himself west.

Arthur Horn drops into the Union for an occasional bull-session with Lauritz Krefting who is after a masters in game management.

Edward Iverson holds forth in the Superior National Forest.

J. Allan Jackson packed up at the end of the winter quarter to seek his old haunts with the Oneida Purchase Unit, Wisconsin.

Jack Kopitke—Graduate work at the U.

Stan Olson runs things (errands) at the Lake States Experiment Station and has developed a taste for research.

Art Roe plans to do the bugs dirt and get his masters in Entomology this spring.

Dale Sanders spends his time directing plays and leading Boy Scouts while waiting for a good fire season to develop around Brainerd.

Harry Stritman. Thanks to the Minneapolis Public Library system Stritman is not an unemployed forester.

Roy Wagner sojourning at Washington University on a scholarship squaks about the rainy winters.



## ALUMNI DIRECTORY

- 1899  
Chapman, H. H., Yale School of Forestry, New Haven, Conn.
- 1904  
Erickson, M. L., Flandreau, S. D.
- 1905  
Cuzner, Harold, College of Agriculture, Laguna Province, Los Banos, Phillipine Islands, Forestry Dept.
- 1906  
Cox, Wm. T., Commissioner Conservation, State of Minn., Old Capitol Bldg., St. Paul, Minn.  
Detwiler, S. B., Chief, Office Blister Rust Control, Bureau of Plant Industry, Washington, D. C.  
Rockwell, F. I., Marion, N. Dak.  
Tierney, D. P., Castle Rock, Minn.  
Cleator, A. W., 514 Lewis Bldg., U. S. M. A., F. S., Portland, Ore.
- 1907  
Canavarrro, 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., deceased.  
Benson, Arnold O., Forest Products Laboratory, Madison, Wis.  
Berry, J. B., Winter Haven, Fla.  
Brewster, D. R., 1315 Bank of Commerce Bldg., Memphis, Tenn. c-o Western Cedar Assoc., 710 Metropolitan Bldg., Minneapolis, Minn.  
Derring, Robert, Ferry Bldg., San Francisco, Calif.  
Jacobson, N. G., 511 Spaulding Bldg., Portland, Ore.  
Krauch, H. G., Ft. Valley Exp. Station, Flagstaff, Ariz.  
Lewis, C. L., Jr., Beaver Brook, Wis. In St. Paul in winter.  
Underwood, C. L., 305 N. 4th Ave., Yakima, Wash.
- 1911  
Arrivee, David A., Targhee National Forest, St. Anthony, Idaho, Box 644.  
Beard, F. W.  
Bowen, C. W., Jr., Fullerton, Calif.  
Brownlie, J. R., Thompson Yards, Livingston, Mont.  
Campbell, Hugh B., Prairie, Wash.  
Eisenach, Walter, Wausau, Wis.
- Gilles, J. R., Box 248, Zamboanga, Phillipine 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., Lanham, Maryland.  
Oppel, A. F., 1523 Branston, St. Paul, Minn.  
Underwood, Wm., deceased.  
Weber, Henry, Minnesota Forest Service.  
Williams, Donald, Washington Wood Preserving Co., Spokane, Wash.  
Young, Paul.
- 1912  
Beyer, W. F., Marine Ins. Co., 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, Mission Block, Woodley Rd., San Fernando, Calif.
- 1913  
Buhler, E. O., Merchants Trust Co., St. Paul, Minn.  
Erstad, Andrew, Weyerhaeuser Products, Klamath Falls, Ore.  
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.  
 Wiggan, G. H., Robinson Expt.  
 station, Quicksand, Kentucky.

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., Spencer, Iowa.  
 Mueller, A. T., Princeton, Wis.  
 Ringold, Stanley L., 2124 St. Clair  
 St., St. Paul, Minn.  
 Rose, Logan, Mankato, Minn.  
 St. Marie, A. A., Los Angeles, Calif.  
 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, c-o Nicaragua Ma-  
 hogany Co., Bleufield, Nicaragua.  
 Crane, Leo F., Post Recruiting Office,  
 Fort Sam Houston, Texas.  
 Gjerlow, Atle B., c-o Nicaragua Ma-  
 hogany Co., Bleufield, Nicaragua.  
 Hyde, Luther, deceased.  
 Johnson, Oscar, Philadelphia, Pa.

Rhoads, Ralph, Scott Paper Co., Ches-  
 ter, Pa.  
 Schwartz, E. R., 1821 Liberty Street,  
 Marinette, Wis.

1917

Anderson, P. O., Extension Forester,  
 Dept. of Agri., University Farm.  
 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.  
 DeFlom, Leland L., Moody Bible In-  
 stitute, Chicago, Ill.  
 Hauser, Geo., Line Coach, Football,  
 University of Minnesota.  
 Pendergast, Earl, Rockford, Ill.  
 Swanson, Herb., c-o Kimberley Clark  
 Co., Appleton, Wis.

1919

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

1920

Brayton, S. C., Grand Rapids, Minn.  
 Frudden, Clyde M., Greene, Iowa.  
 Grabow, R. M., 202 No. Broadway,  
 Pasadena, Calif.  
 Isaac, Leo A., Pacific Northwest  
 Forest Exp. Station, 514 Lewis  
 Bldg., Portland, Ore.  
 Palmer, Paul, Lake City, Minn.  
 Schmid, Walter W., 50 Church St.,  
 New York City.

1921

Anneberg, Robert D.  
 Armstrong, J. J., 2132 Dayton Ave.,  
 St. Paul, Minn.  
 Bryan, P. H., Ozark National Forest,  
 Russellville, 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., U. S. Forest Exp.  
 Sta., 348 Baronne St., New Or-  
 leans, La.

Whiton, Arthur L., 111 West Washington St., Chicago, Ill.

1922

Anderson, Alvin A., 111 West Washington Street, Chicago.  
 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 Liberty, Iowa.  
 Dockstader, Chas., 1605 Juliet Street, St. Paul, Minn.  
 Fegraeus, Thorbern, deceased.  
 Fenger, Gunnar, supervisor Huron Nat'l Forest, U. S. F. S., East Tawas, Michigan.  
 Frost, Orcutt W., 18 Fourth St., Cloquet, Minn.  
 Hamilton, Herbert, McCloud, Calif.  
 McCreery, Otis, Assistant Dean of Student Affairs, University of Minnesota, Minneapolis, Minn.  
 Nelson, Arthur L., Nebraska National Forest, Halsey, Neb.  
 Probsfield, E. E., c-o Holland-American Plantations, Kiseran, Asahan, Sumatra, D. E. I.  
 Stevens, Raymond, Minn. Forest Service, Old Capitol, St. Paul, Minn.  
 Streinz, Augustine, Asst. Prof. of Forestry, 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 Forest, Hot Springs, Ark.  
 Christopherson, Clifford, 1129 West Lawrence, Appleton, Wis.  
 Hoar, Walter G., Coeur d'Alene National Forest, Coeur d'Alene, Idaho.  
 Kribs, D. A., Forest School, Mount Alto, Penn.  
 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.

Nelson, Albin C., Dept. of Conservation, Old Capitol Bldg., St. Paul, Minn.

Ostergaard, Harold, Dept. of Conservation, Old Capitol Bldg., St. Paul, Minn.

Pillow, M. Y., Forest Products Laboratory, Madison, Wis.

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

Upton, Nelson, Chahalis, Wash.

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

Youngers, P. W., Southern Surety Co., San Francisco, Calif.

1925

Barrett, Wilford, Hibbing.

Baumhofer, L. G., Bureau of Entomology, Washington, D. C.

Blandin, H. M., Quincy, Ill.

Cooper, Geo., Yale School of Forestry, New Haven, Conn.

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., Duke Forest School, Durham, N. C.

Racey, Chas., 1003 8th Street S. E., Minneapolis, Minn.

Thompson, Roy, U. S. Forest Taxation Inquiry, 360 Prospect St., New Haven, Conn.

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. Plumias National Forest.

Goldberg, Hyman M., 711 Dayton Avenue, St. Paul, Minn.

Henry, Leslie, U. S. F. S., Lander, Wyo.

Ilstrup, Marshall, deceased.

Jackson, Lyle, Botanical Laboratory, U. of Pa., Phila., Pa.

Janssen, Geo. R., 911 Carroll Ave., St. Paul, Minn.

Kelsey, H. B., 2817 17th Ave. S. E., Minneapolis, Minn.

- Kuenzel, J. G., Columbus, Ohio, Cent. Forest Exp. Station.
- Lindgren, R. M., Graduate School, U. of Minn., P. Path.
- Lystrup, Herbert, Warrendale, Greenhouse, Como Ave., St. Paul, Minn.
- Manuel, Ronald, Call father, S. E. Minneapolis.
- Shaddock, 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, 1824 East 1st Street, Duluth, Minn.
- Whitechurch, Gale M., Los Angeles County Forestry Dept.
- Zierke, E. A.
- 1927
- Carlson, C. Homer, 3838 22½ Ave. S., Minneapolis, Minn.
- Chapman, Roy A., So. Exp. Station,
- Chase, W. Warren, Div. of Forestry, U. of M., St. Paul, Minn.
- Clement, Raymond, Minn. Forest Service, Old Capitol, St. Paul, Minn.
- Duclos, E. P., 2371 No. 70th St., Wauwatosa, Wis.
- Eaton, J. J., 2228 Langford Ave., St. Paul, Minn.
- Hartupee, Chas. H., Red Wing, Minn.
- Himebaugh, W. K., Route 2, Hopkins, Minn.
- Horton, Gerald S., U. S. F. S., Deer River, Minn.
- Kaner, Arnold, Cloquet, Minn.
- Knutson, Clarence, U. S. F. S., East Tawas, Mich.
- Koelbe, 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.
- Swanbeck, H. J., 813½ 12th Ave. S., Minneapolis, Minn.
- Verrall, Arthur F., U. S. Forest Exp. Station, New Orleans, La.
- 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.
- Clark, Edgar, 1006½ So. Oak Ave., Sioux Falls, So. Dak.
- Cook, Oliver, Flour City Paper Box Co., Minneapolis, Minn.
- Cooper, Arthur,
- Deen, Lee J., Yale Forest School, New Haven, Conn.
- Deters, Merrill, 1141 Hague Ave., St. Paul, Minn. Division of Forestry, U. of M.
- Fischer, Wm., Slack Hills, Rockford, So. Dak.
- Foster, Ellery, 348 Baronne, New Orleans, La.
- Grant, Albert, Scott Pole Company, Minneapolis, Minn.
- Halvorson, George, Page & Hill Pole Co., Minneapolis, Minn.
- Harvey, Harry, 1189 Hague Ave., St. Paul, Minn.
- Kirkham, Dayton, U. S. F. S., Big Horn, Wyo.
- Knudson, Ray, Gully, Minnesota.
- Knutson, Clifford J., 3236 18th Ave. S., Minneapolis, Minn.
- Limstrom, Gustaf, U. S. F. S., Mio, Mich.
- Lotti, Thomas, Lake States Forest Experiment Station, St. Paul, Minn.
- Norgorden, Emil, P. O. Box 41, Le Roy, Minn.
- Rathbun, Harold, National Pole and Tie Co., Minneapolis, Minn.
- Rudolf, Paul, Lake States Forest Experiment Station, St. Paul, Minn.
- Trench, Kenneth.
- Van Alstine, J. Neil, U. S. F. S., White Mt. National Forest, Laconia, N. H.
- Whitehill, Benjamin, U. S. F. S., Box 202, Ft. Collins, Colo.
- 1929
- Anderson, W., U. S. F. S., Mapleton, Ore.
- Andrews, Shirlee B., c-o Michigan Tie & Pole Co., Reed City, Mich.
- Wogenson, Adolph K., Tyler, Minn.
- George, Ernest, Northern Great Plains Experiment Station, Mandan, N. D.
- Kaufert, Frank, U. Farm, St. Paul, Minn.

- Christenson, Clyde, Halle, Germany.  
 Crew, John, 3233 21st Ave. S., Minneapolis, Minn.  
 Chapman, Dale, So. Expt. Station, Calif. For. Exp. Sta., 348 Barrone St., Berkeley, Calif.  
 Hallin, Wm., Calif. Exp. Sta., 348 Barrone St., Berkeley, Calif.  
 Light, James, Ottawa, Ohio.  
 Marks, Elmer, Pend O'Riell, Idaho, c-o U. S. F. S.  
 Neetzel, John, Lake States Exp. Station, St. Paul, Minn.  
 Parr, Thad., Yale Forestry School, New Haven, Conn.  
 Peterson, Harry A., 208 W. Washington St., Chicago, Ill.  
 Ritter, Lawrence, 1400 Raymond Ave., St. Paul, Minn. Blister Rust Control.  
 Roan, Audray, c-o Gamble Store, Rochester, Minn.  
 Robinson, Winfield R., Indian Agency, Neopit, Wis.  
 Thomas, R. D. Jr., \*International Paper Co., Glen Falls, N. Y.  
 Tilden, Ray B., 253 Louis St., St. Paul, Minn.  
 Williams, David M.
- 1930
- Aamot, A. Loren, Spring Valley, Minn.  
 Anderson, Carl H., 1245 Hamline, St. Paul, Minn.  
 Anderson, Milton, 519 5th St. S., Virginia, Minn.  
 Anderson, Robert, U. Farm, St. Paul, Minn.  
 Bulfer, Daniel, U. S. F. S., Ogden, Utah.  
 Benson, Eynar, Proctor, Minn.  
 Boettcher, Paul, Retail Lumber Co., Arthur, N. Dak.  
 Brener, William, Wisc. Conservation Commission, Gordon, Wisc.  
 Clough, Robert, 253 Louis St., St. Paul, Minn.  
 Wiese, Clarence, Land Economic Survey, 411 N. 8th St., Watertown, Wis. (Home address)  
 Chase, Clarence, Div. Forestry, U. of M. P. Path.  
 Forder, Milton, Buhl, Minn.  
 Freeman, Victor, Upton, N. Dak.  
 Olson, George, Lake States Forest Experiment Station, U. Farm, St. Paul.  
 Lorenz, Rolland, Forestry Laboratories, Moirovia, Liberia, West Africa.  
 Maki Tenho, U. of Minn., Soils Div.  
 Mitchell, Harold, Graduate School, Harvard.  
 Nelson, Henry O., 2225 West 4th St., Duluth, Minn.  
 Parish, John, Alpha, Minnesota.  
 Pawek, Hugo, Duke Forest School, Durham, N. C.  
 Puphal, Irvin.  
 Royer, William, 605 So. Scoville Ave., Oak Park, Ill.  
 Tesaker, Avid, Crosby, Minn.  
 Wittenkamp, Richard, Land Economic Survey, Madison, Wis.  
 Wogenson, Adolph K., U. S. F. S., Region 7, North Carolina.  
 Woodford, Reinald, 928 E. Lawson St., St. Paul, Minn.
- 1931
- Anderson, Clarence E., Graduate School, Iowa State University, Ames, Iowa.  
 Anderson, Frank H., 823 Queen Ave. No., Minneapolis, Minn.  
 Day, Maurice W., Minnesota F. S.  
 Dolence, Frank, Box 1994, No. Hibbing, Minn.  
 Donehower, Weston, Dept. of Forestry, Cornell University, Ithaca, N. Y.  
 Huckenpahler, Bernard J., Appalachian Forest Exp. Station, Asheville, N. C.  
 Beardsley, Charles, N. Y. S. College of Forestry, Syracuse, N. Y.  
 Bender, Edwin, Chaska, Minn.  
 Bjorgum, Eldar, 2520 24th Avenue, Minneapolis, Minn.  
 Buckman, Stanley, Graduate School, University of Minnesota.  
 Campbell, Donald, Duluth, Minn.  
 Dahl, Ernest, Lake Mills, Iowa.  
 Frederickson, Frank, Minnesota Forest Service.

- Grady, William, 638 Ashland Ave.,  
St. Paul, Minn.
- Hunt, Robley, Graduate School, Uni-  
versity of Minnesota.
- Janelle, Harley, 618 N. 59 Ave. W.,  
Duluth, Minn.
- Karkula, Alexander, Graduate School,  
University of Minnesota.
- Keene, Henry F., Lewisville, Minn.
- Knoblauch, Chas. J., Excelsior, Minn.
- Lidberg, Carl L.
- Mayer, Arthur, 4229 30th Ave. So.,  
Minneapolis, Minn.
- Moore, Lee L., 918 So. Paxton, Sioux  
City, Iowa.
- Nelson, Alf, 3903 Stevens Ave.,  
Minneapolis, Minn.
- Niles, Edwin, 427 Oliver Ave. S.,  
Minneapolis, Minn.
- Olson, Clarence, U. Farm.
- Osborne, Raymond.
- Peterson, Lyall E., 1606 Penn Ave. N.,  
Minneapolis, Minn.
- Quick, Russell, 1166 Ivy Street,  
St. Paul, Minn.
- Randall, Charles, U. Farm, Univer-  
sity of Minnesota.
- Rigg, Milford T., Graduate School,  
University of Minnesota.
- Risbrudt, Clifford, 541 Capital Ave.,  
St. Paul, Minn.
- St. Amant, Paul, Wayzata, R. F. D.  
3, Minnetonka, Minn.
- Schneider, Arthur, Sup. Nat. Forest.
- Sterba, Webster, Graduate School,  
University of Minnesota.
- Stewart, Donald, Division of Plant  
Pathology, Univ. Farm, St. Paul,  
Minn.
- Stoudt, Jerome H., Hastings, Minn.
- Sword, Wayne, Mack, Minn.  
Wellberg, Ernest.
- 1932
- Roan Anderson, Monticello, Minn.
- Dorothea Cahill, 286 Warwick Ave.,  
St. Paul, Minn.
- John Cann, Faribault, Minn.
- Harold Engstrom, Detroit Lakes.
- Clarence Evenson, Forest Exp. Sta.,  
Cloquet.
- Donald Ferguson, Detroit Lakes,  
Minn.
- Arthur Horn, 3204 21st Avenue So.,  
Minneapolis.
- Edward S. Iverson, Waseca, Minn.
- Clayton R. Jackson, Grand Marias,  
Minn.
- J. Allen Jackson, Phillips, Wisc.
- John C. Kopitke, 450 N. E. Buchanan,  
Minneapolis.
- Laurits W. Frefting, 4851 Lyndale  
Avenue No., Minneapolis.
- Alan F. Laidlaw, Cloquet Forest Exp.  
Station, Minnesota.
- Irving H. Moore, 3438 Emerson Ave.  
No., Minneapolis.
- Stanley B. Olson, 2400 Lyndale Ave.  
So., Minneapolis.
- Arthur Roe, 4643 18th Ave. So.,  
Minneapolis.
- Dale Sanders, Detroit Lakes, Minn.
- Albert L. Tofte, Tofte, Minn.
- Harold Tysk, 1277 Sherburne Ave.,  
St. Paul.
- Roy Wagner, 4346 44th Ave. So.,  
Minneapolis.
- Ronald Woolery, 2372 Doswell Ave.,  
St. Paul.
- Harry E. Adams, 3512 Fremont Ave.  
So., Minneapolis.
- Leonard H. Moore, 1367 Breda Ave.,  
St. Paul.
- Herman F. Olson, Amery, Wisc.

ENROLLMENT

FRESHMEN

Earl J. Adams Minneapolis  
 Donald Ambrosen Winona  
 Herman Arle Norwood  
 Robert D. Baker  
     St. Croix Falls, Wisc.  
 Alan Bodene Enderlin, N. Dak.  
 Richard Boyer Minneapolis  
 Bernardine Brown St. Paul  
 Linden Bush St. Paul  
 Donald Carswell St. Paul  
 J. William Ceder Minneapolis  
 Joseph Chowen Minneapolis  
 Herbert Erickson Minneapolis  
 John Gelbmann St. Paul  
 G. Harland Gregory Duluth  
 Frederick Guest Minneapolis  
 Howard Hass Minneapolis  
 James Henderson St. Louis Park  
 Charles Isaacs Minneapolis  
 James Kimball St. Paul  
 Milton Kral Cudahy, Wisc.  
 John Kramer St. Paul  
 Edward Kron St. Paul  
 Roger Lindgren St. Paul  
 Francis Linehan St. Paul  
 Joe Loomis Rock Island, Ill.  
 Roger Meacham St. Paul  
 Frederick Miles Minneapolis  
 Harry Mosebrook St. Paul  
 Charles Mulally St. Paul  
 Myron Ostrander Minneapolis  
 Bernie Peterson Rugby, N. D.  
 Duane Rauenhorst Fulda, Minn.  
 Claude Samuelson Lake Wilson  
 Evan Sanders Mahtomedi  
 Robert Schaeffer Bangor, Pa.  
 Thomas Schrader Worthington  
 Peter Schuft Hutchinson  
 William Severance Minneapolis  
 Sulo Sihvonen Craigville  
 Walter Snesrud Webster  
 Rudolph Starek St. Paul  
 James Stevenson Minneapolis  
 Robert Swanson St. Paul

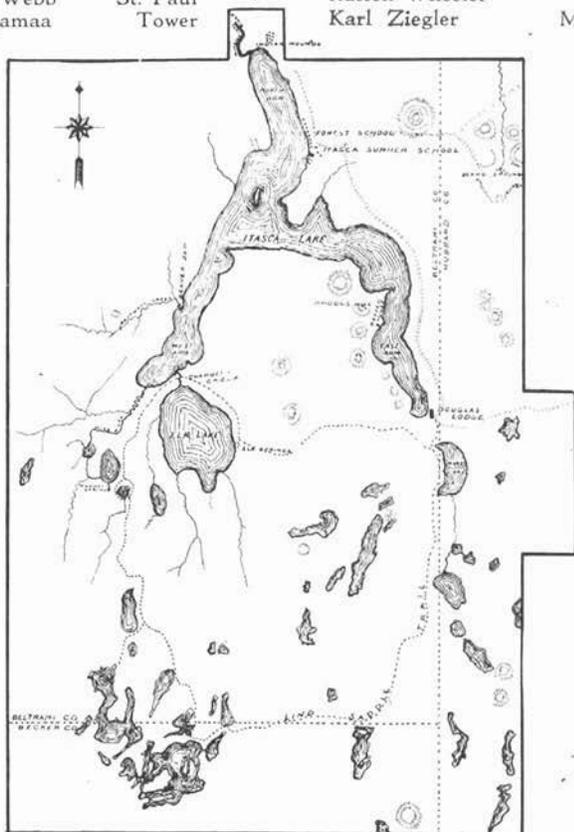
Arthur Sweet St. Paul  
 Carl Thiry St. Paul  
 Del Walker Thorsen Minneapolis  
 Yale Weinstein St. Paul  
 Gordon Wyatt St. Paul

SOPHOMORES

Verne Algren Hutchinson  
 George Amidon St. Paul  
 Claude Asp Floodwood  
 Russell Carlstrom St. Paul  
 Roy Carter Mauston, Wis.  
 Roy Dingle St. Paul  
 Raymond Ellstrom St. Paul  
 Thomas Evans Rochester  
 Jack Dundas Baudette  
 Carl Feltman Minneapolis  
 Walter Fransen St. Paul  
 Zina Hathaway Minneapolis  
 Eugene Hurley St. Paul  
 Oswald Krogfoss Crookston  
 William Laing Minneapolis  
 Arnold Lee Glenwood  
 Robert Lindeberg St. Paul  
 Anton W. Lindquist Cloquet  
 Joseph Lorenz Austin  
 Robert Merz Minneapolis  
 Waldemore Mohl Minneapolis  
 Eugene C. Nelson Winona  
 Lansing Parker Albert Lea  
 John S. Riss Worthington  
 Ragner Romness Marcell  
 Russell Rosendahl St. Paul  
 Robert Sharp St. Paul  
 Richard C. Smith St. Paul  
 John Stephens Mandan, N. D.  
 Arthur Sturtevant Minneapolis  
 Frank Walz Minneapolis  
 Myron Wurdeman Mandan, N. D.  
 Thorolf Bergh Minneapolis  
 Don W. Burcalow St. Paul  
 Lynn Hatch Neopit, Wisc.  
 Walter Jacobson Minneapolis  
 Urban Nelson Cokato

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Robert Clark	St. Peter	Howard L. Brown	Minneapolis
Jack Densmore	Edgewood, Iowa	William Emerson	St. Paul
Birger Ellertsen	Brooklyn, N. Y.	Orville Hatle	Hartland
Wilson Hall	St. Paul	Barclay Infantino	Pundsutawna, Pa.
George Herion	Chicago, Ill.	Robert Kolbe	Minneapolis
Edward Holbrook	Minneapolis	Lincoln Mueller	New Ulm
Russell W. Johnson	St. Paul	Urban Nelson	Cokato
Wilfred Lauer	Minneapolis	Sidney Rommel	Minneapolis
Donald Lynch	Minneapolis	Peter Super	Minneapolis
Carl H. Anderson	St. Paul	Russell Younggren	Virginia
Arthur Hawkinson	Onamia	Ralph Christopherson	Virginia
Oscar Stabo	Cass Lake	John Dobie	Minneapolis
Francis Moore	St. Paul	Ralph Graves	Morton
Marius Morse	Minneapolis	Henry Hansen	St. Cloud
John Murphy	Stillwater	Rutven Hedland	Elmore
Ralph W. Nelson	Duluth	Karl Kobes	New Bedford, Mass.
Robert Nord	St. Paul	Edward Penek	St. Paul
Herbert Norman	Cambridge	Paul Seastrom	Geneva, Ill.
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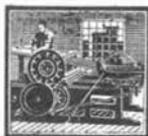
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## APPRECIATION

*It is only through the co-operation of the students, alumni and faculty with their much needed help, the loan of cuts from the State Department of Conservation, the University News Service, the University Farm Publications, the Ten Thousand Lakes Association, and the indispensable support of our advertisers that the 1933 Gopher Peavey was made possible. To them the Peavey Staff and Peavey Board wish to express their sincerest appreciation and thanks.*

## CONCLUSION

It is the sincerest hope of the Peavey Staff that the Gopher Peavey of 1933 will mean more than just another annual, but rather a coalescing media for our school. We feel that the students, alumni, and faculty are all a part of one big family and should unite as one for the Minnesota Forest School.