

COPPER PEAVEY

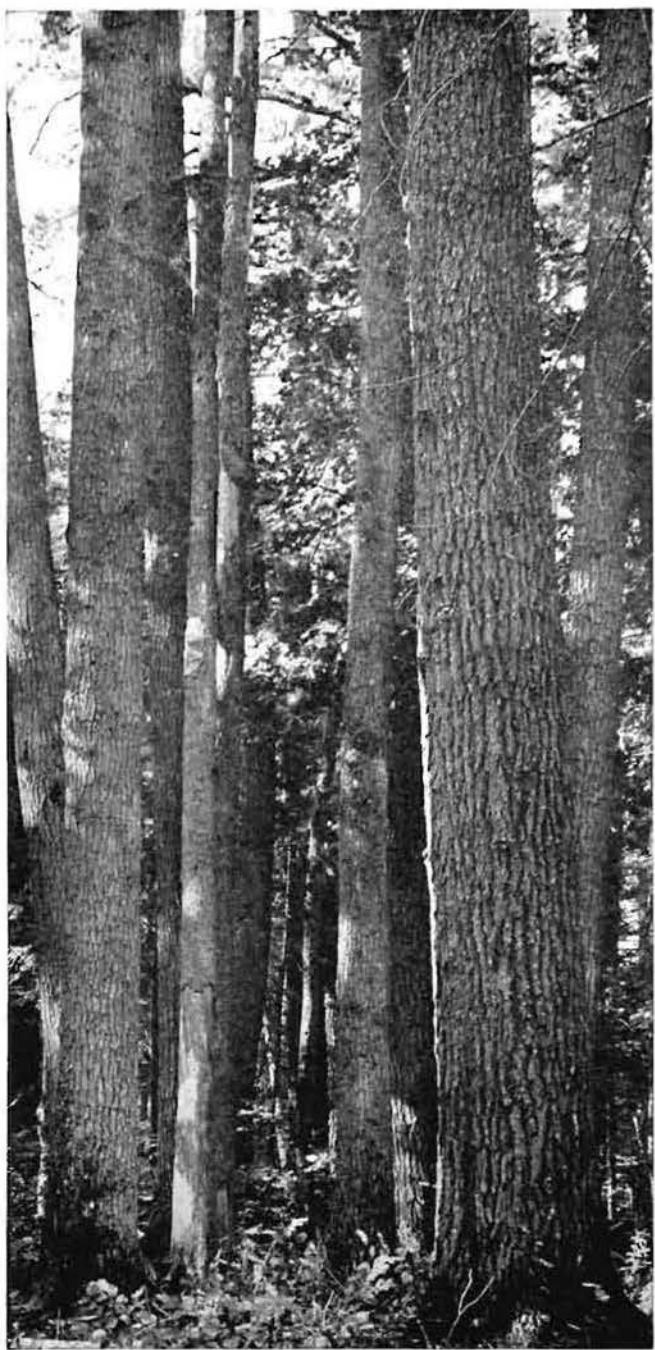
192

The
Gopher Peavey

THE ANNUAL
PUBLICATION OF THE
FORESTRY CLUB

University
of Minnesota

NINETEEN TWENTY-THREE





To Edward G. Cheyney

Whom we honor as our chief
and value as our friend; we Minne-
sota Foresters respectfully dedicate
this annual.

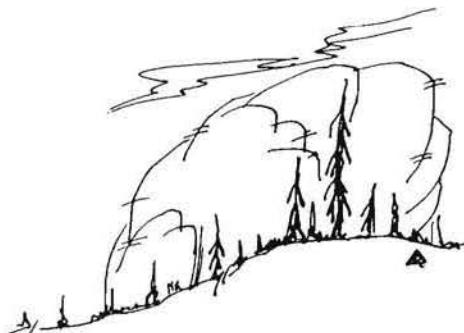
Foreword

IN the assembling of this year's annual, we have endeavored to accomplish three things; namely, to chronicle the college life of the past year, to supply a link between the alumni and the student body, and to present something of technical nature to those interested in Forestry. Perhaps we have deviated somewhat from the usual style of forest school annual, but we believe that a publication embodying the representative life of the school year, both serious and humorous, means more as an annual than a strictly technical edition.

What we produce is the result of the co-operation of the four classes, the faculty and the alumni. Not only those within the scope of the college have aided us, but the Weyerhaeuser Co., Thompson Yards, The Red River Lumber Co., Duluth and Iron Range R. R., and the Minnesota Forest Service have loaned us many of the cuts used. Our advertisers make possible this publication, to a large extent—see that you show your appreciation by your patronage.

The 1923 Gopher Peavey is now in your hands. We have tried to put forward our best efforts, but whether or not we have attained our goal rests in your judgment.

THE STAFF,
1923 Gopher Peavey.



PART I

The Mill

OF COLLEGE LIFE

History Minnesota Forest School
—E. G. Cheyney.....Page 7

FacultyPage 10

SeniorsPage 13

JuniorsPage 18

SophomoresPage 20

FreshmenPage 24

Forestry ClubPage 27

I. A. F. C. Convention...Page 29

Xi Sigma Pi.....Page 30

1923 GOPHER PEAVEY



A Logging Road



Taking 'em Out

HISTORY OF THE MINNESOTA FOREST SCHOOL

BY E. G. CHEYNEY

Chief of the Division of Forestry, U. of M.

FORESTRY in the University of Minnesota took its place in the curriculum solely through the personal interest of Professor Samuel B. Green, who was at that time Professor of Horticulture. Professor Green became interested in forestry through his travels in Europe, and being a far-seeing man of broad vision, he quickly saw the possibility of applying some such methods to his own state. He began the work by introducing a few elementary courses into the curriculum of the College of Agriculture, about 1897.

In those days the Agricultural course was in a rather indefinite stage of development. The first year in the college was identical with the third year in the school, and when a man completed his freshman year in the college he was formally graduated from this School of Agriculture. Several other Forestry courses were introduced from time to time until finally a man was graduated in 1899, who was definitely classified as a forestry student. That man was H. H. Chapman, now professor of Forest Management in the Yale Forest School. M. L. Erickson was graduated in 1903, and Harold Cuzner in 1905.

Due to President Roosevelt's enthusiastic support of the United States Forest Service and to the general propaganda which filled the magazines and newspapers at that time, interest in forestry grew to the point where the number of students justified Professor Green in asking for help in that particular line of work, and E. G. Cheyney came to the University as an assistant in forestry in the fall of 1905. There were at that time 26 students in the Agricultural College, and a large number of these were particularly interested in forestry. In 1907 there were 55 men in the freshman class in forestry, most of them without any idea of what forestry was, and laboring under the false impression that they were headed for an everlasting camping trip. Out of the 55, 17 were graduated. About 1907 J. P. Wentling was added to the faculty, and a separate curriculum was established for students specializing in forestry. They were no longer required to take the third year work of the School of Agriculture, and were allowed to take certain special courses in forestry instead of the usual agricultural courses in the college. At that time the total registration in forestry was about 80, the most that it has ever been until the present year.

In the spring of 1910 Professor Green succeeded in getting forestry recognized as a separate college, though still a division of the Agricultural

Department, and he was appointed as Dean. Unfortunately he did not live long to develop his college. He died of heart failure at Itasca Park in July, 1910. Professor Cheyney succeeded him as chief of the Forestry Division.

S. B. Detwiler and Austin Cary both served on the faculty for a short time during the next five years, and in 1913 J. H. Allison was added to the staff as Professor of Forestry.

The school was developing well when the forestry policy of the United States Government had somewhat of a set back. There was no longer a ready opportunity for our graduates to enter government service, and at that time very few other possibilities were open to them. Registration began to fall off until by 1915 there were only about 35 students registered in the school. Just as it was beginning to recover, the world war came on, and the school was practically wiped out, and the faculty busied themselves with war work, and the students enlisted in the army or the R. O. T. C. After the war the school progressed again, even more rapidly than it was doing at the time the war broke out, but the registration recovered slowly. There were plenty of freshmen, but the other classes were badly depleted. Only three were graduated in 1917, five in 1918, and one in 1919. Gradually this large freshman registration has built up the other classes till the total school registration is now 98, the highest it has ever been. Mr. L. L. De Flon has been added to the faculty as an instructor in dendrology.

The solid growth of the past few years has been largely due to the broadening of the scope of the course. A combination of the fundamental forestry courses with the fundamental courses of the college of business is proving a very satisfactory preparation for the lumber business, and now enrolls about half of the students. A few are combining their forestry courses with a good line of chemistry as a preparation for the paper and pulp industry. Both these new courses are, I think, destined to be even more popular in the future.

A vital part of the school, but one with which the students are less familiar, is the experimental station at Cloquet. Through the efforts of Professor Green the St. Louis River Mercantile Co. of Cloquet donated 2,240 acres of land with part of the timber thereon to the Forestry Division in 1908. The legislature of 1909 accepted the gift, appropriated the necessary money for maintenance, and \$5,000 for the purchase of certain Indian allotments which were needed to block out the tract, thus increasing the holdings there to 2,640 acres.

Mr. D. P. Tierney was placed in charge, fire lines were constructed, and building started. Mr. Tierney resigned to accept the position of assistant State Forester when the Minnesota Forest Service was created in 1911; Mr. S. B. Detwiler was placed in temporary charge of the station. In 1912 a co-operative agreement was signed with the United States Forest Service for the direction of the experimental work, and Mr. W. H. Kenety was placed in charge. Many valuable projects were inaugurated and the station developed till it has become at least the equal of any

forest experiment station in the country, both in equipment and accomplishment.

Mr. G. H. Wiggin of the class of 1913 and Mr. T. S. Hansen of 1915 were added to the Cloquet staff. In 1920 Mr. Kenety resigned to accept a position with the Cloquet Lumber Company, and Mr. Wiggin has since been in charge. So far as I know there is only one other school in the country conducting such an experiment station. It affords unexcelled facilities for research work and does much to keep the faculty on its toes.

Both Mr. Wiggin and Mr. Hansen come to the St. Paul campus for the winter quarter, and materially strengthen the teaching staff.

No history would be complete for the alumni if it did not include Itasca Park.

In the summer of 1906 the need of a forest summer station for use as a laboratory for the college classes was brought to Professor Green's attention, and he succeeded in getting from the State Forestry Board a concession for that purpose in Itasca Park. The first students to go there was a gang employed by the Forestry Board to cut out the fire breaks around the Park in the summer of 1907, but it was not till the next year that the old State House was formally turned over to the school as headquarters, and the first class, juniors of the class of 1909, reported there for work.

A short course in forestry, nature and woodcraft for teachers was also inaugurated that same year. It was quite successful, but was discarded as too burdensome three years later.

Gradually buildings, equipment, a nursery and a nursery-man were accumulated till the station is one of the best in the country, and is dear to the hearts of the alumni.

At first only the junior class "went to the Park" for 16 weeks. Later it was found advisable to have the freshmen there for some preliminary work. For the past five years the freshmen have put in six weeks from the end of college to the first of August, and the junior work has been reduced to the spring quarter, and confined to the men who are taking the technical forestry course.

For the past three years a short course of two weeks immediately following the freshman course has been given for the Boy Scout leaders of the state. This is the only course of just that kind in the country, and has proven very successful.

* * *

SLIGHT FAVOR REQUESTED

An eastern college graduate applied for work in a Minnesota lumber camp and was assigned to one end of a saw, the other end in charge of an old experienced woodsman. At the end of an hour the veteran stopped sawing and regarded his weary partner with pitying eyes.

"Sonny," he said, "I don't mind your riding on this saw but if it's just the same to you, I wish you wouldn't drag your feet."

FOREST SCHOOL FACULTY

E. G. CHEYNEY

Chief of the Forestry Division and Professor of Forestry.
Cornell, A. B., 1900.
U. S. Forest Service, 1903-04, in North Carolina, West Virginia, Texas, Black Hills, and Colorado.
Yale Forest School, 1904-05.
1905 came to Minnesota.
1911 became head of the Forest School.
Member Sigma Xi and Xi Sigma Pi.
Senior Member, Society of American Foresters.
Member of the Minnesota Forestry Board.



J. P. WENTLING



Franklin and Marshall College, A. B., 1902; A. M., 1905.
U. S. Forest Service, 1904-05.
Yale Forest School, M. F., 1904-05.
U. S. Forest Service, 1905-06.
Pennsylvania Department of Forestry, 1906-08.
Professor of Forestry, State Forest Academy.
Assistant Professor of Forestry, 1908-1914, Minnesota.
Associate Professor of Forestry, 1914.
Special Agent in Utilization of Chestnut for Pennsylvania, 1912-14.
Member of Sigma Xi and Xi Sigma Pi.
Senior Member, Society of American Foresters, and Secretary of the St. Paul Section.
Member of the Pennsylvania Forestry Association.

1923 GOPHER PEAVEY

J. H. ALLISON

Sheffield Scientific School, Yale, Ph. B., 1905.
Yale Forest School, M. F., 1906.
U. S. Forest Service, 1906-12.
Forest Assistant, 1906-08, San Francisco Mountains National Forest
(now Coconino.)
Forest Examiner, 1908-13.
Professor of Forestry at Minnesota.
1913.
Office of Management, District 3, 1919.
Eleven months on working plans for
the Coconino and Fusayan National
Forests.
Member Xi Sigma Pi.
Senior Member, Society of American
Foresters.



L. L. DeFLON

Minnesota, B. S. in Forestry, 1918; M.
S., 1922.
World War.
Assistant in Forestry Division, 1919-22.
Instructor, Forestry Division, 1922.
Member Xi Sigma Pi.



G. H. WIGGIN

Minnesota, B. S. in Forestry, 1913.
U. S. Forest Service, 1913-14, Feather
River Experiment Station, Quincy
River, Calif.
Cloquet Experiment Station, 1914,
Assistant Superintendent. In charge of
Experiment Station since 1920.
World War, 20th Engineers.
Member Xi Sigma Pi.
Instructor, Division of Forestry, during
the winter quarter.



T. S. HANSEN

Minnesota, B. S. in Forestry, 1915.
Yale Forest School, M. F., 1917.
U. S. Forest Service, Priest River Experiment Station, Priest River, Idaho, 1915-16.
Assistant at Fort Valley Experiment Station, 1917.
World War.
Assistant Superintendent, Cloquet Forest Experiment Station, 1919.
Instructor, Forestry Division, during the winter quarter.
Member Xi Sigma Pi.

* * *

It seems that "Swede" Weswig borrowed the family chariot to go partridge hunting last fall. We understand that he and the Overland strayed from the well beaten highway and were forced to ask a local son of the soil for guidance.

"Swede": "Hey, can you tell me how to get to Bethel?"

S. O. T. S.: "No."

"Swede": "Well, can you tell me how to get to the Jefferson High-way?"

S. O. T. S.: "No."

"Swede": "Say you don't know much, do you?"

S. O. T. S.: "Wal, now.—I'm not lost!"

Exit "Swede."

Seniors

NUMBER I SELECTS D. & M.*

THE JUNIOR CORPORATION OF 1922

BY C. DOCKSTADER, '23

Every year at some date in the early spring, a certain Great Northern train pulls north with more than the accustomed noise and whistling, due to the fact that it has distinguished passengers aboard in the form of a group of foresters belonging to the upper strata of the college; meaning in more definite language—the exalted Junior class. Nineteen twenty-two proved no exception, and so at about nine P. X. on March thirtieth the schedule ran true to form, and a group of hardy foresters sped north to the "wild and woolly" woods of Itasca.

The gang was rather small, but loss in quantity was greatly overbalanced by the quality of the group—there being present: Speed, Chester, Gump, Jack, and Doc; or in plain ordinary language, Upton, Probstfield, Nelson, Frost, and Dockstader.

We left with some misgiving because Fenger, our esteemed steward, was unable to start—and while we would have enjoyed his company we were really worried about our grub. It was truly remarkable that we all arrived on time considering the fond farewells to be made, etc., etc.

But as has been stated, in spite of all handicaps we did finally get started and after a rather hectic day arrived at Park Rapids white way at five-fifteen, the train actually being on time. We found Stevens wandering through the intricate mazes of the town and with his help managed to thread our way through the traffic to the hotel. We do not want to cast slighting remarks or belittle the judgment of any previous Junior Corporation, but we felt greatly pleased with ourselves for deciding to spend the night in town rather than push our truck to the Park. The evening was spent at a movie, at least that's what the sign said it was, and then we retired to our spacious hotel suite to write the first letters and lay in a supply of towels.

The next morning found us well on our way to the Park. At Arago the native showed us a gruesome spot where it is reported that a previous group of foresters had nearly frozen to death, and while we looked at the place with some awe, nevertheless we could not very well conceal our pride in our own keen judgment, and especially in the judgment of our truck driver who wouldn't take us out the night before.

Upon arriving at the camp we immediately set things to rights. April Fools day was spent in sawing wood, so that the cook would have nothing to do to earn her salary when she arrived. We were all supposed to be

*Lumbermen's code—Dressed and matched.

lifting on the logs but, if Doc's sore wrists next day meant anything, most of the bunch were only faking it.

Monday we started work under Prof. Allison and simultaneously a nice snow storm arrived to multiply our difficulties. By this time the corporation was in full swing, Fenger having arrived to complete the organization. Steve filled in as president and the rest of us made fine ballast.

Forest regulation was our work under Prof. Allison and between Roth and the weather we managed to keep from getting rusty. The snow liked to linger in the woods and any one of us would have won a captaincy in the Swiss army for our feats of daring in dragging chain and compass through the snow drifts.

Stevens was our "Big Ben," and always contrived to wake the K. P. on time to have him assume his important duties, which consisted in hauling water, chopping wood, and listening to "Fran" and "Maggie's" heated debates in the cook shack. The progress of the meal was always the same—a mad rush for the shack and then food and more food. We had no orchestra but Speed's "coffee yodeling" surpassed all expectations, and so furnished us with the desired entertainment. When speaking of quantity consumed we gladly placed Jack and Steve at the top because of their anaconda-like propensities for food. Gump and Eddie always finished close seconds under full steam, but as Speed had difficulty in

locating his mouth his capacity was never taxed. Doc always showed a very bird-like appetite but at that he beat out Fenger, who finished a poor last due to the fact that he was obliged to take pepsin tablets (or their equivalent) in order to get a soft boiled egg past his back teeth.

The boys with two exception showed no musical inclination what-so-ever. Gump and Doc tried hard to please with touching renditions of everything from "Mandy and Me," to "Dan! Dan!" but the only enthusiasm shown by the other members came in the form of shoes, boxes and other miscellaneous loose material. To be truthful, the bunch were perfectly willing to test out the theory that a true artist is never appreciated until after his death, by killing either of the innocent songbirds and watching results.

April ninth was the date of the first outcropping of the boy's baser spirits, for that night, as we were



Time out for Wood Ticks

gathered in congenial company about the stove, Jack loaded Speed's tobacco with gunpowder. But the saddest part of all was that Doc furnished the fireworks through the proverbial borrowed "makings." Later it seems that the bolts from Speed's bed became misplaced, and his anger was rising to blood heat when they suddenly reappeared; whereupon Speed fixed the outfit and retired after singing (????) the "End of a Perfect Day." The bunch were rather well behaved. Of course Gump spent one night in close association with fine cut horse hair, but he seemed to be right in his element and the horse-hair finally gave up the ghost.

On April 25th Gump, Jack, and Doc separated the ice cakes and jumped in the lake. It proved to be very invigorating, judging from the increased activity of the participants in making their recovery. Steve and Eddie declined to partake, because they claimed that they had taken a bath before starting up in March, and Fenger and Speed thought that they would rather just drink their water for awhile.

Easter the gang got religion and led by Gump went to the local county church where they flirted outrageously with the belles of the country side. Shortly after this the ice started moving from the lake and our boat-house, having spent the winter in its embrace, desired greatly to follow, but much to our regret the last prop held the shack in place.

By this time the days were becoming balmy. Speed's frozen ear was beginning to swell, and almost simultaneously with this sure sign of spring, the first feminine visitors arrived from Park Rapids. It remained for Steve and Gump to assume the role of host and they did it to perfection. The social neglect of the other members cannot be explained, but as Jack was wont to wander through the woods on moon-light nights, drinking deep of their delicious melancholy, we can imagine why the rural beauties held no attraction for him.

The log drive started on May fourth, and Gump thrilled the river pigs with his spectacular work, especially when he tried to imitate a Norway pine log and slide through the sluice-way. The log drive finished; we started in earnest on our regulation reports, contriving our best to find ways to ruin the Park.

Prof. Allison left and we started on our last lap of work in the nursery under Professor Wentling. Results of this work can best be estimated by the total production—the number of seedlings being dug up numbering at least a couple of billion, most of which we again promptly planted. This work was along sylvicultural lines and after doing our best with the practical side of things we combined our knowledge into a final report which we released from our systems about June ninth. Part of our time was spent on a trip to De Soto where we enjoyed several hard sleeps on the hard floor and absorbed great quantities of rain water. For the benefit of future visitors at De Soto cabin, it may be necessary to state that the peculiar grooves and waves in the floor are not a new form of "Sugi Cypress" but are rather the result of the clanking and clashing of our bones on the pine floor. Who said that the pines were soft woods?

The day finally came for our departure and being a very practical crew we left a warm fire in the extracting plant for the freshmen who were to follow. We hit south at about one thirty P. M. greatly to the relief of the sagging bunk house rafters which Chester kept covered with fungi, pictures and dendrological specimens and to the local mail carrier whom Doc had kept busy all spring.

Much could be said in conclusion but we will let that pass and end with the assertion that if we envy any group in all the world, it is the bunch of fellows who are to enjoy the privileges of future junior work at Itasca.

CLASS OF 1923

Clifford O. Christopherson, Minneapolis, Minn.

Major—Forest Products. Minor—Organization and Management.

Herbert S. Cheseborough, West Liberty, Iowa.

Major—Forest Products. Minor—Organization and Management.

Charles L. Dockstader, St. Paul, Minn.

Major—Organization and Management. Minor—Silviculture.

Thorbern Fegraeus, Duluth, Minn.

Major—Organization and Management. Minor—Forest Products.

Orcutt W. Frost, Minneapolis, Minn.

Major—Organization and Management. Minor—Silviculture.

Hubert D. Hamilton, Martinville, Indiana

Major—Forest Products. Minor—Organization and Management.

Louis J. Leffelman, Minneapolis, Minn.

Major—Organization and Management. Minor—Silviculture.

Arthur L. Nelson, Minneapolis, Minn.

Major—Organization and Management. Minor—Silviculture.

Edwin E. Probstfield, Minneapolis, Minn.

Major—Organization and Management. Minor—Silviculture.

Raymond E. Stevens, Duluth, Minn.

Major—Organization and Management. Minor—Silviculture.

Augustine J. Streinz, Minneapolis, Minn.

Major—Organization and Management. Minor—Silviculture.

Clarence W. Sunday, Marshalltown, Iowa

Major—Organization and Management. Minor—Forest Products.

Floyd H. Tilden, St. Paul, Minn.

Major—Organization and Management. Minor—Forest Products.

Paul W. Youngers, Minneapolis, Minn.

Major—Organization and Management. Minor—Forest Products.

Robert H. Knight, Le Roy, Minn.

Major—Organization and Management. Minor—Forest Products.

Philip H. Bryan, St. Paul, Minn.

Major—Organization and Management. Minor—Forest Products.

Gunnar K. Fenger, Askov, Minn.

Major—Organization and Management. Minor—Silviculture.



"Rip"
Dockstader

Blondes vs. Brunettes?



Fender
thrills the
river pigs

The
Gang -



JUNIOR CORPORATION, SPRING, 1922

Juniors

NUMBER 3 COMMON S1S1*

In the fall of 1920 the junior class started out some twenty strong to become true foresters in every sense of the word. While the class has suffered the loss of a few members, it has gained a few also. It is now a bunch of true foresters with forester's ideals before it.

The class as a whole first realized its responsibilities as foresters when the individual members were initiated into the Forestry Club. Well were they impressed by the older men and well did the class of '24 take up its duties as Foresters. The following June the gang, practically intact, went to Itasca Park to learn a pace from a woodchuck. Not only did they acquire some more definite ideas of the forestry profession, but they realized that a man is really developed under woods conditions. There is no place on this terrestrial sphere of ours where a forester, and likewise a true man, feels as if he belonged more than in the woods, especially on the U. of M.'s third campus.

The '24 class has shown up not alone to the forestry profession, but to the eyes of the world at large. The Minnesota football team of 1922 can boast of having two junior foresters, Chet Gay and Ray Ecklund, as regulars. Also, Ray Ecklund is one of the mainstays of the basketball team.

Mayhap, as mere pen of the '24 class, I sound unduly boastful, but pause to think—the Forestry College of the U. of M. has much to be proud of and, as one of the upper classes, haven't we a right to shout some?

Today is an advertising age and may the '24 class always have something new and worthy to advertise. We believe in it as we do in the U. of M. and our chosen profession.

M. Y. PILLOW, '24



The Funeral Procession

*Lumbermen's code—Surfaced one side and one edge.



The Library

CLASS OF 1924

Harold Betzold, Brainerd, Minn.
Harold R. Berggren, Minneapolis, Minn.
Chester J. Gay, Moose Lake, Minn.
Victor A. Lynne, Elbow Lake, Minn.
Herbert F. Maturen, Grand Rapids, Minn.
Albin C. Nelson, Christine, N. D.

Harold Ostergaard, Tyler, Minn.
Joseph W. Porzadek, Chicago, Ill.
Maxon Y. Pillow, St. Paul, Minn.
William A. Ritchie, Manitowoc, Wis.
Ernest F. Sheffield, Minneapolis, Minn.
Nelson Upton, Minneapolis, Minn.
Carl O. Weswig, St. Paul, Minn.



Sophomores

CLEAR SAPS K. D.^o

CLASS OF 1925

Wilford Barrett, Hibbing	Victor Jensen, Dassel
Harold Berggren, Minneapolis	John Kuenzel, Hastings
Eugene Bjornstad, St. Paul	Victor Lynne, Elbow Lake
Arland Blage, St. Paul	William Maughan, Excelsior
Howard Blandin, Minneapolis	Donald Nemec, St. Louis Park
G. Proctor Cooper, Duluth	Michael O'Connell, New London,
D. Alton Christianson, Hinckley	Wis.
Raymond Eklund, Minneapolis	Mark O'Dea, St. Paul
Ambrose Everts, Battle Lake	Charles Racey, Owatonna
Clement Flanagan, Antigo, Wis.	Nobel Shadduck, Annandale
Bernard Forseth, La Crosse, Wis.	Angus Stephen, Hinckley
Joseph R. Gordon, Duluth	Roy Thomson, Minneapolis
Walter Hoar, Shell Lake, Wis.	Roy Chapman, St. Peter
Leslie Henry, Harwick	Richard Delaney, Amery, Wis.

1922 FRESHMAN CORPORATION LOG OR WHY ITASCA ISN'T WHAT IT USED TO BE

BY CHARLES L. GILMAN

Those concerned:

"Gob" Roberts (Pres.)	"Bud" Stephen
"Abe" Everts (Sec.)	"Tomminie" Thomson
"Eggs" Brookfield (Treas.)	"Buckles" Buck
"Howdy" Blandin (Stewart)	"Eddie" Clark
"Cap" Gilman (Editor, Itasca Wood- tick)	"Fig" Fegraeus
"Pa" Eklund	"3H" Hyatt
"Blocka" Boettcher	"Lord" Peel
"Max Squerry" McCreey	"Ollie" Spaeth
"Doc" Sheffield	"Don" Nemec
"Gene" Erickson	"Ron" Erickson
"Shady" Shadduck	"Porkie" Berggren
"Squint the Baker" Jensen	"Hal" Halverson
"Injun Charlie" Racey	"Manager" Whitchurch

^aLumbermen's code—Kiln dried or knocked down.

We tried everything—even work.

This sums up the history of the six weeks spent by the Freshman Corporation of 1922 at Itasca Park.

Let simple straight-forward statistics rather than jest or bragging tell the story.

The Corporation—

Consumed 71½ dozen eggs.

Restrained 1,933,423 impulses to murder the purveyor of said eggs.

Expressed 871.009 opinions on the subject of eggs. Of these 23 were intended to be humorous and one, "Chicken on the half shell," has survived.

Spent 6 days, 23 hours and 57 minutes waiting at the mess shack door for the K. P. on duty to slam the saw.

Devoted a total of 35 hours to eating.

Slept a gross total of 9,480 hours, or an average of 5 hours per night per man.

Collected 2,800 woodticks, four hawks and 2 skunks.

Danced 11,364 miles.

Hiked 87 miles.

Endured the same four tunes by the same jazz orchestra 41,114 times.

Were bitten 8,129,384 times by mosquitoes.

Gave three dances for which admission was charged.

Entertained free at 18 dances.

Were chased away from Douglas Lodge 13 times.

Pulled off—

1 horseshoe tournament.

1 kittenball series.

½ tennis tournament.

1 burial of the quiz.

1 water tournament.

Erected one memorial, in front of the library, to itself and one in front of the bakery to the Noble Swedish Crew.

Ate one chow mein supper.

Published one weekly paper, every two weeks.

Caught 49 fish—and cleaned 17 of them.

Sent its jazz orchestra on one tour—from which, unfortunately, it returned.

Held eight meetings.

Broke all parliamentary rules.

Wore out two cuss words.

Collected \$30 per man for grub and refunded \$2.63 per man.

Held one get-together dinner during the fall quarter.

Was exposed to elementary dendrology, elementary mensuration, elementary silviculture and elementary botany without serious effects.

Sang "Old Man Squint, He Burned Out the Bakery" once (once??).

Casualties: One broken wrist and five home-made hair cuts.

From a compilation, combination and averaging of the foregoing statistics it should be possible to construct a graph which will answer the question "What is a forester and, if so, why?"

Among the lessons which succeeding corporations may draw from them are the following:

Do your sleeping in class during the spring quarter and start the Itasca grind with something to the good.

Take along an entomologist to cut short arguments like "s'neagle," "s'not—s'nowl" and "s'neither—s'nawk."

In forming "crews" include one man who will work—look what "Fig" did to Iky Cohen and the rest of the Noble Swedes.

Engage a language tutor, one competent in two tongues, English and profane.

Obtain a permit to carry along at least one gun, in case a future Doc Sheffield begins to "Feel like a ship on an ocean of joy."

Wear baseball masks when at ax practice. Consult McCreery and Ecklund.

Advise with Cactus Cal Everts before acquiring costumes to be worn around the lodge.

Stipulate that Dr. Rosendahl shall tell at least one anecdote for every flower he discovers.

Require members with tape worms to pay double for board.

Remember it pays to treat strangers kindly—consider Mr. Lee of China and the chow mein.

Start now figuring how to give the "quiz" a better funeral than the Corporation of 1922 did, even if it can't be done.

Insist on photographs and Bertillon measurements before investing in any assisted female immigrants from the Bemidji Normal.

Before committing any bailable felonies emulate Porky Bergren and get solid with the cook.

Don't get engaged to any of the lodge Cinderellas.

Give Prof. Cheyney a chance to tell his "Stick-Stuck" story. All he wants is just a chance, it's a good story and he likes to tell it.

Have the dials of your compasses redecorated with Roman numerals from one to twelve, then you can watch the clock and the line at the same time.

Provide an anchor before towing the diving dock three miles up the lake.

Don't fail to register at the N. W. corner of Sec. 37.

Try to be as good a sport as Whitchurch.

Get Prof. Wentling a set of hobbles, steel, with Yale locks.

Speculation in peddling ice cream, consult Clark; finance in dealing in candy, see Brookfield.

When you detect five or six fellows alternately looking at you and the lake, reform.

Don't snore in lectures, snooze silently.

Keep Prof. Allison away from the bathing dock until his work in the course is finished.

Keeping your shirt on will keep the sunburn off—ask Injun Charley Racey.

Eventually you will find out so you might as well know it now, that your Freshman summer at Itasca is the pleasantest feature of your courses.



1922 Freshman Corporation

Freshmen

STAINED SAPS AW AND AL*

On September 27th, thirty-five husky yearlings climbed clumsily up the steps of the Forestry building to begin a new era in life. They were green—they probably still are—but they attempted to assume an air of sophisticated indifference as they strutted past the assemblage of upper-classmen.

Because they had once passed through the same ordeal themselves, the upper-classmen endeavored to receive the men with open arms and to show them that the greatest spirit of friendship existed. The freshmen had heard much about hazing and were not to be fooled by this welcome. After safely passing over the first day, life became more endurable, the fear of getting paddled more obscure, and the attitude toward the upper-classmen more friendly.

This class, the largest ever to enter the Forestry College, possesses the pep and pride which has long been a prominent characteristic in the college. Already the men are beginning to show their abilities along the various lines. The five men who received places on the freshman football squad show they have the strength and skill to uphold the name which has been created by the Foresters. Men have also been placed on both the hockey and track squads. Other athletes have not as yet had an opportunity to show their worth. Likewise, much interest has been shown along literary and political lines.

In short, we believe that the 1922 freshman class has demonstrated by the combination of its talent and interest, that it is willing and able to contribute its part in making the Forestry College the greatest on the campus.

JOHN J. COFFEY. '26

DENDROLOGICAL OBSERVATIONS

Embryo Forester (seeing decorated Christmas tree): "Papa, does the tree grow that way?"

*Lumbermen's code—All lengths and all widths.

CLASS OF 1926

Bernard (Andy) Anderson, Dassel High School, Dassel, Minn.
 John (Johnnie) Battentine, Minneapolis Central High School,
 Minneapolis, Minn.
 Arthur (Art) Bode, Fairmont High School, Fairmont, Minn.
 Thomas (Bo) Bohenstingel, North High School, Minneapolis, Minn.
 Carl (Speed) Brahs, Henderson High School, Henderson, Minn.
 Henry (Henie) Brock, University High School, St. Paul, Minn.
 Perry (Big Boy) Brown, Minneapolis Central High School,
 Minneapolis, Minn.
 Kenneth (Kenne) Cheese, North High School, Minneapolis, Minn.
 Irvin (Toby) Chriss, North High School, Minneapolis, Minn.
 Donald (Don) Christenson, South High Shcool, Minneapolis, Minn.
 John (Java) Coffey, St. Paul Central High School, St. Paul, Minn.
 Lyle (Doc) Donovan, Chippewa Falls High School, Chippewa Falls,
 Wis.
 Loyd (Cutie) Erickson, North High School, Minneapolis, Minn.
 Hyman (Hy) Goldberg, St. Paul Central High School, St. Paul, Minn.
 William (Bill) Himebaugh, Excelsior High School, Hopkins, Minn.
 Ernest (Ernie) Hoffman, Lead High School, Lead, S. D.
 Ralph Holmberg, Cloquet High School, Cloquet, Minn.
 Harry Hyatt, Minneapolis, Minn.
 Harold (Hal) Kelsey, South High School, Minneapolis, Minn.
 Edward (Milly) Lanz, South High School, Minneapolis, Minn.
 Carl (Swede) Lidberg, Red Wing High School, Red Wing, Minn.
 Ralph (Humpie) Lindgren, Johnson High School, St. Paul, Minn.
 Mark (Mattie) Mathews, South High School, Minneapolis, Minn.
 Harry (Tubby) Nourse, Minneapolis Central High School,
 Minneapolis, Minn.
 Ralph (Ouch) Payne, North High School, Minneapolis, Minn.
 William (Bill) Peel, White Bear High School, White Bear, Minn.
 Harry Robinson, Minneapolis, Minn.
 John (Russ) Russeth, Minneapolis, Minn.
 Robert (Bob) Salisbury, Minneapolis, Minn.
 Homer (Curly) Sewell, East High School, Minneapolis, Minn.
 Clifford (Jeff) Simonton, Rochester High School, Minneapolis, Minn.
 Oliver (Olie) Spaeth, St. Paul Central High School, St. Paul, Minn.
 Herbert (Swannie) Swanbeck, South High School, Minneapolis, Minn.
 Kenneth (Kenny) Umbehocker, Princeton High School,
 Princeton, Minn.
 John (Johnnie) Virtue, St. Paul Central High School,
 St. Paul, Minn.
 George (Slats) Vliet, East High School, Minneapolis, Minn.
 Paul (Tiny) Watts, East High School, Minneapolis, Minn.



Patroling on Boundary Waters



Some Big Sticks

THE FORESTRY CLUB

To every Forester at the University of Minnesota there is an organization that means much to him. Perhaps it means even more to him when he has graduated. While at school his affairs are centered largely around it and he derives much of his recreation and not a small bit of his education through its various activities. When he graduates and leaves to enter the business world, his thoughts, as the years go by, continually return to the days in college and to his fellow club members. He remembers with satisfaction the pleasant hours spent with the fellows at the club house and perhaps longs just a little bit for those days to return again. The alumni have shown that the Forestry Club means much to them as each year a greater interest is evidenced among them. From all parts of the United States and even foreign countries, come letters of inquiry as to the progress of the club and the college.

Each year the club is growing in size and importance until now it has become one of the most influencing factors on the Agricultural Campus. The little gold peavey has come to mean something to outsiders as well as to the proud wearers of them.

In the recent University of Minnesota Stadium-Auditorium Drive results, we find some interesting facts concerning forestry spirit. The true criterion of a man, in the last analysis, is his ability to give; to give until it becomes a sacrifice for him. The Foresters of the University of Minnesota, many of them working their way through school, turned in gifts that surpassed those of any other college in the University! The Forester at Minnesota has come into his own and from now on his future is assured.

With such spirit the Forestry Club has grown through co-operation and brotherly interest, exemplified well by the ever increasing attendance at all functions under its auspices. The club house becomes more and more the meeting place for the men and they make of it a second home.

The future looks bright. Succeeding classes will find firmly established traditions upon which to build an ever stronger and better organization. As part of our ritual reads: "May it come to mean to you what it already means to us." Let those who are in college now feel secure in the belief that when they, too, are done, they will be able to look back with pride and satisfaction on the good old Forestry Club.

OTTO W. ANDERSON

THIS HAZING

Dean Freeman (somewhat peeved): "So you confess that this unfortunate young man was carried to the pond and drenched? Now what part did you take in this disgraceful affair?"

"Abe" Everts: "The right leg, sir."



The Forestry Club

OFFICERS OF THE FORESTRY CLUB

1923

OTTO W. ANDERSON
President—fall quarter

LOUIS J. LEFFLEMAN
President—winter quarter

ORCUTT W. FROST
Vice President

FLOYD H. TILDEN
Secretary

PHILLIP H. BRYAN
Treasurer

BOARD OF DIRECTORS

J. P. WENTLING J. H. ALLISON A. J. STREINZ
L. J. LEFFLEMAN E. E. PROBSTFIELD W. A. RITCHIE P. H. BRYAN

THE GOPHER PEAVEY STAFF

ORCUTT W. FROST
Editor-in-Chief

G. PROCTOR COOPER
Assistant Editor

CHARLES M. BROOKFIELD
Business Manager

RALPH M. NELSON
Alumni Editor

RICHARD DELANEY
Assistant Business Manager

CHARLES L. DOCKSTADER
Senior Representative

MAXON Y. PILLOW
Junior Representative

AMBROSE B. EVERETT
Sophomore Representative

JOHN J. COFFEY
Freshman Representative

LELAND L. DEFLOW
Faculty Representative

BOARD OF PUBLISHERS

O. W. ANDERSON

RALPH M. NELSON

L. L. DEFLOW

I. A. F. C. CONVENTION, 1922

By RALPH M. NELSON

Minnesota Representative

The sixth annual convention of the Intercollegiate Association of Forestry Clubs was held at the University of Syracuse, April 20, 21, and 22. Practically every Forestry Club in the United States and the club at Toronto, Canada, were represented either by delegates or by proxy. The Northeastern Retail Lumbermen's Association and the New York Section of the Society of American Foresters also had a convention at that time so there were many men present who were very prominent in forestry. We were fortunate in being able to hold several joint sessions with them.

The first morning was taken up by a business meeting, reports being given by the attending delegates from the various forest schools. In the afternoon we had business meetings and talks by prominent men. In the evening a smoker at the University Club was given. The second and third days were repetitions of the first except that luncheons, dinners, banquets, visits to plantations and pulp mills, and theatre parties were sandwiched in whenever possible. Even a few hours were spent in sleep. The smokers that were held every evening consisted of informal talks by the faculty and foresters in commercial work, and gave us an opportunity of meeting men that were doing practical work.

The thing that was emphasized by nearly every man that spoke during the convention was, "Preach Forestry." Our aim, that of obtaining as much good from our forest domain as is consistent with true conservation, can only be achieved by arousing public interest. This can be done if everyone preaches forestry, whenever possible, to the public at large who are disinterested for the most part only because they are unacquainted with existing conditions. If this be done, legislation remedying many of the present evils is sure to come. All were very enthusiastic about the future of forestry.

I was struck with the similarity of purpose exhibited by the students whom I was privileged to meet. All take an intense interest in anything pertaining to forestry, all are stimulated by a love for the outdoors, and all are imbued by the feeling that by united effort many things which have heretofore been unobtainable, may be achieved.

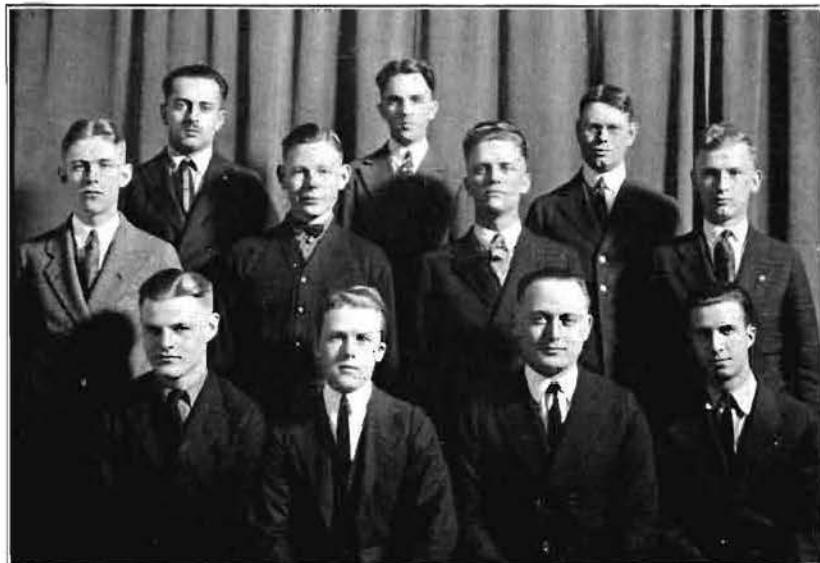
The Forestry Club at Syracuse deserves a great deal of praise for the excellent manner in which they conducted meetings and provided entertainment and accommodations for the visiting delegates. We all feel that such meetings are decidedly worth while for they establish a closer relationship between the various forest schools; the men from widely different parts of the country being enabled to exchange ideas with mutual benefit. My belief is that when men of a profession, activated by unselfish motives, form an organization for the purpose of furthering the interests of that profession, good results may be expected. Such an organization is the Intercollegiate Association of Forestry Clubs.

XI SIGMA PI

The Xi Sigma Pi fraternity was founded at the University of Washington in 1908. There are now chapters of the fraternity in the forest schools throughout the country. Xi Sigma Pi, composed entirely of foresters, is the oldest Honorary Forestry Society in the United States.

On March 25, 1920, Mr. I. V. Anderson of the Beta Chapter at Michigan installed the Delta Chapter at Minnesota. This was our beginning. After two years of activities the Delta Chapter has fulfilled the prediction of Walter H. Schmid, its charter Forester. The Chapter has filled "a big place" in the forestry activities at Minnesota.

The active chapter is placing in the Forestry Library a shield of proper design upon which will be placed each year the name of the Freshman Forester who has attained a high scholastic record, and who has shown practical ability, capacity for leadership, and promise of attainment.



R. Nelson Frost	Leffleman Fedreaus Hamilton	Dockstader Streinz	A. Nelson Probstfield
		D	Allison Youngers

PLANTING A TREE

What does he plant who plants a tree?
A scion full of potency;
He plants his faith, a prophecy
Of bloom, and fruitfulness to be;
He plants a shade where robins sing,
Where orioles their nestlings swing;
A Burning Bush—a miracle!
Who plants a tree—he doeth well!

What does he plant who plants a tree?
He makes a strong mast for the Sea;
He makes the earth productive, fair;
He helps the vines climb high in air,
And from their censers shed perfume
To sweeten Night, and bless high Noon.
Against the vandals who despoil
He sets his protest in the soil.

What does he plant who plants a tree?
An emblem of the Men to be;
Who lightly touch terrestrial clay,
But far above the earth, away
From sordid things and base,
Incarnate ideals for their race—
Who plants a tree, he doeth well—
Performs with GOD, a miracle!

From "The Forest Poetic."

In Memoriam



Reuel Everett Watts

June 16, 1898

Sept. 9, 1922



PART II

Alumni--Technical

- Greeting—L. J. Leffleman.....Page 34
- Our Vanishing Timber—Col.
W. B. GreeleyPage 35
- Future of Forestry in Minne-
sota—T. S. Hanson.....Page 37
- Itasca's Pussies—W. H.
KenedyPage 41
- The Balsam Budworm and
the Forester—S. A. Gra-
hamPage 42
- Removing the Guess Work
from Paper Making—S.
C. BraytonPage 47
- Bright Points in the Sum-
mer of 1918—L. N.
EricksonPage 49
- Advancement of Forestry
in Idaho—Charles D.
SimpsonPage 57
- Forest Fires in Minnesota
—W. T. CoxPage 55
- Looking Ahead—J. P.
WentlingPage 59
- Forestry AlumniPage 61

GREETING

UPON graduation there has been a tendency of the students of the past years to sever almost all connections with the Forestry College, the Forestry Club, and former classmates. Up to the present time there has been an excuse for this practise. A forester's work often takes him far from the fields of his earlier endeavors. He meets new faces, makes new friends, and completely changes his environment.

As you sit before the fire, either out in the "big sticks" or in your city home, do you ever think of the days at school, at Itasca Park, or at the Forestry Club? Do you often wonder what became of "Bill," "Ike," or the "Big Swede," and whether all of the "gang" are still on earth?

This issue of the Gopher Peavey, and especially the section devoted to alumni, we hope will answer many of your questions. All of us can understand that this first attempt at this new section is far from the ideal, but the will of the editors has been to instigate a phase of the Forestry annual which will grow greater and more serviceable with each issue. There has been included an alumni list with addresses and occupations corrected as near as possible to the present date. You may be surprised to learn of the locations of some of the bunch; maybe some are nearby so that you may renew old friendships.

We want you to look upon, not only the alumni section, but the whole edition as yours: just as we here at school look on it as ours. Not only do we want you to look on the annual as yours, but we also want you to feel that the Forestry Club is still an organization of yours. The clubhouse door is always open to the "old grads."

JACK LEFFELMAN.



OUR VANISHING TIMBER

By COL. W. B. GREELEY

Chief, U. S. Forest Service

THE situation as regards timber in 1923 is one that should challenge the best thought and effort of all who are interested in forestry, and especially of those who adopt it as a profession. Ranking in importance high above its purely technical side is the fact that unless we do something toward re-establishing growth on those areas we have cut so prodigally in the past, forestry as practiced on a scale which the economic needs of the country demand, will become a name.

This may seem a gloomy view to take. However, it is written on the wall, and unless we take up the cudgels and fight as the old Crusaders fought, earnestly and unselfishly for a cause that we know is right; it may very well come to pass.

This phase of the forestry problem is the one of most pressing importance today, and I choose it rather than some of the many other and various aspects which it presents.

The forests of New England and the Lake States are gone. Those of the south are being rapidly cut, and the lumbering industry is moving westward into the last big stands of virgin timber which we have. It does not need a prophet to say what the end shall be. We ourselves can see it. We can speak of the time, forty to sixty years hence, when these last big stands will, in fact, be gone.

We are faced with the necessity of getting our lumber in the years to come from Siberia, or South America, and to show what that may mean to each and every one of us, I need only tell you that our annual freight bill for lumber at present is a pretty sizable one. Because the biggest consumption of lumber is in the east, and the biggest production in the west, we must haul it on an average 485 miles, and in doing this must use two million freight cars yearly. For this we must pay our annual bill—\$750,000,000.

Canada furnishes us with one-third of our pulpwood for paper making. But Canada has recently placed an embargo on shipments to the United States of pulpwood from the Crown forests, and eventually, no doubt, she will extend it to private forests as well, thus shutting off a source of supply, adding to the drain on our own timber, and still further boosting prices.

We have millions of acres of denuded land that is best suited to the growing of timber. Three quarters of this area lies east of the Mississippi River and extends to the Atlantic Coast. In this same area we also find our greatest consumption of wood and its products. The problem is therefore clear. We must get this land to work producing a crop of timber. But timber cutting is not the only menace. Based on a five-year average, there have been 32,578 forest fires in the United States each year. They burn over seven and a half million acres and cause a yearly damage of seventeen and a quarter million dollars. It is this enemy that we must

combat with all our strength. The public must be roused to an attitude of mind where they will no more permit the setting of a fire to go unpunished, than they now permit unchastened the perpetration of numerous other outrages and nuisances that are banned.

It is the duty of everyone, but particularly of foresters, to inculcate this attitude where it is lacking. The forest problem of the United States, as I have said, is each year becoming clearer. Its main features are two; the rising timber costs due primarily to heavy transportation charges from more and more distant sources of supply, and the unproductive condition of immense areas of land not adapted to agriculture.

The 465 million acres of forest land of all sorts—timbered, cutover, and burnt—in the country today are ample to grow all the wood we need, both for our own consumption and for export—if we keep them at work growing trees. This we are by no means doing.

Stated briefly, the problem presented to you foresters today is: Keep down fires. Put idle forest land to work. It is simple of statement, but it will be difficult of accomplishment. It cannot be done by the Federal Government alone, nor the states alone. It needs, and must have, the support of the general public as well. They must be taught that fire is anathema, and to do this will demand the combined thought and energy of every one of us and every friend we have, or can make.

A WORD OF ENCOURAGEMENT

It may encourage you men who are still in school to know that my contact with lumber companies and wood working concerns convinces me that the opportunities for trained foresters in the lumber and wood using industries are rapidly increasing. It is no longer necessary as it was twelve years ago for the average forester to seek employment in the Forest Service. Many private organizations are seeking new blood and are finding that forestry trained men are superior to men picked up at random. All branches of the industry from the woods to the sales office need men who have the fundamental and technical training which our forest schools give.

DONALD R. BREWSTER, '10.

FUTURE OF FORESTRY IN MINNESOTA

By T. SCHANTZ HANSEN, '15

Assistant Superintendent, Cloquet Forest Experiment Station

MINNESOTA and Forests are synonymous. The mere mention of the name of our state conjures mental pictures of immense areas of stately pines, of vast stretches of spruce and cedar swamps, and of thousands of crystal clear lakes. Our state is by no means entirely covered by forests. We find within our borders areas of fertile prairies equal to, if not surpassing, the forested region. The forests have always been a striking feature, especially to the visitor. There are many other states with rich prairies, but few with a forest area such as we had originally.

It is unfortunate, but inevitable, that we must speak of our forests in the past tense. The forests gave rise to the first and at one time the largest industry in the state, the production of lumber. This industry unfortunately has long since passed its supremacy and it is rapidly decreasing in importance. It is the purpose of this paper to indicate what the future of the industry will be.

In the past the forests were a highly important factor in the development of the economic life of the state. They will be no less important in the future progress and development. It is only through the complete and proper utilization of all of our resources that we can keep our proper places in the industrial life of the nation. We can not develop and progress as we should if we allow ourselves to be handicapped by having within our borders millions of acres of non-productive land. It goes even deeper than any state problem. It is national. No nation has ever attained and retained a place of influence and power without having reached the highest possible economic development. So it behooves us to consider this problem of the use of lands cut over.

It was in 1821, that the soldiers of Fort Snelling established the first sawmill in Minnesota. The real development of the lumber industry, however, did not take place until after the Civil War. It was then the harvesting of the apparently inexhaustible supply of timber began. The extent of timbered area was not exactly known. No one gave any thought as to how long it would last. Economic conditions demanded the development of the lumber industry to the extent it did, and conditions—not individuals—are to blame for the rapid cutting away of our timber supply.

Standards of utilization changed considerably with the decrease in virgin timber, so the remaining stands were more closely utilized. Stumps are now cut low and logs are taken far into the top, even dead and down timber is being taken.

This closer utilization helps to prolong life of the industry, but it is not enough to entirely save it. The end of the lumber industry, as we

know it, is in sight. Most of the raw material has been removed, the area which it occupied has been burned over one or more times. Nothing has been done about it, no steps have been taken to save this industry, at one time the largest in the state. What, then, is to be the fate of this industry? In the answer to this question is contained an indication of the future of forestry within the state.

It would be easier to disregard this problem altogether. Its solution presents many difficulties and it is answered only in the use of the land cut over. Human progress was never accomplished by side stepping difficult problems.

Were the areas all of a tillable nature and were they needed at once for agriculture, we would have no problem. But much of the land involved is unfit for farming and only a small percentage of that fit for farming has been developed. The largest portion of these areas are considered waste areas. The assumption has been based on general observation. No intensive and systematic examination of the areas has ever been made. If they were not barren, the product which they produced would give an indication of the development and type of industry we could expect. A systematic survey of the cut-over lands of St. Louis County was undertaken. The following prophecy is based on conditions in that county, which is typical of the northeastern portion of the state.

It has been generally accepted that the bulk of the cut-over areas are waste land supporting nothing but brush. An intensive examination of three per cent of the area involved showed that there is only four per cent of the area barren. The remaining area is more or less covered with a stand of young growth. This young growth is of an entirely different character than the old stand. People are accustomed to looking for the same type of stand that originally occupied the area. If they could not see this, they considered the area barren. Our methods of cutting and our carelessness with fire have made it impossible for stands to reproduce themselves. We must look for these new stands. It is in the handling and using of these stands that forestry must find its problems. Originally the only stands considered as valuable were white and Norway pine. Most of this type has been removed. There remains in St. Louis County a net acreage of 1,306,000 acres uncut, out of a total net area of 3,765,000 acres. This uncut portion is largely in types other than Norway and white pine. This means that in all probability about 2½ million acres of Norway and white pine type have been converted to some other type.

The intensive survey showed further that 48 per cent of the cut-over area was coming in to hardwood stands, 24 per cent was coming into mixed stands containing less than 60 per cent conifers, and 11 per cent was coming into coniferous stands. The remaining portion of the area was covered by muskeg where no tree growth could be expected or by swamp or included in the 4 per cent barren. The following table gives an idea of the type of stand coming in on these areas. The area given in the table is the total acreage on which the species occurs. It does not take into consideration density and merely indicates the prevalence of any given species.

<i>Species</i>	<i>Hardwood Type</i>	<i>Mixed Type</i>	<i>Coniferous Type</i>
	Area on which found—acres	Area on which found—acres	Area on which found—acres
Birch	1,095,662	547,831	
Popple	1,095,662	547,831	
White Pine		168,957	49,840
Norway Pine		190,758	47,348
Jack Pine		218,009	144,537
Spruce—Black and White		166,308	92,204
Miscellaneous Conifers....		359,715	122,109

The most striking point of the table is the predominance of birch and popple over all other species. The next point, probably of most importance, is the comparatively small area coming back to Norway and white pine. There is less than 100,000 acres, or probably less than five per cent of the area originally covered by this type, reproducing itself.

Here, then, is the case as shown by conditions in St. Louis County. Most of the virgin stands have been removed. There are 2,359,000 acres of cut-over land, less than four per cent of this has been improved, leaving 96 per cent of this area to be considered. Less than four per cent of this area is barren, less than four per cent is coming back to the original stand. This area of four per cent coming back to the original stands presents that portion of the area which will support an industry like our present lumber industry. On this limited area will we find problems to solve similar to those we have today. But an area of less than four per cent of the original type can not support an industry with the magnitude of the present one. The mere fact that we have such an immense area of raw material so different in character coming in, will have a profound effect upon the industry.

The large sawmill of the present will be largely a thing of the past. We will find in their place, boxboard mills, wall board plants, excelsior plants, wood specialty plants, furniture factories, and others.

All of these plants are capable of using small sizes that can be produced upon a short rotation, meaning a more rapid turnover. It is a powerful argument for the protection of these stands now coming in because they will be of value and can be harvested in comparatively few years.

The future of forestry then lies in working out the problems of these hardwood and mixed stands. Methods of cutting, financial and other rotations, methods of reproducing stands naturally, thinning methods, and many others must be solved. The short rotation makes it easier to do these things, because the effects are seen in comparatively few years.

There will always be a demand for timber and these areas will produce some timber of such size that lumber can be sawn therefrom. But the stands that can be utilized in small sizes, yielding quick returns are the ones that will establish the practice of forestry within the state.

1923 GOPHER PEAVEY



Above the Sluiceway



An Idaho Mill

ITASCA'S PUSSIES

BY W. H. KENETY, '11

When I was at the Park, it was the custom to have religious services on Sundays in a sort of woodshed. A local sky pilot officiated part of the time, and other Sundays were often taken care of by some Twin City preacher who was spending his vacation at the Forest School.

One of these preachers was a wonderful orator, but seemed to the boys to be somewhat pompous and slightly affected. Whether because of his mannerisms or because of his too zealous efforts to make saints out of the boys I do not know, but some members of the class conceived the brilliant idea of testing his self control and fortitude of spirit.

The campus, as it was called, though at that time it was a wilderness of poison ivy, was the abode of a colony of skunks—in fact, it was alive with them. A few could generally be seen on the campus at any hour of the day, but in the dusk of the evening they all came out, often as many as six abreast could be seen going down the paths in squad formation, their tails over their backs, giving the same effect as the plumed hats of the "Black Hussars" on parade.

Experience had proved that the skunks had the right of way on all single tracks and anyone meeting them would always make a careful detour.

The preacher lived in a tent, as did almost everyone at the summer school, and at night he took the usual precautions to see that the edges and flaps of the tent were fastened tight.

One night, soon after someone had come off second best in an encounter with a skunk, a couple of fellows crawled up behind the preacher's tent with a cat and succeeded in pushing the cat under the flap without being heard, but they did not get very far away from the tent before the preacher began to talk to what he supposed was a skunk. In low but earnest tones he besought the Lord to condemn that skunk to regions where its fur would singe. The boys, who had dropped to the ground at the first sound of the preacher's voice, were compelled to stuff their shirt sleeves into their mouths in the struggle to keep their laughter from reaching the preacher's ears. Meanwhile, by slow maneuvering and with fervent admonitions to the pseudo skunk and all his relatives, the preacher succeeded in opening a flap of the tent and the cat bounded out into the darkness.



At Ensign Lake, Shantz Hansen slept on a bed made up of pearly everlasting flowers as the only available substitute for balsam and spruce. After being mauled by a lion, run over by a freight train and burned at the stake all night long he was led to declare that, "that may be a bed of flowers but it isn't any bed of roses."

THE BALSAM BUDWORM AND THE FORESTER

By S. A. GRAHAM, PH. D., '14

FORESTERS and timber operators in the New England States and eastern Canada have heard and seen much of the balsam budworm and its work during the last ten or fifteen years. Those in touch with the situation have seen a great plague of this insect sweep across Quebec, Maine, and New Brunswick to the Atlantic Coast; they have seen great forests of balsam fir and spruce fall before the attack of this horde of insects. They have seen the trees turn brown as if fire had run through the crowns, and then, when all the needles were gone, take on that black, funereal hue of the stripped conifer. Later they have watched these killed trees fall to the ground where they lay like a tangled mass of giant jackstraws. And now we are facing the same situation in Minnesota and Ontario.

At the present time it appears certain that at least seventy-five per cent of the balsam fir and a considerable proportion of the spruce in eastern United States and Canada will be destroyed before the budworm epidemic has run its course. It has been estimated that at the end of the outbreak 200,000,000 cords of standing pulpwood will have been destroyed in the infested regions. Let us try to visualize what this means. If this wood were cut and piled in cords end to end it would extend more than five times around the earth. Statistics show that in Quebec the pulpwood destroyed was sufficient to supply the North American continent with newsprint for a period of forty-five years. In the little province of New Brunswick alone, 12,000,000 cords of balsam fir and 1,500,000,000 board feet of spruce have been destroyed. The loss acre for acre in Minnesota and New Brunswick will probably be very nearly the same. The destruction of such vast amounts of wood as this cannot help but have a very decided effect upon the industries concerned, and the effects will continue to be felt until the next generation of trees have reached merchantable size.

Much of the effort directed toward the study of the budworm problem has had as its primary aim the checking of the present outbreak and the salvaging of as much of the dead material as possible. In other words it has dealt with present conditions in an effort to find a solution for an immediate emergency. As a result of this work, general recommendations for handling of budworm infested stands have been worked out by entomologists and others. These recommendations together with a brief account of the work of the budworm and associated secondary insects have been published in several localities. The Woodlands Section of the American Pulp and Paper Association has sent out to its members an account of the budworm situation, in which the importance of secondary insects in bringing about the death of trees surviving the original budworm infestation is emphasized. The recommendations contained therein

are based very largely upon the assumption that bark-beetle and fungi, following the budworm outbreak, are responsible for the death of an immense number of trees which would otherwise have recovered from the budworm injury. Doubtless these secondary pests are exceedingly important in some localities as indicated by the large number of red-topped trees in these regions, but it is also certain that there are extensive areas, particularly those where little or no recent logging has been carried on, where the secondary beetles are almost a negligible quantity.

These recommendations are therefor not applicable in all cases. It may be worth while, however, to state these recommendations here as an illustration of what is being advised for budworm control. They are as follows:

"1. Exploration. All limits should be explored and logging operations concentrated on the areas where the greatest amount of dead timber or red foliage trees are found (provided conditions are not already past the salvage stage). The percentage of red topped trees indicate the rate of dying."

(This applies to areas where the budworm has passed but where secondary pests are active.)

"2. Yearly Examinations. Yearly examinations should be made throughout the limits as long as red topped trees are in evidence. A report on conditions a year or two after the budworm passed means nothing at present.

"3. Control Operations. In greener areas, especially if not virgin forests, beetle operations should be conducted to remove and place in water all red foliage trees, or to utilize them before spring, so that the stands themselves can be held for future supplies.

"4. Logging on Budworm Areas. The cutting of budworm injured areas should be clean; i. e. it is not sufficient to cut only the trees that give most economical returns but it is essential to remove the inferior trees that will later die, both large defective and smaller trees.

b. The tops should be utilized to as small a diameter as possible.

c. The operations should be continuous from year to year into the adjacent green timber."

The startling fact about this set of recommendations is that nothing is said of either the checking of the present budworm attack or of the prevention of future outbreaks. It merely deals with one phase of the immediate situation. From this we must conclude that nothing can be done about budworm outbreak, either present or future, except to salvage as much material as possible and take steps to protect the surviving stands from the inroads of secondary insects.

As a matter of fact that is just about the situation at present but allow me to emphasize the fact that things look much more encouraging for the future development of budworm control. So far we have been dealing with the present emergency, but now we are beginning to look toward the future and the prevention of outbreaks.

Let us briefly consider here some of the habits and the life history of the balsam budworm and see if we do not find some guideposts which may lead to its control.

The budworm is the larvae of a moth. The adult is a frail grayish brown insect with a wing spread of about three quarters of an inch. The females deposit their clusters of eggs in July on the top parts of balsam fir and spruce, preferably the former. The larvae which soon hatch from these eggs retire to some sheltered nook, spin a light, silken hibernaculum about themselves and settle down for an all winter sleep.

In the spring, at the time of opening of the balsam fir buds these little worms awaken and make their way to a tender balsam tip. Those unfortunate enough to find only spruce are faced with the fact that the buds of the spruce do not open quite as soon as those of the balsam. This situation forces them to find a balsam or starve in their infancy as fresh, green food is a necessity for these tiny larvae. A few are able to work into the unopened spruce buds and there find sufficient sustenance to carry them over the hard days of early spring but most of them must find a balsam if they are to survive. During this period they are not forced to depend for locomotion upon their feeble legs but drop by a thread and are borne by supporting air currents from tree to tree. These first stage larvae may be carried considerable distances by the wind.

After they have found fresh shoots to their liking they settle down and feed, cutting the needles off at the base and webbing them together. These webbed needles soon turn brown and if the insects are abundant the tree at this time takes on a brownish appearance. Only about three weeks is required to complete the insect's larval development. Then transformation to the pupal stage takes place on the tree, usually among the webbed needles. In July the moths emerge from these pupae, thus completing the life cycle.

The budworm is a native insect and occurs throughout the entire range of its host trees. Under ordinary conditions it is practically innocuous as it occurs in so small numbers that the small amount of foliage consumed by the larvae is not enough to affect the health of the trees. In fact, the slight injury done would not be noticed at all by the casual observer. Periodically, however, this species of insect goes on the "rampage" and defoliates whole forests as it has done and is doing at the present time. Some combination of circumstances encourages the rapid reproduction of the budworm until they are present in such vast numbers that every green twig is covered with the larvae. For some reason the factors that normally limit the number of budworms are removed.

Doubtless the outbreaks of the budworm, like other insect outbreaks, are made possible by the action of very definite laws. If we knew these laws and understood the facts involved, we would be in an excellent position to prevent or control budworm epidemics. Unfortunately we do not understand thoroughly all the factors involved, nor can we be sure of the natural laws which are operating. We are still only in the primer class but we are making progress. Research work is opening the way

to rapid and far reaching results. The first steps are always the hardest and after the pioneer stage has been successfully passed, progress will be rapid. At present we are beginning to see possibilities and, although we cannot as yet explain the "why," we are getting nearer and nearer to a knowledge of the "how." The answer to our questions of control must be found in the woods. Such problems must be solved by theorizing at a desk.

In the control of the budworm, we have two angles of attack open to us. We can either check the outbreak after it gets started or we can prevent outbreaks. The first requires the application of very expensive mechanical means of control, the most obvious of which is dusting the forest with a poison. Although some fairly successful experiments have been carried on with airplane dusting for insect control there are several reasons why this method is doomed to failure where large areas are to be treated. Some of these are; the excessive cost per acre of materials and application, the limited supply of poisons, and the inaccessibility of much of the forest area even to airplanes. Thus we shall probably be forced to turn to preventive measures which are far more satisfactory and cheaper in the long run.

Studies of the activities of the budworm in stands of different compositions, leads us to believe that the composition of the stand plays a very important part in determining the seriousness of a budworm epidemic. In stands growing under practically the same site conditions we find great variations in the amount of injury resulting from the budworm attack. Generally speaking, the higher the proportion of balsam in the stand the greater the budworm injury. In pure stands of balsam fir the loss usually approaches one hundred per cent whereas in mixed stands of spruce, balsam and birch, for instance, the injury may be as low as fifty per cent or less. Pure stands of spruce are practically exempt from injury. This condition would seem to indicate that the balsam fir plays a very important part in a budworm attack. The reason for this is found, in part, in the synchronization of the emergence of the budworm larvae with the bursting of the balsam buds in the spring. The factor of food is therefore very important in helping to determine the budworm's rate of breeding. In the pure stands of spruce a comparatively small number of larvae are able to find food during the days between their emergence and the bursting of the spruce buds. In the mixed stand consisting of balsam, spruce and hardwoods, the chance that the larvae may lose contact with their food plant is increased in proportion to the number of other trees in mixture. In pure stands of balsam, however, every tree provides suitable food and here food conditions are most favorable. Here, also, as has been previously stated, the greatest damage is done. Thus the evidence indicates strongly that the availability of food is an important factor.

It is quite obvious that other things must also be taken into consideration, such as the effect of parasites and predaceous forms in holding the budworm in check; the effect of climatic conditions such as late frosts or heavy storms. There seems to be little doubt that parasites are a much more effective control when food conditions are not too favorable for the

budworm, as under favorable food conditions the insect increases so rapidly that the parasites soon cease for the time being to be much of a factor. Birds also play an important part in budworm control, but here we have a factor which is most effective in the places where it is apparently least needed. In mixed stands where injury from the budworm is least the birds are most abundant. This condition is doubtless due to the greater variety of bird food found in mixed stands.

All the evidence which is available points toward the fact that mixed stands are much less susceptible to budworm attack than pure stands of balsam fir. Therefore, the control of future outbreaks of the budworm appears to be a possibility provided we can regulate the logging operations in such a way as to develop mixed stands. This is not an easy thing to do but more difficult things have been accomplished in the past. Unless we wish to face repetitions of the present outbreak, foresters and entomologists must join forces and work together for the common end—budworm control. The entomologist must determine the proportion that is safe in a stand, the influence of parasites and predaceous forms, and he will probably have to become more or less of a sylviculturist in order to determine how the desired mixture may be maintained. The forester must at least co-operate in the sylvicultural phases of the work and must take most of the responsibility of regulating and carrying out the necessary operations. Let's get together!

NOTES OF INTEREST FROM OLD-TIMERS

Am still at my old stand at Okanogan but the Okanogan Forest has now been combined with the Chelan and is now all Chelan National Forest ($2\frac{1}{4}$ million acres). I have been working most of the winter revising and combining the extensive reconnaissance of the whole forest and it will take me until spring to complete the work. Am getting along nicely and like my work more as time goes on.

LEO A. ISAAC, '20.

I was with the U. S. Forest Service from the time that I graduated until 1917; entered Officers' Training Camp at that time, and have been in the Air Service ever since; at first as an officer and later as a civilian. The manufacture of wooden parts was, in war time a great industry; it is, perhaps, of somewhat less importance now, not only because fewer airplanes are being built, but because aluminum and steel parts are taking the place of wood to some extent. However, there is nothing like wood; and it is scarcely possible that any metal can ever take the place of spruce, white ash, or yellow birch in airplane construction.

WALTER M. MOORE, '09.

REMOVING THE GUESS WORK FROM PAPER MAKING

By S. C. BRAYTON, '20

Chemist, Consolidated Water Power and Paper Co.

Technical control has been defined as the application of scientific knowledge to the regulation and improvement of manufacturing processes, or, in simpler language, the removal of guess work.

The place of the technically trained man in paper mill control work is an important one, if he be of the right type. It takes real scientific ability to set up a scheme of control, but, when once in operation, the actual routine can be left to non-technical men. It is only in the creative work that the technical man is of any especial value. In a paper mill the control methods developed must be simple, expedient, and dependable. To assure this a thorough working knowledge of fundamental principles of Forestry, Chemistry, and Engineering is important, while the ability to see the application of simple principles is absolutely necessary.

A few illustrations of the type of things which must be controlled in each department of a paper mill may be interesting. Conditions peculiar to a particular mill, such as grades of paper, water power supply, etc., to a great degree determine which problems require closest control. The importance of a particular problem would also determine the refinement of the methods applicable to its control.

In the purchase of timber or in logging operations certain principles of forestry can often be applied.

In the mill wood yard the storage of wood should be controlled for the purpose of eliminating conditions favorable to rot or insect attack; proper seasoning should be provided for and the yard should be arranged to make the economical handling of wood possible. A little example of how fundamental principles can be applied in this respect may be cited. It is a common practice in many mills to pile green spruce on the ice in the winter. When the ice goes out in the spring the pile is half submerged. The pitch in the green wood which is submerged remains unchanged and causes trouble on the paper machines. Also favorable conditions for rot are created at the water line.

In the wood room it may be desirable to control the size of chips sent to the chemical mill, the cleanliness of the chips, the percentage of culled wood, the moisture content of the refuse sent to the boilers, and other factors depending upon local conditions.

In the sulphite mill we find such problems as the chemical composition of lime, moisture in sulphur, accuracy of test solutions, ash content of pulp, bleach consumption, strength, dirt, screen rejections, moisture content of sheet pulp, and others of a like nature.

In the ground wood mill, the quality of the stock produced, the horsepower consumption per ton, the cleanliness of the pulp, the pitch content, the moisture content of sheet pulp, the rot of storage pulp, and the losses due to solids in white water are exceedingly important factors.

It is very important that the paper machines be furnished stock of uniform density and quality, that the wet presses remove the water uniformly across the sheet, that the sheet enters the dryers with as low moisture content as possible, that sufficient moisture be retained in the finished paper and that the sheet be of the right weight, strength, color, finish, and cleanliness. These and countless other things must be controlled in connection with the actual paper making process.

The steam plant of a paper mill offers many control problems of its own: the heating value of the coal used, the unburned fuel in the ash, flue-gas analysis, efficiency of stokers, and economizers and other similar things.

In the sizing, coloring, loading, etc., of many grades of papers, individual problems arise for local conditions. Steam distribution and economical use thereof furnishes a special field.

During the past few years there has been a rapid increase in application of control, and is significant of the most remarkable industrial changes any industry has known. In our company I have seen costs in some departments nearly cut in two in the past two years: horsepower consumption reduced ten per cent in the production of the same quality of ground wood, and stock losses in white water reduced ninety per cent. These examples simply testify what can be done. So far, with the possible exception of a few companies, the paper industry has but scratched the surface.

PROSPECTIN'

Up the mountin' and thro' the burn
We climbed, an' 'mongst the brush and fern,
An ole man druve his maddox home,
An' slapped a tree in the gapin' loam.
"Mornin', father, what's the game?"
"Plantin' trees," the answer came.
"You don't 'spect to live to see
The standin' timber, do ye, say?"
He looked, reflectin' down the hill;
"Wal, no, but, thunder, some un will!"

J. R. SIMMONS.

A FEW BRIGHT POINTS IN THE SUMMER OF 1918 AT ITASCA

By L. N. ERICKSON, '21

Certain events usually stand out as the result of a summer spent under such ideal circumstances as those at Itasca. Some border on the humorous, some on the pathetic side, and others appear later as lost opportunities.

Harry Brannigan was, as always, ready with some story which would surpass any invented by the joint efforts of a class, no matter how illustrious that class. One day in the nursery after the different members of the class, and J. P., had done their best, Harry began discoursing on the early days at Itasca when the winters were especially severe. It seems that hay was scarce and finally the supply was completely exhausted. Harry, in an effort to keep one of the horses alive, resorted to jack pine as a ration, feeding the horse some of the tender, succulent branches. Some time later he noticed lumps appearing on the outside of the horse's body, especially along the ribs. It worried him, and as the growth seemed soft and yielding, he finally pricked one open. As he put it, "I tell you fellows, it's a fact, that horse just dripped pitch, and I collected about two gallons that winter."

Most all junior classes at the Park have assisted, more or less, in taking a drive of logs out of the lake. A boom had blown into shore just below Faculty Row and of course the entire class was out running logs, though it may be admitted at this late date that most of the time was spent climbing out of the water. One of the class, Paul "Papa" Palmer, was headed back to shore to get dried out. He stopped about six feet from shore and stood with one foot on each of two logs which lay in about three feet of water. The logs, of course, began to float away from each other, and "Papa" paralyzed in both legs, also spread and settled, until he finally sat on the bottom up to his neck in the icy lake.

The thought of the camping trip, which all junior classes take, usually brings up some good or bad points. While in camp at Cass Lake to study reproduction on Star Island and the Minnesota National Forest, several of the class weakened and attended a dance in town. They were, of course, all dressed up in the extra handkerchief which one fastidious member of the crew had brought along. A couple of the fellows, for unknown reasons, didn't return to camp immediately after the dance. In the morning J. P., who still maintains that he spent the night rolling on three jack pine cones, sat up, sniffed a couple of times, and asked; "Which of you fellows uses talcum powder?"

Limited space permits bare mention of other incidents, as for example, the time when one of the fellows, who had taken Shorty Roe out fishing, came back almost heart broken because he had had a chance to tip Shorty in the lake when he, Shorty, had stood up in the front of the canoe to "study the situation." The fact that they were way down in the west arm

1923 GOPHER PEAVEY

and rather far from shore was all that stood in the way of giving Shorty a bath, impromptu.

The crowning achievement of the summer was pulled off by the one true forester of the crowd who was so agile and accomplished in the art of self defense that he went into the dark swamp at the lower end of the west arm (where Racemosa was found), fought seventeen rounds with a giant skunk lurking there and re-entered polite society a few hours later without giving cause for the least offense to the most delicate of olfactory organs.



Chuck time! Itasca

ADVANCEMENT OF FORESTRY IN IDAHO

BY CHARLES D. SIMPSON, '13

Assistant District Forester

IN THE Intermountain District all of us are particularly enthusiastic just at this time about the progress which the Forestry movement is making in Idaho, and particularly about the proposed Forestry Bill which we are very hopeful, almost confident, will become law. This will be the third attempt which has been made in Idaho to secure the passage of a real Forestry bill which would put Idaho up along with other states which have taken the lead in the practice of Forestry. Previously, however, the backers of the proposed bills were largely timber men who were already making an effort to protect the timber lands, and especially their merchantable timber; but who found it necessary to protect the other fellow's timber while looking out for their own. The larger number of smaller, less progressive timber land owners were not yet converted to the necessity of better forestry laws. This time, however, the people of the whole state, irrespective of their calling, have taken an interest in the movement. Both the large and small timber land owners, members of the wood using industries, farmers from the irrigation projects, sheep men, cattle men, business men, recreationists, state officials and, in fact, all classes of people are showing a real interest in the movement. Surely Idaho has as great a need for better forestry laws and the practice of forestry as most any other state in the Union.

In general, the state is divided into two main distinctive regions; one, the mountainous timber land type of central and northern Idaho, and secondly, the vast semi-arid region of southern Idaho which is being developed by means of irrigation. In 1920 there were 25,283 irrigated farms in Idaho, with a total irrigated area of 2,488,806 acres. There are in the state 3,092 separate irrigation enterprises. The largest block of irrigated land in the United States is found along the Snake River in southern Idaho.

It is true that a large per cent of forest land is within National Forests. Thirty-five per cent of the land surface of the state is included within the boundaries of National Forests, the acreage of land thus controlled by the federal government being 20,130,147 acres. However, the real timber values are distributed on a much different basis. It is estimated that the timber on the National Forests of Idaho amounts to 51,472 millions of board feet, while the privately owned timber in Idaho is estimated at 25,117 millions of board feet. It is estimated that the value of National Forest timber equals \$147,000,000.00; while the value of private and state timber equals \$111,000,000.00.

The forest industry of Idaho employs two-thirds of the state's industrial population. It produces one-half of the state's manufactured products. It pays one-quarter of all taxes. It ranks first in employment of

wage earners, second in community dependence upon its products, and third in value of its products.

Considering the importance of this industry and the conditions which have developed in older, more accessible and more thickly populated timber regions, it is little wonder that the people of the state should awaken to the situation before it is too late.

At the present time we have in Idaho what is known as the Fallon Fire Law. The law itself has several good points, but almost no machinery was provided for putting the law into effect. It provides for fire districts and fire wardens to be established and appointed at the request of the timber owners themselves. It provides for burning of brush and waste, and requires the securing of a permit to start fires during the period from June 1 to October 1. It requires railroads to use spark arresters on their engines, and requires certain fire precautions on railroad rights-of-way. However, there was no state agency provided for the enforcement of the law and its use has consisted almost entirely by the Forest Service requesting the creation of fire districts which include National Forest areas, and fringes a mile to two miles in width around the forest boundaries. Forest officers have themselves been made the State Fire Wardens.

In addition to this, the Federal Government has provided a varying allotment (approximately \$17,500.00) under the Federal Weeks Law, in co-operation with the state for the protection of areas on the headwaters of navigable streams. Six timber protective associations have been organized voluntarily, and work in co-operation with the State Land Board and the Forest officers, in the protection of private and state lands. These associations provide more or less adequate protection to 3,646,367 acres; although in this amount there are 1,508,812 acres of privately owned timber lands riding free. In addition, approximately three-fourths of a million acres of timber land outside of the areas cared for by the protective associations are entirely without protection.

The proposed Forestry bill would improve the conditions very materially. The bill as it now stands, provides for the following:

1. A State Forestry Board.

This Board would be made up of 12 members, as follows: Governor, Attorney General, Secretary of State, Auditor, State Superintendent of Public Instruction, State Land Commissioner, Dean of the School of Forestry, University of Idaho, and five citizens of the state appointed by the governor; one representative to be furnished by each of the following: Northern Timber Protective Association, Southern Timber Protective Association, one irrigation farmer representing the Idaho Reclamation Association, one member representing the Idaho Wool Growers Association and the Idaho Cattle and Horse Growers Association combined, and one representative from the United States Forest Service.

2. A paid State Forester.

3. Fire districts established by the State Forester.

1923 GOPHER PEAVEY

4. A requirement that all timber land owners furnish protection from fire.

5. A requirement for the disposal of all slash.

As far as possible this is to be covered in the law and the minor details and application to be left to the State Forester.

6. A requirement that specific precautions against setting of fires by locomotives be taken.

7. A closed season during which burning permits will be required.

8. A clear definition of the terms "Timber Land," "Forest Land" and other terms used in the bill.

9. A provision for penalties for violations of various sections of the act.

If such a bill can be enacted into law, and the chances for success seem very bright, a long step forward will have been made in the Forestry work in Idaho. The attention of the people has been drawn to its need more and more during the past two years and the Forestry schools and Foresters throughout the country have been of great assistance in bringing this about.

Other signs point to further development in Forestry and timber activities. For example, the Oregon Short Line, a part of the Union Pacific system, has constructed a creosoting plant at Pocatello, Idaho, and is now using Lodgepole ties cut from national forest lands in Idaho and treated at their plant. Repeated rumors have gone out about a pulp and paper plant at Idaho Falls, Idaho, while operators from older sections of the country are investigating the possibility of developing operations in the state. The state itself has just approved a land exchange with the federal government, consolidating the state holdings, and is now working out a plan of management for these state tracts. They are asking assistance of the Forest Service and other states in working out the best method of state administration.

Altogether, we feel very optimistic about the development in the state.



The chief got his courses mixed up the other day. He told a "General Forestry" joke in a "Logging" class.

RESOLUTIONS OF A RANGER

Were resolutions made to keep, were schedules followed through,
Were Working Plans not modified each hundred years or two.
It might be kind of serious-like to so rashly turn 'em loose
On my unspectin' District, in numbers so profuse.
But seein' as how the poet saith, that resolves are used below
To pave their trails and highways with, and if what he says is so,
It looks to me both logical, and thoughtful, and discreet,
That the more of 'em that I turn loose, the less I'll burn my feet!
So here's my crop for New Year's day, and brother Ranger mine:
I know my sentiments agree quite more or less with thine,
So take these resolutions, which I recommend for you
To keep, and never break them, till it's necessary to.

1. I will love mine enemies. Yea, though their goats abide in my pasture, though they tell the Super I be a sonofagun, I will love them always.
2. I will obey mine hydrographer; before breakfast will I read his gauges; for him will I walk in the waters; and for him mightily will I labor, and chop the ice from the face of the deep.
3. I will collect all the weeds on my district, and cherish them in mine Herbar-i-um, that their ways shall be known of men, and their Latin names and the length thereof.
4. I will shun the Evil One, the Miscellaneous Executive Duties; yea, these will I shun.
5. I will make Promise Cards for all things that are due on sea or land, and the date thereof.
6. I will blaze not from horseback, that the heart of the Boss may be gladdened, that his heart may rejoice in my district.
7. I will count all the cones of the trees, and the full measure thereof will I report as the Seed Crop. Yea, though the D. F. command me to collect an thousand pounds, and mine hair be made gray and full of pitch, so will I report.
8. In the month of Fires I will drape my cayuse with shovels; with rakes of steel and pickaxes of iron shall my mule be laden, and I will dwell in mine lookout many days.
9. I will diligently survey mine June 11's, nor will I list where groweth the pine tree. I will recommend him not for listing, though my survey twinkle as the stars, though it be shapen like the pancakes of an Tenderfoot, verily I will recommend him not.
10. I will honor the Super all the days of my life, and the Working Plan forever and ever.

ALDO LEOPOLD

FOREST FIRES IN MINNESOTA

By W. T. Cox, '06

State Forester of Minnesota

MANY strange ideas are prevalent regarding the character of forest fires. This is to be expected, as fires differ in different kinds of timber country. It is natural, too, that such misunderstanding prevails because of the wild exaggerations appearing from time to time in the newspapers.

Some people will be surprised to learn that forest fires do not travel at the great rate generally credited to them. Seldom do they exceed two miles an hour, and four miles an hour is almost unheard of. Furthermore, most fires are easy to fight and extinguish, usually not becoming serious unless left to burn for several days. For every raging forest fire, such as the newspapers picture, there are hundreds of smouldering, creeping and running fires that are extinguished by the rangers and their crews. No matter how dangerous a fire may be, it can be fought with more or less success by men who know how to fight fire. Far in advance of it, lines can be prepared to pull it down, and fighting crews should always be maintained on the flanks to prevent the fire spreading.

It will doubtless be of interest to many people to read an account of the work done on one fire. There is no such thing as an average or typical fire in the woods, for no two are alike. On August 10th a lookout watchman sent word to Ranger Clarke that smoke was "fogging up," and that it was serious without a doubt. The ranger immediately phoned the nearest reliable settler to the fire and told him to take three of his neighbors and go to the smoke to see what could be done. Word was then sent to Patrolman Johnson who had been working several days on a bog fire with a small power pump. He was instructed to go to the new fire, which was in a bad locality. He left a man in charge of the pump crew to keep the time of the few men, complete the job they had nearly finished, and call the ranger for further orders.

In the meantime the settler, with the only other man he could get, had hiked five miles over a tote-road and found a fire that covered about ten acres and was burning briskly south of an old tote-road that was badly grown up to brush and small pines. The thing to do was to brush out this opening and try to keep the fire from crossing. Their only tools were an axe and a shovel, but with these a start was made. The axeman went ahead cutting out the brush and throwing it aside, while the other, working with a shovel, made a shallow trench, throwing the dirt on the side toward the fire. As the flames crept up to the trench both men seized bunches of green boughs and beat them back. The heat was intense and the smoke stifling. The men could hardly see or breathe, but for two long hours they fought stubbornly and with partial success, keeping the

fire from crossing their line on the main front. It did creep across the road in the swamp beyond where they had been able to brush out and watch. So when Patrolman Johnson arrived with fourteen men, a good supply of tools, tents, sprayers, blankets and "grub," the fire consisted of about twelve acres of hot ashes, burning stumps and down timber, smouldering rotten logs, and a sixty-rod strip of active fire eating its way along the edge of the swamp along the old road.

Johnson posted two men to keep sparks blowing across the road from starting any new fires. Two more men were told to pitch camp back by a small stream. The others, under the patrolman, went after the strip of fire that was traveling north in balsam and dead birch. The roar and crackling of the fire could be heard a long way off. A place was selected twenty to thirty rods ahead of the fire where the little crew started cutting, brushing and digging vigorously to prepare a line of defense. Patrolman Johnson, while this was being done, went around the fire area to find out, if possible, how the fire started. Upon his return to the crew he found the trench completed and two men carefully backfiring while the others followed in readiness to pounce on any threatening feature of the backfiring itself.

Soon the backfiring was finished. The wind, up to this time, had not been strong. It was now mid-afternoon and the sun was intensely hot. All the men were wringing wet and hungry, for they had not taken time to eat dinner. Suddenly someone burst through the brush with a box in his arms, shouting "come and get it." With him appeared another man carrying a steaming kettle of coffee. Mopping their heads and wiping ashes and cinders from their eyes, the men were soon sprawled out gulping down thick sandwiches and scalding coffee.

It seemed that they had the fire beaten. Some of the men wanted to go home, but the patrolman, watching the hazy sky, shook his head. "There's going to be a stiff wind by and by, so we'd all better stick around," he said. He then gave instructions to extinguish the fires in the old stumps along the edge, and to cut out all the old snags likely to throw sparks across the road. Within an hour, before half of the burning snags were down, the wind had risen and sparks, glowing punk and blazing bark were blowing from the tops of tall, dead birches.

One man was now sent for more help. It looked like a long fight ahead. "Spot fires" were starting across the hills to the north where the sparks were sifting down through the trees, and a lively battle continued that evening and through the night. Toward morning, however, the wind died down and the fire became more manageable. Eleven men from another settlement drove in. They quickly finished the last trace of the highland spot fires and relieved the other men so that they might get some rest.

There now remained only one bad feature. Several spot fires had started in the peat soil of a tamarack swamp. These, during the night, had traveled little, but had eaten deeply into the peat, and the tall tamarack

trees were already toppling over. Days might be required to dig out these small fires. To prevent their spreading to the highland, as they might during the heat of the day, the crews were put to work clearing and burning a firebreak around the swamp. The rest of the crew was taken back to the settlement. The patrolman had scarcely reached his headquarters when the ranger drove up in his Ford with a queer looking piece of machinery in the back of the car that immediately attracted Johnson's attention.

"What kind of an infernal machine you got there?" said he.

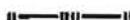
"That's one of our new gasoline jack snipes."

"Well, I know right where to try it and see if it is any good," said Johnson.

Back to the fire they went, hauling the little power pump and five hundred feet of hose, and that very evening the machine was purring and sputtering. Water was obtained from a hole dug in the swamp and the men were delighted at the effectiveness of the "snipe bill nozzle" which could easily be forced down to inject water right where the fire was eating its way through the peat. That night and the next afternoon sufficed to finish these bog fires, although one man remained two days longer to watch for smoke.

This experience with one forest fire will give some idea of what the rangers are up against in the fire protection work of Minnesota. Hundreds of other fights might be described, for the rangers go after every fire that starts, whether it is a smouldering patch of peat only a yard across, or a wide belt of flame sweeping the forest and threatening whole communities.

The rangers often do heroic things, acts which in the army would bring decorations. But the forest officers are quite content to modestly perform their sometimes hazardous duties in saving life and property back in the woods, on the edge of the wilderness.



Possibly all the points of value of our forests have not occurred to us Foresters. We owe a shining light in the "Ag" college, who assured his prof that forests were of value because they made a home for wood-peckers, for one of the latest arguments for forestry.

1923 GOPHER PEAVEY



Steam Jammer



A Boomful on Cass Lake

LOOKING AHEAD

By J. P. WENTLING

Professor of Forestry, U. of M.

"This work is so much like the last course I took that I am writing this to tell you about it. As soon as I got into this place and started my investigative work, I felt that I knew what I was doing." The above is quoted from a letter written by a former Minnesota forestry student, while doing research work in forest products in an eastern industrial center. While in college he specialized in forest products and after graduation took up investigative work. Another student states that his college laboratory work in this same subject yielded him 85 out of 100 per cent in a classified rating. Others say that their courses in forest products have proven to be the most immediately helpful, and practical, of any of their forestry subjects. This situation is not due to any secret or special process of instruction, nor to the individuality of any instructor, but to the fact that the subject is timely, is of immediate interest, and is applicable to the widely variable wood using industries of the country. In addition the facilities and opportunities at Minnesota for pursuing studies of this kind are not equalled by any school of forestry in this country.

Well organized and well articulated curricula in forest products are, in this country, still in the making. Well balanced courses must not only be supplied with completely equipped laboratories for thoroughly studying and investigating wood from all angles, but students must have free access to large wood using industrial centers where the use of wood in all its forms can be studied first hand. It is this kind of a combination that equips a student so that he is an industrial asset instead of a liability.

The field of forest utilization has, with all its varied products, been barely touched by the trained investigator. Many operators are running just as they did twenty years ago, with no better understanding of wood and its properties. Forestry study and training in this country has been concerned largely with the great field of silviculture. Wood utilization was considered as almost outside the subject and was given very little or no attention. We still had our great uncut forests and there was no apparent need for carefully and wisely using the wood. The utilization of the wood from second growth forests was not thought of. The beginning of the study of wood and its properties was necessarily begun and carried on by governmental agencies. The working staff consisted of mechanical engineers with no training in forestry whatsoever. There was no recognized inter-relationship between timber production and timber utilization. The field of forestry was occupied, on the one hand, by men trained only in the science and art of silviculture, and on the other hand, by engineers skilled in mechanics with "no man's land" between the two groups. The longer and the more intensively these two bodies

of men labored in their respective fields, the closer they came together, and the clearer it became that the well rounded forester was the one who was well trained in forest production and forest utilization. The manufacturer of wood products was slow to see, and many do not yet see, that the man trained in the art of using wood may be a valuable man for him to employ.

The various lines of specialization in the field of timber production are too well known to be mentioned here. It is not so well known that the field of forest products opens just as many if not more lines of specialization. The proper combination of studies fills in the gap between forest production and forest utilization, and provides a thorough knowledge of forest products, and the relationship of these products to, and their reaction on the forest.

Regardless of whether the student, after graduation, puts on over-alls and joins a gang of laborers in the yard handling rough lumber of all kinds, as the beginning of his experience as an employee of a wood using industry, whether he goes directly into some field of research in forest products, or whether he mingles with business men and rubs elbows with competitors in his efforts to sell wood products, he cannot be too well grounded in, or know too much of the nature of the raw material, or of the product that he is handling. He should not only know something about the qualities and properties of the material, but also the region in, and conditions under which it was produced. He needs to know the history of his product, beginning with the development of the trees in the forest, through all the processes of reduction until it reaches the finished form.

Wood utilization is becoming more intensive and varied with the passing of our native timber crops, and the consequent exploiting of the second growth. New industries are being established, closer and more complete utilization is carried on, and more and more the product is being anticipated while the material is still growing in the forest. In the not distant future, our second growth crops will be grown to order and for the yielding of a definite product. A beginning has already been made. The future of the wood using industries of the secondary class in the regions over which the big lumbering operations have passed, depends on close and careful and wise use of the second growth. These industries can no longer go to the big mills for their raw material but must go directly to the forest and take stumps. Adjustment to this condition is not readily made by a secondary industry. The problem of converting and preparing for use, this direct stumping brings up many problems that call for careful study with a full knowledge of wood.

The student of forestry, who is looking forward to the time when he can be actively engaged in the conversion of wood into useful products, can find no more timely courses than those that give a thorough acquaintance with wood, coupled with some knowledge of the various products into which wood of all kinds is manufactured. The field is just opening. The successful handling of woods heretofore unused, the cutting,

1923 GOPHER PEAVEY

seasoning and manufacturing of second growth woods directly from the stump, calls for a technical knowledge of wood and its properties that is not possessed by the average wood worker of today. The student with "vision" will find that he has not made a mistake if he thoughtfully and seriously prepares himself in this, his chosen field, when he learns that by looking ahead he is not only producing timber and products, but timber for products.

FORESTRY ALUMNI

1899

Chapman, Herman H. Professor of Forest Management, Yale University, New Haven, Conn.

1903

Erickson, Martin L. Oil Producing Dept., Fullerton Oil Co., Fullerton, Cal.

1905

Cuzner, Harold. Professor of Dendrology, University of the Philippines, Los Banos, Laguna, P. I.

1906

Cox, Wm. T. Minnesota State Forester, St. Paul, Minn.
Detwiler, S. B. Bureau of Plant Industry, U. S. Dept. of Agr., Washington, D. C.
Kockwell, Frank L. Extension Dept., University of Idaho, Boise, Idaho.
Tierney, Dillon P. Timber Section, Bureau of Internal Revenue, Dept. of Interior, Washington, D. C.

1907

Canavarro, George deS. Smithsonian Institute, Washington, D. C.

1909

Moore, Walter M. U. S. Air Service, Fairfield Air Intermediate Depot, Fairfield, Ohio.

Orr, George R. Forest Supervisor, Plumas National Forest, Quincy, Cal.

1910

Baker, Norman M. C. A. Smith Lumber Co., 964 Rose Ave., Piedmont, Cal.
Benson, Arnold O. Forest Products Laboratory, Madison, Wis.
Berry, James B. County Vocational Supervisor, Pa., Dept. of Public Instruction, Meadville, Pa.
Brewster Donald R. Consulting Specialist in Wood Seasoning, 28 Blymer Bldg., 511 Main St., Cincinnati, Ohio.
Jacobson, Norman G. Forest Engineer, 630 Lumbermen's Bldg., Portland, Ore.
Krauch, Herman. Forest Examiner, Albuquerque, New Mexico.
Lewis, Charles, L. Jr. Badger Cranberry Co., Beaver Brook, Wis.
Underwood, Clarence L. Orchard Manager, Portland Land Co., Hood River, Ore.
Derring, Robert. Assistant District Forester, Ferry Bldg., San Francisco, Cal.

1911

Arrivee, David A. Forest Supervisor, Targhee National Forest, St. Anthony, Idaho.
Beard, Frank W. Oil Dealer, Vacuum Oil Co., 913 N. 7th St., Kansas City, Mo.
Bowen, Clarence W. Orange Grower, R. F. D. No. 2, Fullerton, Cal.
Brownlie, J. Roy. Assistant Local Manager, Thompson Yards, Inc., Livingston, Mont.

Campbell, Hugh E. Manager McCuish Logging Co., Prairie, Wash.

Eisenach, Walter L. Land Appraiser, N. P. Ry. Co., 1410 East 10th St., Duluth, Minn.

Gillis, James R., c/o Los Banos College, Laguna, P. I.

Hamilton, Carl L. Advertising Department White Pine Bureau, 308 Merchants National Bank Bldg., St. Paul, Minn.

Hauge, Adolph G. Forest Supervisor, U. S. Indian Service, Welipinit, Wash.
Hoffman, Julius V. Director Wind River Experiment Station, U. S. F. S., Stabler, Wash.

Kenety, Wm. H. Forest Engineer, Cloquet Lumber Co., Cloquet, Minn.
Martin, Dean W. Timber Section, Bureau of Internal Revenue, Washington, D. C.

Oppel, Arthur F. Minnesota Forest Service, St. Paul, Minn.

Underwood, Wm. County Agent Leader, Pullman, Wash.

Weber, Henry G. District Supervisor, M. F. S., Duluth, Minn.

Williams, Donald T. Address unknown.

Young, Paul. Fruit Inspector, Department of Agriculture, Eugene, Ore.

1923 GOPHER PEAVEY

1912

Beyer, Walter F. c/o Home Insurance Co., 56 Cedar St., New York.
Blodgett, Harvey P. Brown, Blodgett & Sperry, Advertising Co., 1376 Portland Ave., St. Paul, Minn.
Clymer, Wm. R. Special Insurance Agent, 1626 Laurel Ave., St. Paul, Minn.
Conzet, Grover M. Assistant State Forester, St. Paul, Minn.
Harris, S. G., Jr. District Sales Manager, Page & Hill Post & Pole Co., 418 Plymouth Bldg., Minneapolis, Minn.
Hodgman, Arthur W. Westport Lumber Co., Westport, Ore.
Norman, Sigvald. Manager and Buyer, Page & Hill Co., Escanaba, Mich.
Orr, J. E. Sales Manager, Lake Independence Lumber Co., Big Bay, Mich.
Pearce, Wm. R. Botsford Lumber Co., 5th St., Faribault, Minn.
Pettibone, Herman M. Sales Representative, Chicago Mill & Lumber Co., 606 51st St., Milwaukee, Wis.
Spellerberg, F. E. City Forester and Superintendent of Parks, City Auditorium, Sioux Falls, S. D.
Stevenson, John A. Federal Horticultural Board, Washington, D. C.
Wilson, Robert. Chief, Section of Windbreaks, Northern Great Plains Field Station, Mandan, N. D.

1913

Buhler, Ernest O. Banker, McGrath, Minn.
Erstad, Andrew. Boise-Payette Lumber Co., Barber, Idaho.
Griffin, Thomas A. Auditor, Northwestern Miller, 118 S. 6th St., Minneapolis.
Hall, E. H. Forest Examiner, Eugene, Ore.
Howarth, Robert B. Manager, Bond Dept., J. A. Hogle Co., 1001 Eccles Bldg., Ogden, Utah.
Henchel, Norman. Manager Citrus Ranch, Box 188, La Manda Park, Cal.
Moir, John. Insurance, 1766 Laurel Ave., St. Paul, Minn.
Nuffer, Henry. Rancher, R. F. D. No. 1, Jefferson, Ore.
Renshaw, David. (Deceased) 1915.
Savre, Oliver. Address unknown.
Simpson, Chas. D. Assistant District Forester, Ogden, Utah.
Tobin, Paul H. Cloquet Lumber Co., Cloquet, Minn.
Wiggin, Gilbert H. Acting Superintendent, Forest Experiment Station, Cloquet, Minn.
Rogers, Ernest. (Deceased.)

1914

Aldworth, Donald. Mill Agent, Old Town Woolen Co., 456 4th Ave., New York.
Braden, Kenneth. Blister Rust Control, Bureau Plant Industry, Washington, D. C.
Cummings, Thomas. Fort Benton, Mont.
Freeman, George. Address unknown.
Graham, S. A. Instructor, Division of Entomology, University Farm, St. Paul.
Lindeberg, George C. Empire Lumber Co., South St. Paul, Minn.
Mueller, Alfred T. Markeson, Wis.
Ringold, Stanley L. 1596 Ashland Ave., St. Paul, Minn.
Rose, Logan. Mankato, Minn.
St. Marie, Adrian A. Carpenter Paper Co., Omaha, Neb.
Spink, Harold W. Lumber, 1308 R. A. Long Bldg., Kansas City, Mo.
Torgrin, James R. (Deceased) 1915.

1915

Chance, Jener D. Highway Superintendent, Clark County, Clark, S. D.
Dennis, Henry M. 809 6th St. W., Oakland, Wis.
Dunn, Frank. Hinsdale, Mont.
Hawkinson, Carl M. 301 Cedar St., Virginia, Minn.
Hansen, T. S. Assistant Superintendent, Cloquet Experiment Station, Cloquet, Minn.
Sischo, Paul C. 804 Title Guaranty Bldg., Los Angeles, Cal.
Wyman, Hiram E. Rancher, Kerman, Cal.

1916

Bartelt, Harry E. Brooks Lumber Co., 2081 Buford Ave., St. Paul, Minn.
Bell, Ernest Thomas. (Deceased). Killed in action, 42nd Division, A. E. F.
Blake, Phillip B. Manager, Glendora Co-operative Fumigating Co., Glendora, Cal.
Broderick, Martin J. 603 Delaware St., Minneapolis, Minn.
Crane, Leo F. Captain U. S. Army, Fort Sill, Okla.
Gierlow, Atle. Tropical Lumber Business, 1704 Louisiana Ave., New Orleans, La.
Hyde, Luther. Jewel Nursery Co., Lake City, Minn.
Johnson, Oscar S. Chicago, Ill.
Rhoads, Ralph E. Scott Paper Co., Newman-Stern Bldg., Cleveland, Ohio.
Schwartz, E. R. Accountant, Electro Chemical Co., 1821 Liberty St., Marinette, Wis.

1917

Burnes, John R. Page & Hill Post & Pole Co., 906 Hershey Ave., St. Paul.
Anderson, P. O. Sylviculturist, Minnesota Forest Service, St. Paul, Minn.

1923 GOPHER PEAVEY

1918

Danson, Robert. Nursery Salesman, Algona, Iowa.
DeFlon, Leland L. Instructor, Division of Forestry, St. Paul, Minn.
Hauser, George W. Lumber Salesman, Thompson Yards, 817 Hennepin Ave.,
Minneapolis.
Pendergast, Earl S. Manager, Retail Lumber Yard, 210 Main St., South Sioux
City, Neb.
Tuttle, Lauren. Odell-Tuttle Co., Minneapolis, Minn.
Swanson, Herbert W. Forest Products Laboratory, Madison, Wis.

1919

Backus, Romayne L. Realtor, 1953 Che remaya Ave., Hollywood, Cal.

1920

Brayton, S. C. Consolidated Power & Paper Co., Wisconsin Rapids, Wis.
Frudden, Clyde M. Lumberman, U. Frudden & Son., Greene, Iowa.
Grabow, Rudolph H. Chemist, Forest Products Laboratory, Madison, Wis.
Isaac, Leo A. Forest Assistant, Okanogan National Forest, Okanogan, Wash.
Palmer, Paul A. Advertising (Pioneer Press), 1912 Marshall Ave., St. Paul.
Schmid, Walter W. Page & Hill Co., Times Bldg., N. Y. C., 50 Church St.,
New York.

1921

Dwyer, Daniel E. 928 Goodrich Ave., St. Paul, Minn.
Erickson, Leyden N. Forest Products Laboratory, Madison, Wis.
Grapp, Lloyd O. Forester on Menominee Indian Reservation, Keshena, Wis.
Ostrowski, Francis W. U. S. F. S., French, Wyo.
Person, Hubert W. 2437 Dupont Ave. S., Minneapolis, Minn.
Wackerman, Albert E. 1615 4th St. S. E., Minneapolis, Minn.
Whiton, Arthur L. Salesman, Chicago Mill & Lumber Co., Chicago, Ill.

1922

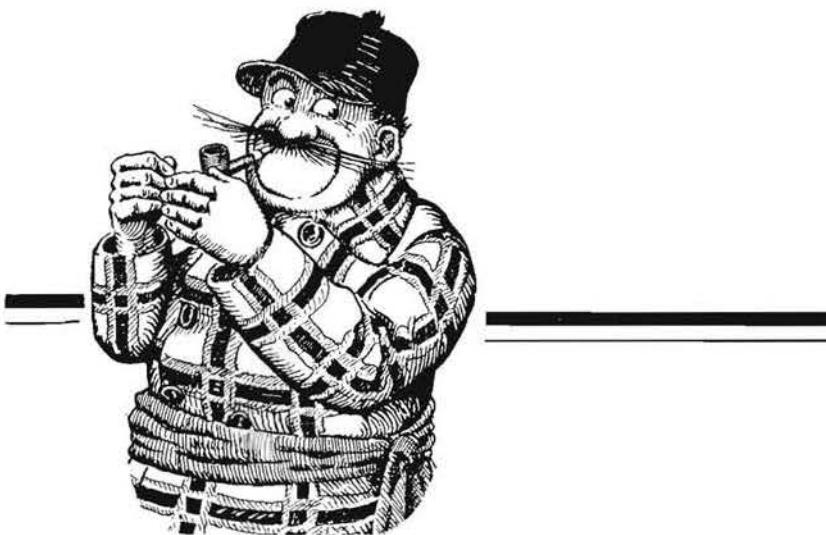
Anderson, Alvin A. Salesman, Chicago Mill & Lumber Co., Chicago, Ill.
Nelson, Ralph M. 2257 Langford Ave., St. Paul, Minn.
Sheehan, John A. St. Peter, Minn.
Thayer, Burton W. Thompson Yards, Minneapolis, Minn.
Burton, Sidney S. Assistant, Cloquet Forest Experiment Station, Cloquet, Minn.
McCreery, Otis W. Thompson Yards, Minneapolis, Minn.



GOPHER CANTHOOK

THERE ISN'T ANY POINT TO IT





TO PAUL BUNYAN

That hero of every backwoods Spanish Athlete, we, with awe and admiration, dedicate this last load.

Paul Bunyan (you've all heard of Paul?),
He was the king-pin of them all:
The greatest logger in the land!
He had a punch in either hand,
He licked more men and drove more miles;
And got more drunk in more new styles
Than any other peavey prince
Before, or then, or ever since.

SOME EARLY LOGGING HISTORY

WE have all encountered the Mosquito of the North Country and all of us believe that they are pretty well developed animals with keen appetites. With our experience we can appreciate what Paul Bunyan was up against when he was surrounded by the vast swarms of the giant ancestors of the present race of mosquitoes, getting their first taste of human victims. The present mosquito is but a degenerate remnant of the species. Now they rarely weigh more than a pound or measure more than fourteen or fifteen inches from tip to tip.

Paul had to keep his men and oxen in the camps with doors and windows barred. Men armed with pike poles fought off the insects that tore the shakes off the roof in their efforts to gain entrance.

To remedy this evil, Paul imported a couple yolks of the big Bumble Bees, hoping that they would be instrumental in destroying the pests. The cure turned out to be worse than the original trouble, as the Bees and the Mosquitoes made a hit with each other and their offspring were worse than their parents. They had stingers fore and aft and could get you coming and going.

About this time Paul Bunyan got his shotgun that required four dishpans full of powder and a keg of railroad spikes to load each barrel. With this gun he could shoot geese so high in the air that they would spoil before reaching the ground. This firearm was some protection against the Mosquitoes.



They could get you fore and aft

Paul Bunyan had quite a time feeding his crews. Often he did not know within several hundred how big his crew was. Big Joe, the Canuck, was the boy who could put a mean scald on the chuck. He was the only man who could make pancakes fast enough to feed the crew. He had Big Ole, the blacksmith, make him a griddle so big that you couldn't see across it when the steam was thick. The batter, stirred in drums like concrete mixers, was poured on with cranes and spouts. The griddle was greased by colored boys who skated over the surface with hams tied to their feet. They had to be colored boys to stand the heat.



Big Joe's pancake griddle

It was always thought that the quality of the food at Paul's camps had a lot to do with the strength and endurance of his men. It seems that it must have for even the chipmunks that ate the prune pits got so big they killed all the wolves in the vicinity. Years later the settlers shot them for tigers.



No, Gwendolyn. That isn't Robinson Crusoe. That's Shantz Ike Walton Hansen, one of our august profs. He always fished between naps but he never caught anything but the general razz when he came back to camp. We had fully expected to print a few more snapshots of our faculty but this one settled it. We can't handle any more than one at once.



Clothes may not make a man but they will go a long way towards making a woman. Here's the proof. A little female attire; four of our frosh; and we have four of the meanest women that ever showed up on the range.



It might be real appropriate to call our profs, sawyers in the "mill of college life." As guiders of our mental development they surely are workers in wood.



"Ron" Erickson claims that even if "The Big Dane" is a senior, he still doesn't know but what the "Lost Chord" is a mystery of the lumber business.

"309-MEN"

"309-Men" is an unofficial but very real organization. There are not that many members in the club. Floyd Einstein Tilden assured us of this fact after he had completed a complex, three day mathematical problem: involving calculus, a can of P. A., and a contortion of the human body denoting "languidness." The organization meets semi-occasionally—the time, and especially the place, being sort of hazy. The club has put a ban on the use of Peerless and Union Leader since Jack Leffleman caused the appearance of the St. Paul fire department. Another commendable forward step is the development of an efficient mask for the olfactory organs; making it possible for Flossy Tilden, Jack Leffleman and Moose Knight to attend meetings all at the same time without marked discomfort to the less fortunate members of the organization. Mr. P. W. Youngers, president and enthusiastic supporter of the club, predicts an even better year for 1923.

THE GOBBLERS

We are told the Gobblers is a secret organization. It may be secret, but it seemed to us that everyone had their hand in on it. To us the initiation into the organization is impressive—very impressive in fact. Everyone is given such a warm welcome. As we have said, the Gobblers is a secret organization. We must not divulge any of its secrets—but if you take this with the same proverbial grain of salt that one takes some of the secrets divulged by the initiates, we have not given a thing away.

ASBESTOS PANTS

(This has nothing to do with the above)

"Big Dane" Fenger has just patented a pair of asbestos pants. Necessity surely is the mother of invention. Ask any member of the 1922 Junior Corporation.



It seems the doctor had told "Dock" that he had a weak heart. After plunging into Lake Itasca on the day the ice went out of the old pond, "Dock" declared he had suspected all along and now he knew that the doc was a liar!

Upon second thought, though, we have doped it out that the old carburetor was not present at the time—very probably being parked at Bloomington.

MERRY CHRISTMAS IN A LUMBER CAMP

BY FLOYD TILDEN

Some way or other I happened to take a course in logging in this here institution last winter and along with this course you are supposed to go up in the sticks and live off a lumber camp for a couple of weeks to sort of figure out what Mr. Cheyney was talking about in the course. Me and Jack got it doped out that we would gang up on some outfit this Christmas vacation so we got the chief to find a place where they would take such wanderers in and he fixed it up with some lumber company in Wisconsin to take us in.

We had a rather unique trip and probably better than I expected. We arrived at Owen, Wisconsin, at midnight and due to our very characteristic dress we did not have the crust to go to a real classy hotel so we looked around for a warm barn or an unlocked church and not being successful in our mission we decided to stay in a second rate place called the Beaumont House which we went into but finding no one around we draped ourselves over a number of vacant chairs in the parlor and thus we spent the night. When the cook started to rattle the pans in the kitchen the next morning we got out before anyone showed up and then after we ate our breakfast in a different place we found the offices of the lumber company which were the life of the town, which is about the size of Two Harbors. The guy in the office was kind to us and agreed to send us both to the same camp at Jump River wherever that was and so after Jack had written to his girl to assure her that we were still safe and I suppose he sent her his sincere affections and begged of her not to worry about him as he was all right (and in good company) and that it wouldn't be long before he would be back to tell her about his adventures with the foreigners in our neighboring state. Anyhow he asked me how to spell "audacious" and I told him it was spelled with either a "p" or a "w" but I didn't see why it was necessary to use words of that caliber when he was writing a note of the supposed contents thereof, which I had good reason to believe it contained, whereupon he opened the door of the P. O. and gently but firmly pushed me out but I came right in again. As I intended to say we resumed our journey by train to a burg called Polly which we found because there was a sign on the station that said it was there and we waited five hours about and then took another train to this here Jump River which is no bigger than Polly. Fortunately we did not have to go far on this train as the fare had risen from three cents to five cents a mile and on this last rattler we talked with some fellows that were also going to an Owen's lumber camp, so when we got off we followed them for about three miles until we came to a sign that said this way to Camp 11 and we wanted to go to Camp 10, but how did we know there were two Owen camps in that vicinity? The fellows had got ahead of us by this time so Jack said that I should call to them as I had good lungs but I maintained that his were better so we stood there and argued about our vocal

abilities until the fellows were out of sight. We started back to town and was met by a farmer who knew nothing but advised us to go back to town, which we were doing, but soon afterwards a Ford came along and I limped as best I could and he stopped and we asked him. He said to keep on the way we were going and we did and we came to a camp where they told us to walk a couple of miles down the track and up a spur a quarter mile to the camp so we proceeded down the railroad slipping and falling on the icy ties until I had visions of spending a sleepless, eatless night in those cold hardwoods. Finally we found the camp and the foreman greeted us like we were old friends and took us to a late but very welcome supper much to the cook's disgust.

Well, ordinarily one attempts to do a little work while at camp and the chief had loaded us down with typewritten sheets telling how to build a logging camp or some such thing which we couldn't exactly understand, but which we were going to do, and since we had heard it was best to draw a picture of the camp before we ventured out in the woods as there would not be any danger of getting lost as you have the camp before you at all times, so we done it. Then we made a map of the tract and Jack took notes and drew the map and I ran the compass and Jack followed me so much he got to calling me Robinson and I called him Friday. We got along all right in camp except I tangled with one guy that came up to me once, while I was eating and dodging the knife of the fellow next to me and he said, "You gotta my place," whereupon I told him I hadn't noticed his name written anywhere around so we threw a couple sugar bowls around for awhile. Since the fight was unadvertised the admission was free and ring-side standing was available for all.

Well we got tired of the camp after a while and so we started to walk to Ladysmith which is a town twenty-five miles away and we walked twenty miles and then a Ford came along and I limped and we got a ride. We went to a ramshackle of a hotel in the town and incidentally I found I had blistered both feet and then Jack started to putter around as usual and I fell asleep but after a while Jack woke me up to find out what time it was as his watch had stopped due to the picture of his girl which he had pasted on the inside of the crystal had gotten loose and had stopped the hands. I told him that I did not blame the watch and that it must have been a strong piece of machinery to stand it as long as it did and then he assaulted me and nearly incapacitated me so I couldn't eat supper, which we did later. We had to pay when we left this hotel the next morning and that is the way we spent our Christmas vacation.



"Flossy" Tilden and "Jack" Frost were afforded a rare privilege while making their logging report. They mapped sections 37 and 38 with an east and west compass.

AT THE BOTTOM OF THE LUMBER BUSINESS

By B. W. THAYER

After graduating from the College of Forestry and desiring to become a lumberman, I found myself laboring under the disheartening handicap of being neither Scandinavian nor addicted to the excessive use of snuss. Being advised that such a woeful lack of the essentials of the industry could only be overcome by immediate contact with old lumber-graders, who knew the practical side of the profession, I started work at a large St. Paul lumber yard with the alcohol-drinking, ski-jumping, snuss-chewing Scandihooians. During the incipient stages of my experience here, Mr. Allison's course, "The Carrying of Light and Heavy Lumber," 156 f. w. s. proved an invaluable aid and also "Beginning Courses in Swedish," taught by Stromberg, better fitted me for my position.

The atmosphere was essentially Scandinavian, as my readers may have guessed from the few remarks I have made. Any time of the day one might close one's eyes and, hearing the babble of tongues, imagine oneself in Copenhagen. Although of English descent, in a few months I found myself calling for "two ta fyre, fjorten fod lang nummer en," instead of two by fours, fourteen foot long number one. My morning greeting to my fellow workman became, "Hvorledes guar det," in place of the usual salutation.

Often in scaling western fir lumber we would come across a piece which was a trifle under standard size. This necessitates the use of the "fir stretcher" an apparatus the greenhorn is sent in search of from one end of the yard to the other, but which proves to be a very elusive article, never being found as far as I can determine.

Interesting dendrological facts never taught in school were often overheard. For example, warped and twisted boards were supposed to be the product of trees growing on a side hill in a swamp. End check in western hemlock was laid to the destructive splinter-cat which attacked the timber while still standing.

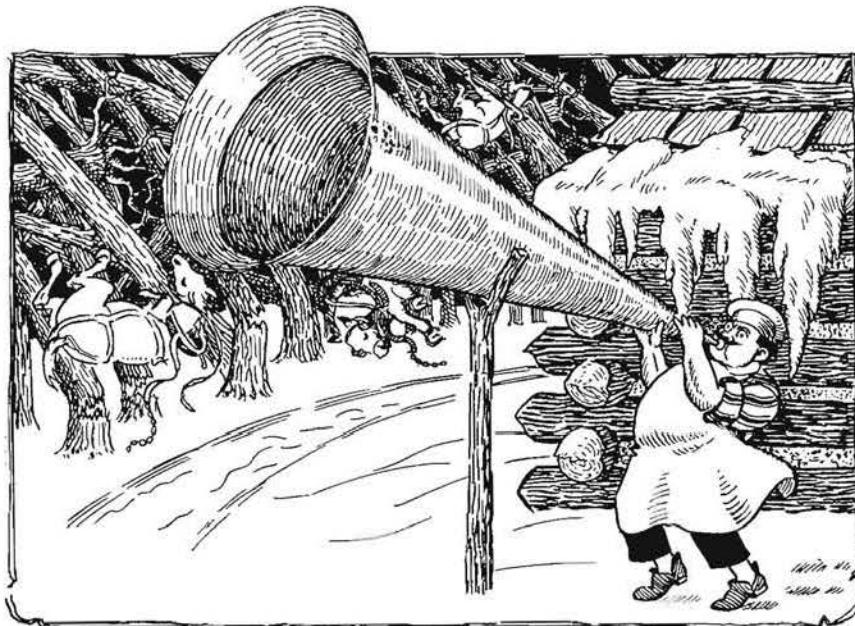
During my search for knowledge in regard to grades of lumber and the utilization of the various species, I was set to work with an experienced grader who guaranteed to make me a mental marvel so far as lumber wisdom was concerned. Unfortunately this grader proved to be a rabid fisherman who pursued the finny tribe during his spare time, winter and summer, day and night. His conversation was restricted to the whys and wherefores of fishing, resulting in my becoming an authority, not on lumber, but on the effect of snow, wind, rain and temperature on the habits and morals of the fish family.

Luckily my work with this grader was terminated so that, instead of thinking and dreaming of fish, I was able to accumulate information from others on the more practical subject of lumbering.

Practically every workman told me at some time, in greatest con-

fidence, of the tremendous loads he was accustomed to carry while working in the Swedish lumber yards. According to such tales, the Swedish climate must have an astonishingly invigorating effect, resulting in one man doing the work of three, while apparently the American climate reduced their strength to such a low ebb that similar feats were impossible.

An experience of this sort can hardly be advocated for one with a high-strung delicate temperament, for lumberjacks are strong advocates of hard labor and are not inclined to sympathize with a young greenhorn who may have an abhorrence for physical exertion. Actually handling lumber proves to be a very satisfactory means of gaining a sound basis of the business and incidentally offers other advantages, such as qualifying one for a professorship in Scandinavian languages and Vulgarian slang.



Paul Bunyan's dinner horn

MOOSE LAKE LAMENT

Oh I'm a *football* hero,
I play a *smashing game*.
They play me big in the papers,
For I've *bucked the line* to fame.

But in spite of all my *touchdowns*
I still can't *make a gain*
In the affections of the women,
Though I try with might and main.

They always seem to *block my passes*;
They always make me *jumble*;
They *mix my signals*, spoil my *plays*:
Yet for each one I tumble.

I called upon her just last week.
I made a fine appearance;
But found her little brother there
Confound his *interference*.

He wasn't *in the game* for long;
She sent him *off the field*.
I then proposed to use a *play*
That was bound to make her yield.

The *right end* of the sofa
I left to sit by her;
Determined now to make a *score*;
The *yards to gain* seemed fewer.

I made a speedy backward *pass*,
My arm her waist enfolding—
She sent me home at half-past eight,
Penalized for holding.

EXTRACT FROM AN OLD-TIME DIARY OF AN OLD-TIME FOREST RANGER

Crooked Creek, Arizonie,
August, 15, 1906.

FIELD NOTES OF SURVEY

Hone sted claime of Bud Brown, Bonefido squater. This survy was run and plated on a varyation of 9 degrez and 75 minits east of polarus (or some other point i fergitwhich). Wether looks like rane.

This tract is situuate in un survyed terytory whicht when survyed wil probebly be in town ship 82 west of Range 3 north of grene witch.

Thar being no established corner in this vasinetly i built a pile of stonez 4 feet high for a forrist reserez monument, frum whicht a miskeete tre bears north 7 degrez and 76 minits east, a big mal pie rock bears west 27 degrez south.

Thense i run east 20 degrez north 48 chains an set corner no 2 a mal pie rock set in the ground (lots of other rocks around but this one has blubers onit). frum whicht a bald faced cow with a little calf bears east 22 degrez south and a big steer going the other way bears west 11 degrez north no other objext near.

Here i back site on corner No 1 and find that the varyation has changed, so i precede on a tru line.

Thense i run north 10 degrez west thru oke brush 21 chains to deep wash (here my dog got after a mavric bull so i quit the survy and follo my dog).

August 16, 1906. i start wher i quit yesterday and at 45 chains i set corner No 3 whicht is a oke stick set 1 ft in ground, whense a oke bush bears east, and the left hand end of a big cloud bears a little south of strate up, no other objext near.

Thense i run west 10 degrez south 15 chains an a little over to a high clif whicht i cant descend, so i role a big rock off the clif to mark my line, when a white tale buck jumped out of the oke bush and i kilt him with my sixshuter, (here i quit the survy an packed the mete to camp).

August 18, 1906 i resume this line at the foot of the high clif wher my rock lit, i estermate the distance to be a little under 5 chains to the top so i allow i am now 20 chains frum corner No 3, thense i run west 10 degrez south 48 chains and set corner No 4 whicht is a oke stik set in a dager wead, whense a smoke frum a forrist fier bears west 46 degrez north about 10 miles, no uther objext near.

Thense i run south 20 degrez east 11 chains an 15 steps to foot of high clif i cant asend, so i shoot a spot on a rock on top to mark my line, i clime the clif at another place an resume my line, i estermate the dis-

tance to be about 5 chains a little back of strate down, so i allow i am not 16 chains an 15 steps frum corner No 4 (here Bud Brown got a blister on his heel an quit chaneing, so) i continue on a tru line 733 yards as i step to corner No 1, whicht ort to be the place of beginning, but aint, so i allow theres some thing out of plum an ajust my cumpas according, an precede about 200 yards to my left and tie into the correct corner, and the place of beginning, contaneing 160 acres be the same more or les.

BILL CALTUTE,
Forrist Ranger.
J. H. SIZER.

CONCERNING LOG RIDING

The old-timers tell us that Paul Bunyan was a good man on the "round stuff." He could spin a log until the bark came off and then run ashore on the bubbles.

Fenger tried it and it certainly looked like he spun it fast enough but all that came off was Fenger. The bubbles must have all broken for "the Dane" didn't walk ashore. Ask any of the 1922 Junior Corporation.



Sailor (mourning loss of high school credits caused by registrar's office): "Ya, and they won't give me credit for language. I've got language!"

Cheyney (having heard "Sailor" conversing with mosquitoes): "Yes, you have language all right—but they won't give you credit for it!"



"Bones" Forseth (embryo oil magnate): "Sir, I'd like my salary raised."

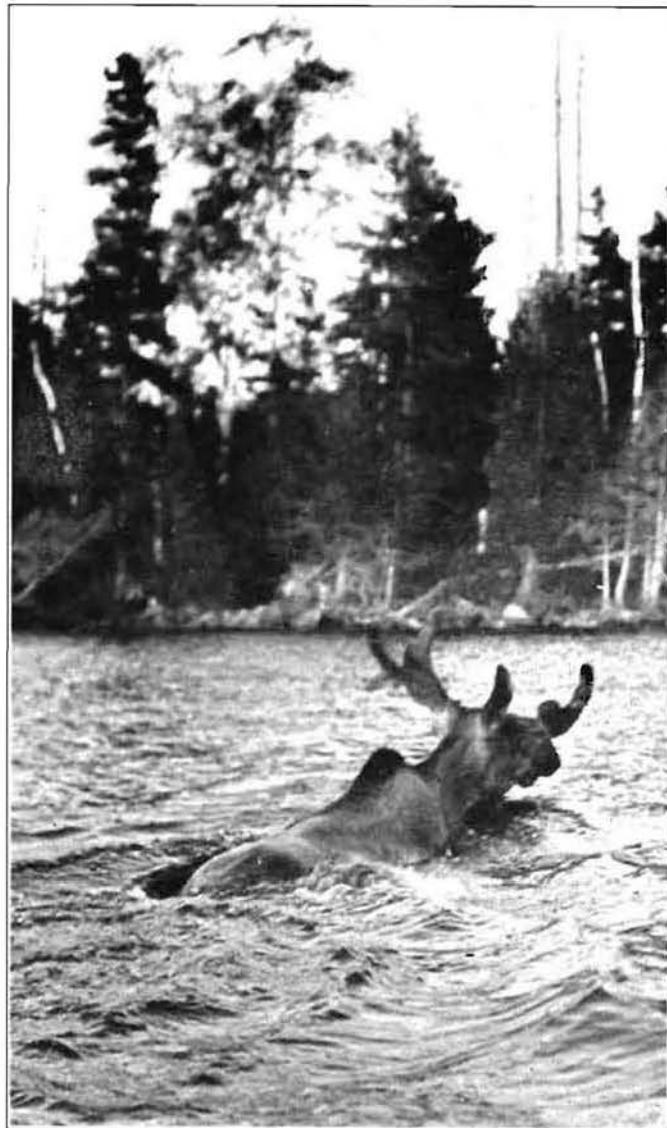
Boss: "Well, don't worry. I've raised it somehow every week so far, haven't I?"

AND THEN HE DROVE ON

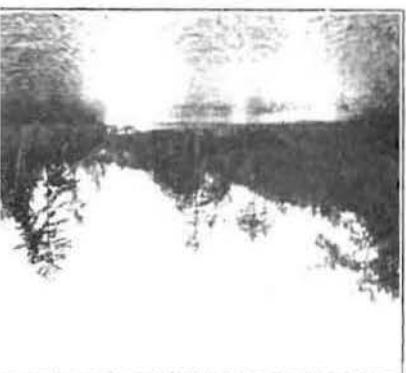
"Fig" (referring to W. J. B. picture in the Minneapolis Tribune): "Gosh! I've never heard of anyone raising ear-muffs before but I knew a guy who raised a beard so long he sewed pockets in it and used it for a vest!"



"Sailor" Youngers (seated in crowded "cow school" chariot): "I hate to see women standing, don't you? Guess I'll look out the window."



Moose on Eddy Lake



Elik Lake



1923 COPHER PEAVEY



NEY

WINTER WHEEZES

AS RECORDED BY C. O. CHRISTOPHERSON

Valuation: 8 A. X., Prof. Allison presiding.

Prof. starting to lecture. "This morning I wish to speak upon the general property tax and its relation to forests."

Nelson and Dockstader dash in—"Good morning Professor Allison, we are sorry to inform you we are late."

Prof: "So I observe; however, it is some consolation to see you here at all. Now as I was saying—"

(Strains of "How Can I Leave Thee" arise from 309): Prof dashes out and comes back with "Deke" Bryan and "Chevrolet" Clark. The crap game started by Youngers and Upton is broken up by the unexpectedly early return of the beloved Prof.

Prof: "We will now return to the subject at hand. Mr. Ostergaard, how long a rotation is advisable for White Pine in the case under consideration?"

Ostergaard (mentally reviewing geology lesson for the next hour): "About 250 years."

Prof revived with H₂O hastily procured from 309. "What do you think about this Mr. Barrett?"

Barrett: "About 50-60 years."

Prof: "Correct (greatly encouraged—decides to engage in a little pleasantry to reward his scintillating students and show his appreciation). Barrett, which does the most good, the sun or the moon?"

Barrett (after deep meditation): "The moon, because it shines when it is dark while the sun shines when it is light."

Prof nearly hits the floor again but is saved by the quick action of "Billy" Sunday. He recovers and finally manages to continue his lecture. "So you can easily see that taxes are entirely dependent upon us birds who pay them. The time is now up and the class is excused."

There is no sound except the snores of Porzadek and Bryan harmoniously mingling with wheezes from the rest of the class.

"Oh, well," sighs our hero as he whacks Bryan on the head with a cypress knee. "Caesar had his day." And he lopes down the stairs and boards the inter-campus car, bound for his Swede class.



Fegraeus: "I know a guy who claimed he was *some* cruiser. He estimated a stand at 40 million. When the stuff was cut and scaled there were three logs missing. The guy sez, 'I went out in the sticks and sure enough, there I finds one log had been broken in felling and two of 'em had been covered by snow and missed by the skidders!'"

What a Lumber Organization Thinks About It.

The Weyerhaeuser organization believes in conservation and intelligent use of forest resources.

Through the medium of advertising and improved methods of merchandising, we are endeavoring to curtail needless waste in the use of lumber—to guide the lumber user in the most economical and profitable use of forest products.

Changing conditions have brought to the lumber industry new problems and new opportunities.

There is need in both public and private enterprise for men who know the principles of forestry and who understand the great economic forces that will control its advancement.

Weyerhaeuser Forest Products

Saint Paul, Minnesota

(Proofs of advertisements in the several Weyerhaeuser campaigns now running in the national magazines will be mailed on request to Foresters or Forestry students.)

THE FELLOW THAT DROPT THE MATCH

Moast anny book on woodcraft has a hoal lot on how to kild a camp fire but no one of them tells how to putt it owt when bilt. This is the mane thing to knoe, & for lack of knowllidge on this subjict our mity forrists dwindel every yere & get littler every time they dwindel. Enny fool with a match can destroy moar fust class rale timber in haff a day than the Yoonited States Forrist Commishun can proppygate in awl summer. As the poit trooly sais:

"He dropt the match when he lit his seegar
& it fell in a buntech of grass.
& then he went on to shute his bar
In the distunt mountain pass:
& a blaze shot uppard, the wind it riz,
& the fire spred awl over the patch,
& the melted pants button they found was his—
The fellow that dropt the match."

But retribootion don't always git the rite party—which is a shaim. If things was diffrent they woedent be the saim. No troo harted spoartsman begrudges a few akers of skrub timber being burnt off, so long as it dries the jooce out of sum sap-hed with his pokit full of matches.

From "The Forest Ranger."

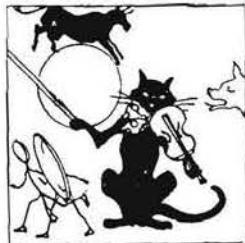
WANTED, A CONTROL SYSTEM

Something ought to be done about the he-flapper,—the gent who stands on the curbstone and laughs at other folks, the gent with the bobbed hair and chin whose business in life is to make the human race stop and wonder whether there is anything in this evolution business or not. He thinks the survival of the fittest has something to do with the cut of his coat and, if that's the case, he'll still be surviving when folks are standing over the rest of us and wondering what that chiselling was before the rain wore the marble smooth.

If clothes make a man, he's a demigod, but if brains have anything to do with it, he's still in the age when amœbas ran for president.

His one ambition is to impress the girls and he'll succeed the year after Babe Ruth wins the Nobel prize in literature.

No one seems to know exactly why the he-flapper is inflicted upon the world unless it be that the 17 year locust is a little off schedule and science has practically eliminated the possibility of bubonic plague. If it isn't one thing it is another, so it may as well be the gent with the nautical clothes, who hasn't seen salt water outside a medicine glass, as another flood.



Hi Diddle Diddle!

*The Forestry Club's
Annual Revue*

Fetching forms—marvelous melodies—curious characters—scintillating settings — delightful dancing — and nothing undressed but the lumber!

*Written and produced
by Foresters*

No more need be said

University Farm
Auditorium
Friday, March 2
8:30 P. M.
50 and 75 cents

**Such fun
as made
the little dog
laugh!**

*Dancing in the
Gymnasium after
the performance.*

*Mail or phone res-
ervations to the For-
estry Club, 2257
Langford Ave., St.
Paul, Midway 2441*

YE FIRESIDE HALLE
and
TAMARACK LODGE

For Private Dancing
Parties
For Reservations
Call Mid. 7730

OTTO RUUD
Hardware Company
417-19 E. Hennepin Ave.
Dealers in
Hardware, Stoves, Kitchenware, Tools, Paints, Cutlery, Radio Supplies, Sporting Goods
Phone Gladstone 1319

Patronize Our Advertisers



MEN, GET OUT YOUR ASBESTOS EAR PLUGS AND LET'S LET THE "SAILOR" TALK!

A heart-rending play in ten acts.

Scene—Portage, Parent Lake. Kawishawi-Isabella Route.

ACT I—On two mile portage, rainy afternoon.

Sailor (visibly and audibly weary—staggering along the trail with a pack).—!!!!#*ccc-@:?! such a country !!! * %??-& Rain----- wet !! No camp !!!c#** going to rain more !!*@# !!! Wood wet !!%*## nothing to eat—!**||*-??!*||!!"

ACT II—That evening after chow.

Sailor (standing on trembling legs, apparently in the last stages of exhaustion—a condition which might almost be called coma)—Rouses himself to say, "***#!!%* such a life !! wash dishes by candle-light !** t#---- G-D--- (mumble-mumble) -**. off'n this like a dirty shirt !?"

ACT III—1 A. M.

Sailor (sitting suddenly up in bed looking wildly about and hunting frantically for the flashlight—in the process poking Shantz Hansen in the eye). "Gimme that flashlight! Gimme that flashlight! Where in.... *#* (agonized) There's an express train in bed with me, Shantz! Oh!"

Shantz (peevishly): "Lie down you fool! Lie down! How can I sleep with you hunting express trains! Lie down!"

Sailor (relapsing) (mumble-mumble).

ACTS IV TO IX—Repeat Act III every hour.

ACT X—After the morning nourishment.

Sailor: "Well I guess I was too tired—anyway ***!% #—@ this country *#=!% \$@ this is my last!! I'm off'n it like a dirty shirt!"

CURTAIN

Acme Printing & Stationery Co.

411 14th Avenue S. E. Over Simms Hardware Co.

We Printed This Annual.

High School and College Annuals Our Specialty.
Out-of-City Business Solicited.

BANG!!

"They're coming in!"

Say, ever hear that before? No! Then you've missed something. Remember how it is along late in September, as you lie out in a blind on the edge of a lake? Been there since daylight; rain coming down in a cold miserable drizzle; running off your cap down the back of your neck; hunting coat that set you back \$12.00 soaked through and through; your northwest ear so cold and stiff it feels like a saratoga chip—a poker chip—anything but an ear; hands cold; feet cold; nose running like a sugar tree in March, and freezing as it runs; mud oozing up and freezing to your boots; dig into your pocket to see if your shells are wet; hands are numb; you drop the shell into the mud—and cuss; ask your partner for a shot of what's on his hip; tells you he forgot to bring it; cuss again. There you lie—in the interest of sport—risking pneumonia for the ducks you hope are in the neighborhood. A smoke would come good now; so numb fingers fill your pipe; and frisk your pockets for a match. Ah—there is one—and by George, only one. Carefully, fearfully, prayerfully you light it—fine, here's a little warmth at last. One delicious—then the wind got it—your only match; and now—but let's drop the curtain. If the parson heard you now you wouldn't be passing the plate next Sunday. In the midst of your ravings comes a sound you know well; next a faint honking that grows constantly nearer and louder; your partner is jerking at your soggy coat-tail—saying in a loud whisper—"S-S-S-H-H—lay down there, you big stiff, THEY'RE COMING IN!"

Patronize Our Advertisers

For Nice Things to Eat Ask

Michaud Brothers, Inc.

WHOLESALE GROCERS

255, 257, 259 East Fourth St. ST. PAUL, MINN.

Established 1872

ST. ANTHONY PARK STATE BANK

Corner Como and Carter Aves.

"Your Community Bank"

Grant's Hardware

ELECTRIC WASHING MACHINES

ELECTRIC SWEEPERS

ELECTRIC IRONS

2278 Como Avenue

ST. PAUL, MINN.

A. A. MANKE
2262 Como Ave.
DRY GOODS
NOTIONS
MUNSINGWEAR
ARROW COLLARS

W. S. PALMER
Your Local Jeweler
Will take care of the time
and in connection our Ra-
dio Department, super-
vised by L. L. Blackman.
**A Complete Line of Ra-
dio Accessories at
All Times**
"Say It By Radio"
2276½ Como Ave.
On carline near Carter

SAW DUST

A few grains from the old block, borrowed from here and there.

Don't worry about what people say about you. Be thankful they aren't mind readers.

Sometimes we wonder if autos are responsible for the disappearance of good old-fashioned horse sense.

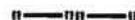
After all perhaps, it is better to remain silent and be thought a fool, then to speak and remove all doubt.

The man who knows *how* will always be able to get a job; but the fellow who knows *why* will be his boss.

Many a man traveling over the road to success has a few punctures.

When you run up against the man who claims to be a saint, make him pay in advance!

A man's clothes are in style as long as they are wearable; a woman's are wearable as long as they are in style.



"Squint" Jensen (at the Stadium Drive luncheon): "Say, how can I drink my coffee? They haven't given me any saucer!"

H. A. Rogers Co.

Sells Supplies for

FORESTRY ENGINEERS

Surveying Instruments

Drafting Tools

Field Books

Steel Tapes

Tallying Machines

Pedometers

Odometers

Timber Scribes

Spades

Profile and Cross Section Paper and Cloth

531 Marquette Ave.

Minneapolis, Minn.

DREBERT'S
Special Sandwich Shops
"LIKE FINDING YOUR APPETITE"

START YOUR DAY RIGHT!

Our "Cozy" Breakfast Puts You in the
Right Humor.

Good Food, Moderately Priced.

SUNDAY HOURS FOR SERVING

BREAKFAST-TIME
8:30-12:00 o'clock noon

EVENING-TIME
5:30-8:00 o'clock

DREBERT'S
Special Sandwich Shop
"LIKE FINDING YOUR APPETITE"

Right next to the Campus

At Right Prices

You will find a full line of
Men's Furnishings, Dry
Goods, Notions, Station-
ery, Toilet Articles and
Kodak Supplies.

**ST. ANTHONY PARK
DRY GOODS STORE**

1435 N. Cleveland Ave.

**SANITARY BARBER
SHOP**

Your patronage solicited

LAWRENCE'S
(Formerly Hennepin)

CLEANERS, DYERS,
LAUNDERERS

Twenty-four hour service

Percy T. Ross, Prop.
2236 Carter Ave.

**PIPE
HEADQUARTERS**

We repair all makes

EVENSON

"Your Druggist"

Order your books from

The Perine Book Co.

1411 University Ave. S. E.

Minneapolis



Northern Minnesota Finest Department Store

VALUES That Stand Alone in Everything to Eat and Wear

Glantz Bros.
THE STORE OF TODAY, TOMORROW AND EVERY OTHER DAY

Department Store

Park Rapids, Minnesota

Phone 103

SAUSAGE

We make just one Quality—It's the

BEST

34

Different Varieties

Write for

Wholesale Price List

We ship all over the STATE

L. Eisenmenger Meat Co.

455-457 Wabasha Street St. Paul, Minnesota
No Branch Markets

FISHING TACKLE CAMP EQUIPMENTS BOATS AND CANOES
Out of door Equipment of every kind
Established 1867

Kennedy Bros. Arms Co., Inc.

SPORTSMEN'S OUTFITTERS

GUNS AND SPORTING GOODS

GEORGE SHELTER TENTS OLD TOWN CANOES BICYCLES
Corner Minnesota and Fifth Streets St. Paul, Minn.

Observing Bryan: "Say, where did you get the new stag-shirt. 'Sailor?'"

(“Dock” enters garbed in his “dirty shirt.”)

"That's all right 'Sailor,' yours isn't a stagnant shirt!"

— 1 —

The drive was over and so was the usual spree. At last one of the half-soaked "jacks" was forced to resort to the pump for liquid refreshment. After attempting to draw water with no result he was heard to remark,

"Well I don't blame you any. S'all right old boy. I know I wouldn't patronize you when I had money."



FINIS