



PINE·TUM

SDI
N6
v.2
34-35

JOURNAL OF
FORESTRY OF THE

The D. H. Hill Library



North Carolina State College

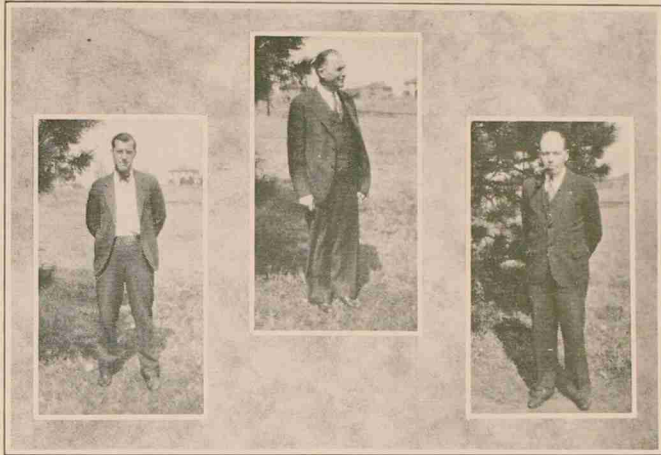
made comfortable by the
to be afforded night and
scenery about them is
enough; and the logger's
quietly in the woods as a
of a pine in a swamp;

no outlook but to the sky overhead, no more
clearing than is made by the cutting down
of the trees of which it is built, and those
which are necessary for fuel."

—Henry David Thoreau.



Views of Hill Forest Cabin



PROFESSOR SLOCUM

DR. HOFMANN

PROFESSOR WYMAN

DEDICATION

TO our immediate faculty, Dr. Hofmann, Prof. Slocum, and Prof. Wyman, we dedicate the second edition of this journal, and to their untiring efforts to instill in us the meaning and possibilities of forestry, we shall strive to pay tribute through a worth while service in that field.

PI-NE-TUM

Journal of Forestry

STAFF

W. E. BOYKIN
Editor

Business Manager
H. F. BISHOP

Assistant Editors
T. B. GARDINER
J. M. STINGLEY
CHAS. MATTHEWS

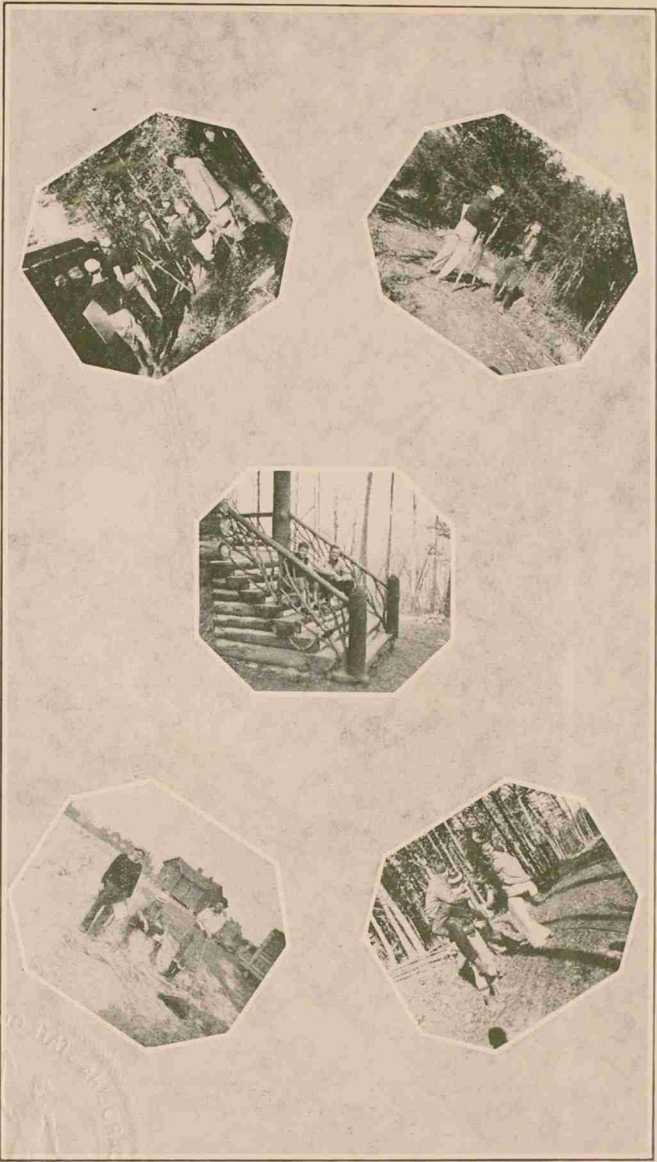
Assistant Business Manager
O. R. DOUGLASS

Advertising Manager
J. R. SPRATT

TABLE OF CONTENTS

	PAGE
Snips and Snaps.....	5
Senior Pictures.....	6
Applied Forestry—Dr. J. V. Hofmann.....	11
Snake Chasing—R. H. Page.....	12
My Hobby—Prof. Lenthall Wyman.....	18
Prospectin'—Poem	20
The Forest Loafer—Poem.....	20
Nursery Work and Reforestation as a part of Soil Erosion Control— by the Tennessee Valley Authority—Richard A. Wood.....	21
Wake County Survey—T. B. Gardiner.....	26
Thirty-four's Forestry Tour—Walton R. Smith.....	28
The Hill Forest Laboratory—G. E. Jackson.....	31
The Appalachian Trail—Chas. Matthews.....	35
The Forestry Student—Poem	38
In Memoriam.....	39
Alumni Organization and Directory—Geo. K. Slocum.....	40





SNIPS AND SNAPS

Just a peep at some of our enterprising activities to remind us that we did go to college after all, and had a very good time while there.

Upper left: A few of the boys limbering up the surveying instruments so that they would not be held back when they started to work—Bunyans, one and all. By the way, that was a fine survey they made of the roads at Hill Forest! (?) Ask Dr. Hofmann.

Upper right: Mr. Hood is setting up his transit in order to measure Johnney Graves's head. Maybe he used a stadia reading; I don't know, but external measurements would not do this boy justice.

Center: Yes, it's Aiken and a future forester sitting on the steps of the Hill Forest cabin. That fancy lattice work beneath the hand rail doesn't bear out the statement that—"all CCC men all unskilled," does it?

Lower left: Kaler, Oliver, and Stitt sitting on a pile of dirt while their instruments are cooling off. This picture was made somewhere in the wilderness that surrounds Raleigh during an afternoon session of "Wake County Surveying." Maybe you won't believe it, but results so far tend to question the assertion that we haven't enough land in Wake County in forests.

Lower right: Horse-play, but even the horses may have to pitch in and help pay for that range pole their riders are pulling if it breaks.

SENIORS

After four years of scholastic work, these seniors will scatter into many states and unite with different organizations. Not as men conscious of their education will they go, but as men who have incorporated the experience of others to form a foundation for a life study of their profession.

May the following words symbolize their attitude toward their work, their play, and their life with others.

*Let not achievement dull the wit,
Nor honors so blind the eye
That we shall with our laurels sit,
And watch the world go by.*



J. D. Findlay, Sigma Phi Epsilon
Charlotte, N. C.

Blue Key; 30 & 3; Student Council; House of Representatives; Y. M. C. A. Cabinet; Technician Staff; Best Intramural Fraternity Athlete.

F. A. Hodnett, Kappa Sigma,
Chatham, Va.
Old Dominion Club; Forestry Club; Mil. 1, 2.

L. S. Dearborn, "Dearie"
Waverly, Pa.
Forestry Club; Agr. Club; Mil. 1, 2.

C. W. COMFORT, Sigma Pi Alpha,
"Cliff"

ASBURY PARK, N. J.

Pine Burr; Phi Eta Sigma; Wrestling 2, 3; Penn. State Forestry School 1.

W. W. HOOD, Alpha Gamma Rho
BEAVER FALLS, PA.

Scabbard and Blade; Agr. Club; Interfraternity Council; White Spades; Mil. 1, 2, Major 3, Adj. 4.



F. N. NEWNHAM
RALEIGH, N. C.

Monogram Club; Forestry Club; Agr. Club; Golf 1, 2, 3, 4, Captain 2.

F. J. CZABATOR
SHENANDOAH, PA.

Pine Burr; Forestry Club; Agr. Club; Penn. State Forestry School 1.



W. E. STITT, Alpha Gamma Rho
MT. UNION, PA.

Forestry Club; Agr. Club; Technician Staff; Penn. State Forestry School 1.

E. G. ROBERTS
SOUTHAMPTON, PA.

Pine Burr; Forestry Club, Pres. 4; Agr. Club; Penn. State Forestry School 1.





W. E. BOYKIN

CHARLOTTE, N. C.

Alpha Zeta; Mu Beta Psi, Pres. 4; Pine Burr; Quartet 1, 2, 3, 4; Glee Club; Forestry Club, Treas. 3; Agr. Club; Barnwarming Chairman 4; Editor *PI-NE-TUM* 4.

H. R. WRIGHT

HIGHLANDS, N. C.

Forestry Club; Agr. Club; "Most Industrious Senior."



J. B. GRAVES

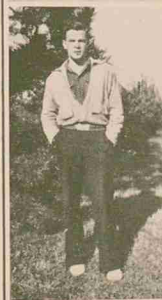
BIRMINGHAM, ALA.

Forestry Club; Agr. Club; Howard College, Ala., 1.

R. H. PAGE

RALEIGH, N. C.

Alpha Zeta; Blue Key; Golden Chain; Forestry Club; Chairman Rolfo, 3; Agr. Club; Editor *Agriculturist*, 4; Editor *PI-NE-TUM*, 3.



W. C. AIKEN, "Bill"

ASHEVILLE, N. C.

Alpha Zeta; Phi Eta Sigma; Forestry Club; Vice Pres. 3; Treas. 4; Agr. Club; Treas. Agr. Fair 4; U. N. C. 1, 2.

G. E. JACKSON, "Eddie"

WAKE FOREST, N. C.

Forestry Club, Pres. 4; Agr. Club; Wake Forest 1.

B. R. KALER, "Red Oak"

MILLMONT, PA.

Forestry Club; Agr. Club; Penn.
State, 1.

J. M. STINGLEY, Alpha Gamma
Rho, "Jim"

WASHINGTON, ARK.

Forestry Club; Agr. Club; Track 1;
Football 1; Wrestling 1.



H. W. OLIVER

PRINCETON, N. C.

Forestry Club; Agr. Club; Mil. 1, 2.

C. C. PETTIT

ASHEVILLE, N. C.

Forestry Club; Agr. Club; Biltmore
College 1.



M. W. SHUGART, "Shug"

YADKINVILLE, N. C.

Forestry Club; Agr. Club.

J. R. SPRATT

MARION, N. C.

Alpha Zeta; Forestry Club; Pine
Burr; Agr. Club; Advertising Mgr.
PI-NE-TUM, 4.





L. H. HOBBS
DELCO, N. C.

Forestry Club; Agr. Club; Football 1.

T. B. GARDINER, Alpha Kappa Pi
"Tommy"
PLAINS, PA.

Pine Burr; Forestry Club; Agr. Club; Phi Kappa Phi; Associate Editor PI-NE-TUM.



J. A. PIPPIN
WASHINGTON, N. C.

Forestry Club; Agr. Club; Freshman Friendship Council; Mil. 1, 2.

J. W. MILLER
ALBEMARLE, N. C.

Forestry Club; Agr. Club.



H. F. BISHOP, "Bish"
CHAMBERSBURG, PA.

Alpha Zeta; Forestry Club; Agr. Club; Business Mgr. PI-NE-TUM 4; Mil. 1, 2, 3, 4, Lt., 4.

O. R. DOUGLASS, "Doug"
LAKE CITY, FLA.

Forestry Club; Agr. Club; Assistant Business Mgr. PI-NE-TUM 4.

APPLIED FORESTRY

By DR. J. V. HOFMANN

The land owned and operated by the Forest School has reached a total of more than 86,000 acres. This land area is divided into three tracts: One in the Piedmont section in Durham County, one in the northeastern coastal plain in Hyde County, and one in the southeastern coastal plain in Jones and Onslow counties.

The Durham County area has been developed with headquarters for class work and laboratory, and the Sophomore summer camp will be conducted on this area. There will be a six weeks camp for the study of dendrology and field work in mapping and surveying. The six weeks camp for the Junior year will be conducted on the large tract of 82,000 acres in Jones and Onslow counties. This camp will be occupied in the study of silviculture, soils, and mensuration. The extensive logging operations that will be conducted on this tract will furnish a fitting background for these particular subjects.

Fire protection organizations for the forest tracts are being developed. A fire tower overlooking the forest in Durham County has been completed. Two fire towers are to be constructed this season for the large land area in Jones and Onslow counties. Two CCC camps will be located on this property for the development of the fire protection plans.

These changes in the curriculum will be effective next year and will bring to the school additional opportunities for taking the forest problems to the field and applying the theory that is taken up in the classroom. The students will have an opportunity to be a part of the actual development of a forestry program, including the land location, reforestation, silvicultural problems, lumbering and all of the phases of marketing and utilization.

In addition to the location of the summer camps as stated there will be opportunity to visit the other forest units for the expansion of the studies made on any one of the units. The dendrology class will also have an opportunity to spend some time in the mountains of western North Carolina in the summer months when the mountain species will be in good condition for the study of dendrology and silvics. This will afford an opportunity to become acquainted with a wide range of species, because the North and South meet in the mountains of North Carolina and a large variety of trees are found there.

SNAKE CHASING

DISCLOSING SOMETHING OF NORTH AMERICA'S FORMIDABLE PIT
VIPERS IN THEIR NATIVE HAUNTS

By RUFUS PAGE, '35

Since 1927 when I first became actively interested in snakes, I have often had occasion to believe that the average man catalogues all reptile enthusiasts as somewhat queer, if not altogether unbalanced. And when a man will wade knee deep through cypress swamps the better part of a day for a single specimen, this criticism may, in part, seem justified. However, the opportunity for adventure that is offered the snake collector, amateur or professional, usually sends him on his way undisturbed by what others may think.

I shall never forget the time when I was forced to leave several specimens of one of the gentlest and smallest of our common North American snakes, the slender keeled-scaled green snake, an entirely harmless reptile that feeds chiefly on insects, at a boarding house in which resided several women of my acquaintance. I left immediately after placing the box containing the reptiles in my room. When I returned I was informed by one of the men that the house was frantic, and that he had been attempting for two hours to locate me. One of the women had got wind of what the box contained, and flinging her hands to high heaven, took the stairs two at a time, screaming all the way. Confining herself to her room, she refused to come out even for dinner. And there she stayed, sobbing audibly, until the cause of the disturbance was far removed. I do not think that, to this woman, I have ever appeared entirely rational since.

Each snake chase offers adventure of a sort, whether the reptile sought is harmless or one of the seventeen venomous species found in this country. Narrow escapes, though infrequent, are occasionally met with. Such was the case when I was spending a week-end at a combined "Y" and Scout camp in company with several friends, repairing the camp for the coming season's use. The site was bordered by a lake and several swamps. When work was over for the day, I usually spent the hour before dark either on the lake or prodding around in the nearest swamp. This particular evening I chose to do the latter, with nothing more in view than a stroll before supper. I located several small moccasins in the course of the walk and was returning to camp with my catch when glancing at the ground I saw a heavy-bodied reptile, inconspicuously marked, cross an open plot just ahead. It was twilight and the reptile blended in well with the grass and dwarf palmetto. With the single glance I

had gotten of him in passing, I guessed the snake to be a swamp black snake, a species more sluggish and not nearly so graceful as our common black racer and, of course, entirely harmless. I lay down my burden and pressed on through the grass in pursuit. The reptile took to a clump of sabal palmettoes and I was forced to stoop and crawl in after to make the capture. I was carrying neither stick nor noose, anticipating no need for a weapon here. At last the snake was cornered and I reached forward to nab it. At that instance, in the dim light filtering through the bush, the snake coiled as quick as a whip—and rattled loudly! It was the dreaded diamond-back, killer supreme of North American reptiles, whose bite usually brings death within the hour! Needless to say it took only a fraction of the time to emerge from the palmettoes that it had taken to follow the snake in. I hastily armed myself with a stick and beat the bush until dark, but was rewarded only by the strong, musky odor so characteristic of the rattler when cornered. I got no further sight of him that evening.

It is in the southeastern section of our country that the largest diamond-back is found. Here sometimes it obtains a length of eight feet, and without exception reaches a greater body weight than any other poisonous reptile in the world. Even the dreaded bushmaster of Central and tropical South America, which grows to be twelve feet long, weighs less than a large diamond-back. The bite of the diamond-back is usually fatal. I knew of a case in Florida where a collector, who had succeeded in capturing two six foot diamond-backs from a cavity near Gandy Bridge, connecting Tampa and St. Petersburg, was bitten on the thumb by one of his captives. He died in less than thirty minutes. I later saw the snake that bit him and can say that the unfortunate collector was lucky to live that long. Frequently dogs, while hunting quail in Florida, are bitten and live but a few minutes.

While I am acquainted with a number of deaths brought about by the bite of the diamond-back, I personally know of but two deaths authentically attributed to its less formidable, but still very dangerous relative, the timber or banded rattler who inhabits the eastern portion of this country from Vermont to Florida. A bite from this reptile brought death to Rattlesnake Joe, who some years ago performed at the State Fair held in Raleigh. He had no doubt developed a certain degree of immunity to the venom of these particular snakes, and capitalized on this fact by allowing himself to be bitten by banded rattlers after they had first been forced to strike a piece of raw beefsteak with pressure applied to the poison sacs. He played the fool once too often, for he succumbed to the bite of a freshly captured specimen in New Jersey at a fair. Either Joe's system wasn't up to par or the snake had not previously injected as much poison into the beefsteak as Joe imagined. It is

interesting to note that Joe always told the credulous public that he forced the snake to strike the beef before striking himself in order that the spectators might be sure he was still in possession of his fangs. The other fatality from a timber rattler with which I am acquainted snuffed out the life of a collector from the American Museum of Natural History. The man, upon being bitten, searched for his partner who was carrying the antivenom. However, the partner was too far away, and the search proved fruitless. He died in great agony. The snake in this case was unusually large, measuring, if I remember correctly, six feet one inch!

The cottonmouth or stumptail moccasin, termed thus because of the pure white lining inside the mouth and the very short tail, lurks in swamps along with other water-loving species, and so a chase after this pit viper always furnishes excitement. I have no trouble in calling to memory a day this past year which was spent in search of these reptiles, and which nearly terminated in a painful experience on my part. The water surrounding cypress knees and hummocks of grass and other vegetation was fairly low, and friends and myself had little trouble making way through this particular swamp which had always netted us such good returns for our trouble. We had bagged several moccasins of medium size when I heard Churchill Bragaw, a native of those parts and thorough nature lover, yell that he had another under control. He was too far away for me to reach him before he bagged the brute, and so I continued my search, stopping only to yell congratulations back. I had not resumed hunting but several minutes when a conspicuously-colored frog on a knoll of ground at the base of a cypress knee attracted my attention. I stooped and reached forward quickly, hoping to capture this amphibian before he could effect an escape. Just as my hand closed on the frog I saw, not eight inches away, a cottonmouth in position to strike. Needless to say Mr. Frog was freed for the moment until, with the aid of a noose, I had the snake safely tucked away inside a burlap bag. The remainder of the afternoon I was most careful to look before placing my hand. Bragaw wades these swamps the year round with pants rolled to his thighs and only light tennis sneakers to protect his feet from roots and snags.

A large cottonmouth can pack a wallop that is to be feared by the bravest. At the camp in Florida previously mentioned, a short, stocky Dutchman was evidently picking oranges in his grove across the lake and swamp from the Camp's mess hall. It was twilight and my buddy had gone to the lake to wash before supper. He was in camp alone at the time. He distinctly heard someone, evidently in great fear and pain, yell for help. Having nothing but an old, leaky scow and an improvised paddle, and dark nearly upon him, Doc was unable to find the man to render assistance. Next morning a searching party was organized when the Dutchman was missed,

and he was found, stiff and swollen, with the fang marks of a snake on one side of his calf and the teeth marks of the lower jaw on the other side!

I very nearly got bit on the thumb by a cottonmouth myself, though it was not as large as the snake in the previous episode.



Native Haunts of the Water Moccasin. Lake Waccamaw by Moonlight.
Photo by Author.

I had chased this particular specimen up and down a cove for half an hour, and had finally succeeded in flipping him upon the bank with an oar. Before I could make fast the boat, he began sidling towards the water, and in an attempt to keep him from escaping, I grabbed hold of his tail, raised the lid of my field cage, and attempted to center the snake over the open door. He reared and missed my thumb barely an inch. I dropped the snake, but my aim was bad and he glanced off the cage door into the river to disappear.

The copperhead, another of our representative pit-vipers commonly found east of the Mississippi from southern Massachusetts to northern Florida, though ounce for ounce of poison is possibly as deadly as the diamond-back, carries much less poison than does the latter, and has appreciably shorter fangs in keeping with the length of its body, which seldom exceeds three feet. This is not, as is commonly thought, an aggressive reptile. I have come near to stepping on several without apparent viciousness on the snakes' part.

At Mr. Shield's camp in Tryon, North Carolina, I examined a copperhead which had been captured under most unusual circumstances. A group of Scouts were in the field one evening when they ran across this snake. Not knowing that it was poisonous, one of the fellows, who was probably used to handling harmless snakes with ease, picked the reptile up and carried it home, kept it all afternoon, and that night took it to Scout meeting. The Scoutmaster, upon seeing the snake, told the boy to place it in a box and then told him what kind it was. Naturally the boy was quite disturbed. When I saw the snake it had been in captivity for three years, and had frequently been changed from cage to cage and had never once proved ill tempered. I have captured a number of these specimens myself, and know that usually they become quite tame in captivity under proper care. Dr. Z. P. Metcalf does relate one death occurring from the bite of a copperhead which, he says, was vividly impressed upon his memory. The incident occurred when he was but a boy. A bride of but several weeks had left her cabin to draw water from the spring, I believe, when she stepped upon a large copperhead and was bitten upon the ankle. Those were horse and buggy days and it required eight hours to return with the nearest doctor. This proved useless, for the bride died shortly after her husband, with the physician, reached her side.

The coral snakes, which are represented by two species in the United States, offer an interesting contrast to the thirteen species of rattlers and the two moecasins found in this country. They are slender, seldom reach a length of over a yard, and are brilliantly banded with red, black, and yellow. The head is no larger than the body and no pits appear between the eye and nostril. They are related to the cobras of another continent, and possess small, permanently erect fangs. In contrast to the pit-vipers, poison from these snakes affects the nervous system, causing paralysis. Of the coral snakes in the United States, the Harlequin is found in south Georgia and Florida, and the Sonorian in the Southwest. Both evince burrowing habits, are temperamental, and can be vicious when minded to. They bite rather than strike, chewing the highly toxic venom into the victim. Because of their short fangs, ordinary clothing will protect a man from their bite. I do not know personally of anyone being bitten by either of these snakes, nor have I ever been in possession of a live specimen of a coral snake.

It is interesting to note superstitions and tales bearing on adventures with snakes, and I close with one typical to the forester, during the relation of which I was an interested listener.

The almost-full moon peeping through the Spanish moss furnished an ideal setting for tall tales. Dawson, the stock 200 pound 3-C's

cultural foreman was an old hand at the game, and dispensing with preliminaries began without the slightest trace of a smile.

"The Boss has a lawyer friend who went home yesterday plumb disgusted. I guess Slime Cass was to blame. Slime had been tellin' the city man about the big rattler he brought home last week and the lawyer told Cass to get in his car, that he had somethin' to show him. Cass spit his cud out and got in. The lawyer headed toward Big Creek and hadn't gone more than a mile from the pier when he stopped, got out, and motioned Slime to follow him. Not more than fifty feet from the car he stopped by a big gum and pointed at a dead rattler layin' at the butt.

"There, I killed that yesterday, Slime Cass,' he said, as if to let Cass know that he wasn't the only snake killer around these parts. And it was a right big snake, too, more than five feet long. Well, Cass went over to the gum and turned the rattler over with his foot and then turned around to the lawyer sort of sorrowful lookin'.

"Uh huh, jest like I thot,' he said.

"What's that?' the lawyer asked him. Cass pointed to a hole in the snake's head, made by a 45 bullet.

"Yer didn't give the critter a chanet. Yer killed him with'a gun, and him so much litter'n you, too.'

"And how do you kill them, Mr. Cass?' the lawyer asked sorta' sarcastically!

"Wall,' Slime drawled, 'When I runs on one uv the varmits, I pokes him with'a stick 'til he gits right mad an' curls up, fixin' to strike. Thin I keeps on poken' at him. Fust thing yer know, he do strike, an' when he do, jus' 'fore he hits me, I coteh him ahind th' neck an' *chokes* th' life outern him. Naw, yer way ain't fair, hit ain't.'

"The lawyer just snorts, turns around and goes back to his car and drives away, with Cass still standin' by the gum tree. Don't know why, but the Boss said his lawyer friend must have thought Cass was just kiddin' him along."

MY HOBBY

By LENTHALL WYMAN

When I was approached by a member of the PI-NE-TUM staff who asked me to cover the subject of my hobby, I thought of the old saying that we are all a bit queer. Now, I thought, folks will really begin to find out some of my oddities.

I wondered if I would list raising white rabbits, intermittent stamp collecting, and chess playing. No! These hobbies were lightly undertaken and as easily dropped. Then what really is my hobby? After submitting this question to myself I have reached the conclusion that it is book collecting; particularly old books on travel, discovery, sports, and forestry.

For years I have harbored a secret and as yet unfulfilled ambition to own a representative collection of old first edition books. I still conscientiously visit second hand book stores and thumb over catalogs and occasionally attend auction sales. Once in a while my will power cracks under the strain and I sink a few dollars in some old item. When I can't afford the original issue of a desirable book I may pick up a more recent edition.

The only justification of this hobby that would vindicate me in the eyes of a practical person is that old, scarce editions in general increase in value as time goes on and are a good investment. There is never any over-production. A few years ago I attended a book auction in New Orleans. Many rare old volumes were bid in by institution librarians and private collectors. I picked up a copy of "The Travels of William Bartram." This book describes in an extremely interesting way the forests, animals, birds, and Indians as Bartram saw them in the southeast about the time of the Revolutionary war. The old fellow was a botanical collector and somewhat of a poet. In fact both Wordsworth and Coleridge are indebted to Bartram for many ideas and expressions it is claimed.

Bartram, in describing the *Franklinier altamaha*, says that he "honoured it with the name of the illustrious Dr. Benjamin Franklin. We never saw it grow in any other place" (other than the Altamaha river)—but "at this place there are two or three acres of ground where it grows plentifully." He collected the only known specimen from which others have been propagated but it has never been found again in a wild state.

In the old North State he describes "the beautiful Lake Wakamaw" and the "seat of government of the county of Cumberland" which was called Cambelton and which in those days boasted "gristmill, sawmill, smithshop, and tavern and twenty habitations." Business has picked up in Fayetteville since the days of 1790.

But let us backtrack another hundred years or so. Last summer I rummaged around an old book store in Boston unearthing a venerable old tome by John Evelyn with the formidable title "Silva, or a discourse of Forest-Trees and the Propagation of Timber in his Majesty's dominions as it was deliver'd in the Royal Society the XVth of October MDCLXII upon the occasion of certain Quaeries propounded to that illustrious assembly, by the Honourable the Principal Officers and Commissioners of the Navy." My copy is the fourth edition, published in 1706.

In this book you can get the latest word in silviculture as known in 1662. Speaking of felling he says, "In this work, cut your Kerfe near to the Ground; but have a care that it suffer not in the fall, and be ruined with its own weight. If any begin to doat, pick out such for the Axe and rather trust to its Successor." And did the "New Deal" of those days put a code on the lumber industry? Listen; "As to what Numbers and Scantlings you are to leave on every Acre, the Statutes are our general guides. In Copp'ces—fell'd at twenty-four years growth, there were to be left twelve standils, or Stores of Oak, upon each Acre."

Apparently every benedict in Germany must have been a forester of parts according to Mr. Evelyn who claims that "—In several places 'twixt Hanaw and Franckfort in Germany, no young Farmer whatsoever is permitted to marry a Wife, till he bring proof that he hath planted . . . a stated number of Walnut-trees, as the Law is inviolably observed to this day. . . ."

I have a few friendly old books which I read over and over again. Often on a hot Sunday in midsummer when I wish I were in the Carolina mountains or the cool north woods I pick up "The Maine Woods" by my favorite naturalist author—Thoreau. This is not strictly ancient literature although it treats of woodland conditions nearly a century ago.

I can cool off any sultry day reading the following description: "What is most striking in the Maine wilderness is the continuousness of the forest, with fewer open intervals or glades than you had imagined. . . . It is a country full of evergreen trees, of mossy silver birches and watery maples . . . the forest resounding at rare intervals with the note of the chickadee—the laugh of the loon, and the whistle of ducks along the solitary streams; at night, with the hooting of owls and howling of wolves; in summer, swarming with myriads of black flies and mosquitoes, more formidable than wolves to a white man. Such is the home of the moose, the bear, the caribou, the wolf, the beaver, and the Indian."

De Soto's Travels, Washington's Diary, Catlin's "American Indians" (1857), "Wild Sports in the South" (1860), and of the contemporary authors, Rutledge's "Days Off in Dixie" are books which

are valued either because they are hard to get or because of the interesting story of things which really happened and conditions which you and I can never see.

Old books are not necessarily expensive, but in choosing them select carefully those which you won't tire of. I recommend for an additional hobby the acquiring of an old rare book on whatever subject appeals to you. Then give your imagination free rein and reap your reward.



PROSPECTIN'

Up the mountin' and thro' the burn
We climbed, and 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.*



THE FORESTRY STUDENT

*The Ag student builds his pig pen,
The pharmacist compounds his pills,
But we roam through the forests
'Neath the pine clad lordly hills.*

*The Aggie can handle his chickens,
The Druggist can palm off his dope,
But we in the fir topped mountains
With Dame Nature's elements cope.*

*The Aggie boasts of his Jerseys,
The Druggist dreams of his "scents,"
But we sleep out in the open,
The pines and cedars, our tents.*

*To him that knows not shall be stated,
And that's why we pen these lines,
To the Aggie, the pharmacist, and others,
Who know not the spell of the pines.*

—*The Montana Kaimin.*

NURSERY WORK AND REFORESTATION AS A PART OF SOIL EROSION CONTROL BY THE TENNESSEE VALLEY AUTHORITY

By RICHARD A. WOOD

CLINTON NURSERY SUPERINTENDENT

Through the use of a specialized form of reforestation the Tennessee Valley Authority is making real progress in checking and preventing further soil erosion within the Tennessee River Basin. Coupled with this is the establishment of a forest cover on eroded areas. In the future such forests will have a high commercial value, though their primary purpose is to protect the TVA's navigation and flood control developments.

To carry out these objectives it is necessary to consider the situation from two angles. The first is the matter of stabilizing the soil on eroded areas by mechanical means until a vegetative cover can be established. Second, the actual establishment of a soil-binding cover is needed. In most cases the latter is done with forest trees.

The rough topography of the greater part of the Tennessee Valley aggravates the soil erosion problems to a considerable degree above that found in most sections. Large portions of the upper slopes have been cleared of timber in the past, and they are farmed or overgrazed. Past agricultural practices have forced the abandonment of many acres of land as their fertility decreased, and often such lands were then left unprotected from the destructive forces of erosion. Such abandonment has meant that more agricultural land became necessary. This was frequently obtained by stripping the steeper slopes of their forest cover, cultivating the cleared area until its fertility was badly depleted, and finally abandoning the land with consequent inevitable erosion. This destructive cycle has continued until it is estimated that 800,000 acres in the Tennessee Basin are in need of treatment.

The erosion control and reforestation program is carried out by the Forestry Division of the TVA through the use of nineteen CCC Camps located in the Valley. Most of the work is done on private land. A contract is signed with each individual owner in which he agrees to care for the plantations, to furnish team for plowing, and to provide available materials for the construction of check dams and fences.

The usual procedure in the treatment of an eroded area is to treat each gully as a single unit. This necessitates a large number of check dams in each water course. The Forestry Division of the

TVA has developed a technique in erosion control which does not follow this method entirely, but instead has developed one of its own. In this newly developed technique a number of parallel gullies are thrown together and worked as one unit. The first step in carrying out this system is the construction of a diversion ditch, with a very gradual slope, near the head of the gullies, running approximately at right angles to them. This ditch is emptied into one of the existing gullies, which is then developed into a permanent water course at either side of the eroded area, or, if this is not sufficient to carry off the surplus water, additional intervening gullies may also be used. These selected water courses are then treated by building check dams to prevent them from being cut deeper and to prevent undercutting of the banks which allows the gulley to widen. The banks of these permanent water courses are sloped so that they can be planted. The banks of the remaining gullies are plowed in to a 1 to 1 slope, no mechanical structures being necessary. Either straw or brush matting is then put on all the sloped banks and wired down with hay wire wrapped around wooden pegs, which are then driven into the ground so that the wire holds the matting flat to the ground.

In order to obtain a quick growth of vegetation on these areas lespedeza is sown under the brush matting. The effect of this operation is considered as purely temporary. The object is to have some means of holding the soil to a certain degree until the trees, which are planted later, are able to maintain a firm grip and prevent further washing.

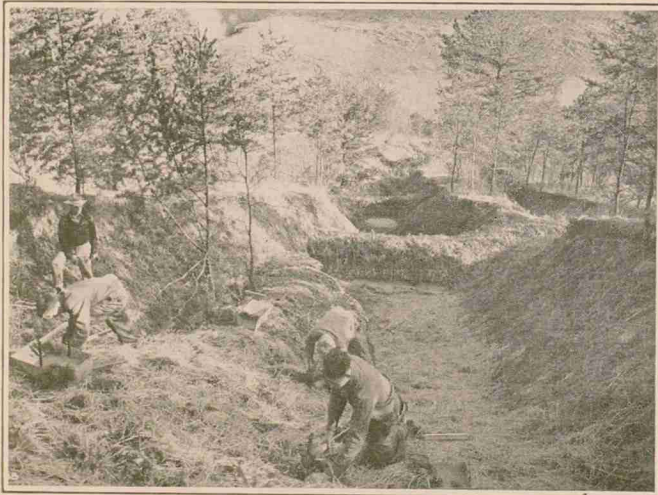
In order to have a permanent and dependable supply of planting stock the TVA has established three nurseries, two for forest trees and one for tree crop trees. One of these, located at Muscle Shoals, Alabama, will have a capacity of 15,000,000 forest trees per year and will serve the area in the lower part of the Valley. The other forest nursery at Clinton, Tennessee, will have a capacity of 25,000,000 trees per year, for use in the upper portion of the Tennessee watershed. The tree crop nursery is located just below Norris Dam on the TVA Freeway. The nurseries were established in November, 1933 and April, 1934. During the past year much time was taken up with the work of developing and improving the nursery sites, and as a result only 5,000,000 odd trees were produced this season.

Each nursery is being set up on a permanent basis. This calls, in the two forest nurseries, for the construction of an adequate overhead irrigation system, tool and implement storage facilities, and a building for grading and shipping with a seedling storage basement underneath. In addition to the above the Clinton Nursery will have a complete seed extracting plant.

For the time being the actual work at the nurseries is being carried on by the CCC's under the direction of the Nursery Superin-



Seed beds of Black Locust at the Clinton nursery; over a million trees are shown here.



Seedlings being planted in a ditch the banks of which have previously been covered with brush matting.

tendents, who are employed by the TVA. At the height of the planting season the whole camp may be needed to carry on; but as the activity decreases the number required becomes proportionately less, with perhaps an average of fifty men being used throughout the year on the forest nurseries, with a less number on the tree crop nursery.

The present nursery production policy calls for the growing of large amounts of black locust, shortleaf pine, Virginia pine, red cedar and pitch pine for forest tree species. Relatively smaller amounts of tulip poplar, persimmon, mulberry, poplar, Asiatic chestnut, walnut, hickory, honey locust, berry bearing shrubs, sassafras, and the various oaks will also be produced. This choice of species, which is explained later, necessarily calls for a wide diversification in nursery practices. All of the above are, however, grown from seed, with the exception of the poplars and some tree crop species, which are propagated by means of cuttings, budding, grafting and layering. There are ten cross-hybridized varieties of the poplars which were developed by the Oxford Paper Co., cooperating with the Brooklyn Botanical Garden of New York City, with the idea of producing a fast growing pulp wood variety.

For the forest trees, the general practice for locust and pines is to prepare seed beds 4x400 feet by means of plowing and raking. Seeding is done with a patented machine, the Hazard Seeder, which in one operation rolls the soil lightly, opens a shallow furrow, deposits the seed, spreads the soil over them, and finally rolls the planted bed more heavily. After this the beds must be properly watered and cultivated until the trees are to be lifted. Weeding is done by hand.

As soon as the dormancy period begins in the fall the trees are lifted by a machine which drags a horizontal blade of steel through the ground at a depth of 6 to 10 inches. This machine was partly developed at the Clinton Nursery. As the seedlings are lifted they are graded according to size and placed in the storage basement until needed for planting. This method of storing seedlings is much more satisfactory than heeling them in outside.

The difficulty of establishing a successful plantation on the seriously eroded lands is obvious. The top layer of soil is usually gone, leaving the exposed sub-soil without any protective vegetation. It is believed that the most scientific approach to this problem is to plant those pioneer species which have the best chance of survival and growth under adverse conditions, and which will at the same time check soil erosion. This accounts for the growing of such species as black locust, Virginia, pitch, and shortleaf pines, red cedar, and persimmon in the nurseries. These, as a whole, are not as desirable as some of the more valuable timber species for timber production; but if they are able to survive and partly restore the

site to a condition more favorable to forest growth, they will have served their purpose. The success of plantations of the more valuable climax species, such as poplar, hickory, walnut, chestnut, ash, and the various oaks on these poor sites, is questionable. However, if the site is "healed" to a certain point by the establishment of a pioneer stand it is reasonable to expect better results from the ensuing forest. On small areas natural reseeding of the climax types is expected under the planted pioneer stand. On larger areas it probably will be necessary to resort to seed spotting or planting of climax species within the pioneer planting. The purpose of this is to provide trees of the climax species, under the pioneer stand, which will ultimately restock the area. Once these are established it will be possible to make a series of selective, improvement, and liberation cuttings which will free the young growth from competition and at the same time yield a cash income from the pioneer stand by such products as posts, pulp wood, and fuel wood.

Another type of planting which is not quite so restricted in application is that on areas which are to be purchased by the TVA. These lands may or may not be seriously eroded. On the better sites it may be considered advisable to establish either pure or mixed stands of the more valuable forest trees, tree crop trees, or a combination of both, with wider spacing than would be practiced on erosion projects.

The TVA program is well under way. Its effects will decrease the silting of the Valley streams and at the same time restore the productiveness of the soil, with its ensuing economic and social advantages to the region as a whole.



Tom, Tom the camper's son
Dropt a match and off he run,
The fire with ease
Burned up the trees
And Tom's in jail a fighting fleas.

WAKE COUNTY SURVEY

By T. B. GARDINER

Dr. Hofmann decided that Wake County, to most of the people living in it, is more or less of a mystery. He came to the conclusion that a good way to remedy this situation, would be to inaugurate a survey of the entire county. This work is done as advanced electives for seniors. It replaces the former thesis, which was a prerequisite for Civil Service Examinations.

In order to get the survey started on a uniform plan, the county was crossed by four lines, originating in the southwest and proceeding in a northeasterly direction. These lines were four miles apart and each line was assigned to one of four crews. The crews started at one end of the line and they really got their first taste of work in Wake County. Most of the country around the southwest end of the county is fairly wild, and it is criss-crossed by so many little country roads that it is very easy to get lost as some of the bus drivers found out, much to their sorrow.

The usual crew consists of four men; namely, a compassman who takes care of the type map, a note-keeper and rear chainman, an estimator, and a growth study man. This system of dividing the work makes things progress much more smoothly than any other system yet attempted. The map is kept on graph paper, with the blocks being five chains long and one chain wide, thus giving very convenient half-acre plots to work with. On every fifth chain, two growth studies are made, and in the recording a sheet is used for every half-acre. The timber is cruised one-half chain on each side of the line, and trees from six inches d.b.h. up are recorded. In typing, to simplify the work, there are only three principle types recognized: mixed, hardwood, and pine. These three types are divided again into reproduction, pole, and merchantable. This work has shown some seniors that dendrology can become rather elusive when it is allowed to lie idle.

One crew possesses a potentially famous inventor. Due to a slight lack of thought, the chain and cruising stick were forgotten. The boys spent half an hour pacing off 33 feet on the roadway and cutting a vine to that length. This substitution for a chain was fine, but the main thing necessary was a horse strong enough to drag it through the woods in front of the compass. The ingenuity of some of the boys would put our well-famed Bunyan to shame.

After a collection of sufficient data, the compilations in the office were started. The maps are used to figure out the area composing each type, and in this way the total amount of land under each type

can be found. When this procedure is followed for each of the four lines a fairly good cross-section of the county will be the ultimate result. The cruise is then used to supply the data for finding the volumes, age, basal areas, number of trees, etc.

All this information makes up the use of the land at the present time. Later on in the project, the crews will go out and establish normal plots. These plots will be as near normal as can be established with the materials on hand, and the very limited supply of funds.

This is not a one-year project, but one that will be carried on by the seniors of next year. The material that is being gathered now is the basic information necessary to start this type of study. At the completion of this foundational study, there will be a sort of census study made. The entire county will have to be surveyed again in order to find out the different kinds of industries and types of employment. The first survey supplies the information necessary to designate the land that should be left for agricultural use, and the land that is better suited to a forestry program. The second survey will include a study of the raw materials, what and where obtained, and also the present and probable future markets. The information derived from both surveys will aid in bringing about a balance between the agricultural and forest land. The idea is to give the farmer a means of acquiring a cash income to buy the necessary things that he is unable to raise on the farm.

This study will give Wake County a comprehensive report of the land use that will be extremely valuable in determining denser settlement areas.



*There was a man
Who fancied that
By driving good and fast,
He'd get his car
Across the tracks
Before the train came past.*

*He'd miss the engine
By an inch
And make the trainman sore—
There was a man
Who fancied that—
There isn't any more.*

Puppett.

THIRTY-FOUR'S FORESTRY TOUR

By WALTON R. SMITH

Of course it was hard to break away from enjoyable studies and spend six weeks traveling around the country attending to Professor Slocum, but Dr. Hofmann would have it no other way. It was necessary for Professor Slocum to get this trip, and the senior class was appointed to keep him from getting homesick, for this was his first sojourn.

April twenty-first was the date and eight a.m. the time. Sorrowful and cheerful adieus were dispensed with and the "Chevvy" took off. Tears gathered in the eyes of our charge but he bravely braced himself, counted his money, and retired to his fate.

Nightfall found us in a tourist camp in Augusta, where a good show and supper topped the evening. After counting his money for the fifth time, the professor retired to his cabin. Poor fellow, we felt sorry for him.

In Cogdell, Ga. we met a jovial Georgia timber farmer, Mr. A. K. Sessoms, who spent nearly two days with us visiting parts of his 100,000 acres of pine timber and turpentine operations.

Mr. W. K. Oettmeier, forester of the Superior Pine Products Co., Fargo, Ga., and former student of Dr. Hofmann, guided us over the operations of that company along the Suwannee River. He has experimented extensively in fire control by radio.

Over the worst state highway in the United States we proceeded to Lake City, Fla. Here we visited the Osceola National Forest, on which Hob Howard is a ranger. Making our headquarters in a large log house on Ocean Lake, we covered the surrounding country, especially interested in the experimental work being carried on in the turpentine industry by The Southern Forestry Experiment Station and the personnel of The Osceola National Forest. It was at the station that we met Mr. Wyman, now associated with N. C. State as forestry instructor. He spent quite a bit of time with us in the field, explaining and demonstrating experimental work being carried on. At the station we examined a model still (turpentine of course) and before the week was over, we felt quite competent to take over the naval stores industry. Mr. Baker, Florida state forester, spent one day with us on private projects and on their excellent state nursery. He believes in foresters growing timber in northern Florida as a private enterprise and has an appealing proposal. Write him for details.

Choctawhatchee is a disturbing name to pronounce, but it stands for an enterprising National Forest in northwest Florida. Snyder,

forest ranger and N. C. State graduate, housed us on the Gulf of Mexico, but we couldn't say just where. While there we found the meaning of a "rut log road." If you have never ridden over one, your education has been neglected. Here, we inspected our first Timber Stand Improvement work where the CCC's were releasing long leaf pine by removing scrub oaks.

Mississippi was covered in one day's riding with Mr. Kimball during which we inspected CCC plantings and other older plantings. They certainly grow large trees fast down there.

At Bogalusa, La., we spent three days in the L. S. U. forestry camp, during which time, Mr. Garrison, of The Great Southern Lumber Company, took us back to the days of Paul Bunyan, when he carried us to the logging operations where Clyde skidders and McGifford loaders were operating. More large scale production was observed in the mill of the company where five band saws are kept hot. Their capacity is one million bd. ft. per day.

At L. S. U., Professor Hayes acted as our host, but the numerous hostesses on the campus received the major part of our attention. We inspected Huey Long's hangout, all thirty stories of it, but decided to skip town when it was learned that he was soon to arrive.

Urania, La., boasts of many oil wells and a real lumber mill. This is Mr. H. H. Chapman's playground and we saw several of his experiments in connection with fire in southern pines. Mr. G. M. Tannehill, vice president of the Urania Lumber Company, covered the country with us and spread a tasty dinner for touring forestry students.

Our minds wavered from forestry at the Rose Inn, Crossett, Ark. School teachers can be the nicest things! It was all we could do to keep the teachers dated so they couldn't get to Professor Slocum.

The Crossett Lumber Company taught us a lot in utilization and economy. We found the latter in their logging operations, where mule power was used altogether. Utilization was close in the manufacture of small dimension stock, especially flooring from scraps.

A side trip to the Hot Springs National Forest was interesting and we went then to the Ouichita, where foresters take off their hat when they pass a white oak tree. Who wouldn't when they are getting over \$23.00 stumpage on it? Stave mill operations keep their spirits high. A hickory handle mill was also visited on the forest.

From Arkansas we jumped to Florence, Alabama and Professor Slocum on seeing Muscle Shoals shouted, "Whoopee!"

Dick Wood, Hafer, and Setzer had the TVA well under control when we reached Knoxville. Characteristically, they jolted us over the worst roads they had, pointed out erosion projects, and eased our confused minds with a fine dinner at Norris, where the employees dine. The afternoon was spent looking over Wood's nur-

sery, which was then in the making. It looked like a whale of a job, but I understand he is making progress.

The Appalachian Experiment Station at Bent Creek, near Asheville, entertained us while we traveled to several interesting points, including The Champion Fiber Company, The Sylva Paperboard Company, and The Biltmore Estate. Too much was seen around Asheville to even try to comment on it.

Just a few miles west of Sylva, N. C. is a valley on the side of the road that might be passed unnoticed if you didn't know that Mr. A. O. Weidlich, president of the Log Cabin Association, resided there. We spent a most enjoyable time with him, inspecting everything from his plantings of Austrian pine to his Finnish baths. It was his opinion that Fred Doerrie should be a French Chef. They discussed many German dishes which sounded very good, but we held out that sausage and grits are hard to beat. Mrs. Weidlich makes excellent coffee and German cake.

On the Nantahala National Forest, Mr. Nothstein, silviculturist, guided us to plantings, tie operations, stove mill, road construction operations, and beautiful scenery. We stayed at Camp N. C. F-9, where this incoherent epistle is being pounded off.

From the Nantahala, we visited the Buck Creek CCC camp, where Jack Blakeny is project superintendent. Mr. Bernier, formerly with the Canadian Forest Service, entertained us at night with gruesome tales about experiences in that service. He took us over the Mount Mitchell State Game Refuge the next day.

After visiting furniture factories at Lenoir, Professor Slocum began to get quite moody and homesick. In spite of our instructions, we gave in and took him back to Raleigh. Six weeks away from home made quite a difference in the old boy, but I understand from good sources that he has about recovered and is again climbing scrub pines on the Hill Forest.



Jack and Jill went up the hill
To get a pail of water,
Put their fire out without a doubt
Which was just as they orter.

THE HILL FOREST LABORATORY

By G. E. JACKSON

The forestry students of North Carolina State College now have a modern field laboratory in which they can take up the practical phase of their study. As anticipated, there is now a summer camp for the sophomores at Hill Forest. Rapid development and the subsequent completion of the dormitory facilities was made possible by the use of CCC labor and a few CWA and FERA relief crews.

Approaching from Durham, the boundary of this 1500 acre forest lies one mile east of U. S. Highway Number 501 and the Quail Roost siding on the Norfolk and Western Railroad. A sand-clay road connects these points with the Hill Forest, and this road together with the truck trails completely opens up the area.

Both Durham and Roxboro are within a radius of 16 miles and offer local markets for some of the forest products.

There are two headquarter buildings located on the west side of Flat River near the double span steel bridge. The main structure is built of logs on a stone foundation and will easily accommodate forty people. Its fifty-nine by forty feet contains five rooms; a large living room, two upstairs dormitory rooms, a kitchen, and an office room. In the living room is a huge fire place built with a double arch of rock, and in the center above the mantle is an old hand millstone. The balcony which encircles the room opens to the roof of the front porch. The porch, its roof, and the balcony are bordered from the floor to the guard rail with a lattice work of pine limbs. Most of the materials used in the construction of this building were taken from the forest.

The logs are chiefly scrub pine (*Pinus virginiana*), and have been treated in order to keep off the attack of fungi and insects. From the front porch, which extends across the north end of the building, one can see Flat River on the right and a recently constructed pond on the left. In front is a valley of rich bottom land which will be developed into an arboretum with an understory of wild flowers and shrubs. The water supply for the house is obtained from a spring. This spring is higher than the base of the house and may easily be piped to the structure. Lighting facilities have not been completed; however, a water-driven dynamo is to be installed below the pond. At the time the dam was constructed a pipe was inserted to supply the water power for such a purpose. The approach to the house is from the South, winding through a grove of pine which has a colorful understory of dogwood, redbud, and red cedar.

A loop was built at the end of the road near the house to facilitate turning and parking.

The other headquarter building is on a truck trail about two hundred yards north of the main structure. It is a New England type of cottage with five rooms and a basement. Between the two buildings is a small pond, created by a dam of rock and cement which supports fourteen feet of water and covers approximately an acre's surface. The head-flow of the pond is supplemented by a stream brought in on a contour from another draw, thus assuring an adequate supply of water at all times. Beside its purpose of supplying power for the generation of electricity and its aesthetic value, this pond will provide the aquatic life of both plants and animals. Below the dam is a forty-man septic tank which is connected to both headquarter buildings.

Within the Hill Forest boundary most of the open fields have been planted with such species as loblolly, short leaf, slash, and long-leaf pine, chestnut, black locust, and red gum. Some of the fields are under cultivation, but these will be planted as soon as students need field work in planting. Permanent plots to determine the best methods of thinnings in various age classes are established; however, much damage was done to these plots by a heavy sleet in February, 1934 and some will have to be re-established.

To assure a continuous supply of pure water on the forest some spring improvement work has been done. The area around the springs was dug out and a rock-concrete foundation was poured upon which was set a concrete tile which forced the water above the surface of the ground.

The tiles were closed and a pipe inserted, thus making it possible to use the water without contaminating the spring.

Since there is a well developed system of road and truck trails, all parts of the forest are accessible. These ten miles of truck trail serve both as roads and fire lines. At the time of their construction, the stands were improved on either side of the trail and undesirable materials were removed. The entire forest is visible from a fire tower located six miles away, and during the five years that the Hill Forest has been under the supervision of the Forest School there has been but two fires on the area. One of these did considerable damage as about forty acres were burned and some cord wood and cedar posts were destroyed. This fire burned over part of one of the compartments previously cut and killed many of the seed trees and most of the young growth. The other fire, which was quickly extinguished, burned less than an acre. Several months afterward there was a dense stand of tulip poplar growing on the area, thereby raising the question as to the possibility of handling poplar by controlled burning in the Piedmont section of North Carolina.

The principal products of the forest are pulpwood, lumber, cord wood, and posts. Clear cutting has necessarily been the practice thus far as in most cases these were pure stands of over-mature scrub pine. Pulpwood is the principal product of this pine. It is cut, peeled, and stacked; and after drying it is loaded and shipped by rail to the Virginia Pulp and Paper Company. Some of these stands run as high as forty cords per acre. After the pulpwood is removed the operation is followed by cordwood cuttings. This gets the slash lopped down to where it takes but a few years for it to decay. It has not been found profitable to produce lumber from scrub pine because of the crooked bole and numerous knots. Some of the other merchantable species on the forest are short leaf and loblolly pine; white, red, and chestnut oak; red gum, walnut, hickory, ash, and red cedar.

The Hill Forest is on the Durham water shed. Flat River runs through the center of the area and Dial Creek runs along the east boundary. In most places the topography is rough and not fit for cultivation. On the forest are many deserted, almost decayed houses which indicates that at one time this area was well settled. These people found the Davidson clay loam soil over most of the area and since it was not very productive, they moved out.

All of the forestry students and many of the students in the other schools find this laboratory an ideal place to carry out field work. While at the summer camp the Sophomores will get work in surveying, mapping, and dendrology, and the Juniors will study silviculture, soils and mensuration. The classes will continue to use the laboratory during the regular school year. Occasionally trips will be made by the Freshmen to get acquainted with general forestry, to do planting work, and to gather specimens for botany and zoology. The Sophomore and Junior class will go there to supplement their summers work. A basic management plan is being worked out by the Senior class, involving a study of logging and utilization on the area.

The forest is an ideal location for a game refuge. It borders the Quail Roost Farm which was at one time used as a private hunting ground by a club of wealthy Durham men. The forest offers the habitat for both the low and *high land* type of game. Abundant food is available in the old fields, in the cut-over area, and from the seed of the forest trees. In spite of the fact that but little protection is offered the game, there is quite a variety there including such wild life as rabbits, squirrel, quail and turkey. In the streams are found round fish, catfish, perch, and carp.

The Hill Forest is handled as a going concern and all forestry students are familiar with activities on the area. From them they learn the technique of handling sales, contracts, lands, and other transactions involving policy.

THE FOREST LOAFER

The Forest Ranger's life is joy,
His days are spent in play,
His weeks are fun without alloy;
His months one happy roun-de-lay,
But just to keep himself in trim
He works a bit each day.

Monday sees a mile of trail
Blocked by a landslide fall.
He mends a couple of bridges frail,
And cuts the grade on the canyon wall.
But aside from putting that trail in shape,
He does not work at all.

Tuesday finds him full of sand,
And clean as a chimney-sweep.
He rides ten miles to the driveway stand
And tallies ten thousand head of sheep.
But seeing this trifling duty done,
He spends the day in sleep.

Wednesday morning some campers came,
Loaded with ignorance, matches, and gall,
Well primed to set the forest aflame,
And burn the timber, straight and tall.
He trailed them 'till they were safe in bed,
But otherwise did not work at all.

Thursday a couple of thieves he caught
Filing fake claims to get the wood.
This day's work almost came to naught,
For they were friends of Senator Goode.
But after the gang was safe in jail,
He loafed, as a ranger should.

Friday he made a timber sale,
With a certified check as security.
He figured the stand by the decimal scale,
And branded U. S. on every tree.
So, while he might have done some work,
He passed the day in ecstasy.

And Saturday, like the rest of the week,
He played at tennis, and golf, and ball.
He shod his pony, cleaned the creek,
Burned some litter, and built a stall.
But generally speaking, the livelong day,
He wrote reports, that's all.

—FRED G. PLUMMER (*The Forest Ranger*).

THE APPALACHIAN TRAIL

By CHAS. MATTHEWS

With the advent of the automobile and its subsequent rapid development in the past fifteen years, broad ribbons of shimmering concrete and oil stained macadam have been gradually penetrating our last wilderness frontiers. Each succeeding year has seen the hum of motor cars and the blatant toot of horns dip deeper and deeper into the solitude of our forests areas.

In spite of this motorized invasion, America has definitely manifest a trend toward a reawakening pioneer spirit. Numerous hiking organizations have sprung up in the United States in the past ten years and rapidly increasing enrollments indicate the rising popularity of this oldest leisure time activity, enjoying nature afoot. The driving impetus of this movement in the East has culminated in the completion of the Appalachian Trail, the longest continuous, marked, wilderness footpath in the world, extending 2050 miles along the Appalachian Mountain System from Maine to Georgia.

Its origin can be traced directly to Benton Mackaye—forester, author, philosopher—of Shirley Center, Massachusetts. Inspired by his philosophy, that a mechanized civilization must be balanced by primeval recreation, Mr. Mackaye presented "The Appalachian Trail, a Project in Regional Planning" in The Journal of the American Institute of Architects in 1921. As envisioned by him, the Trail was 1200 miles long and stretched from Mt. Mitchell in North Carolina to Mt. Washington, respectively the highest peaks in the East; linking wilderness areas suitable for recreation, yet still available to the large metropolitan centers of the Atlantic Seaboard. Later, at the suggestions of others, the present termini were decided upon; Mt. Kathdin in Maine and Mt. Oglethorpe in Georgia, and the intervening distance set at 2050 miles. The article attracted wide spread attention and hiking units along the proposed route sent representatives to the first meeting of the Appalachian Trail Conference held in Washington, D. C. in 1925. The conference was organized and incorporated, and a constitution adopted uniting the various clubs



Monogram Marker of
Appalachian Trail

and groups along the proposed route loosely under one controlling body for the construction and maintenance of the trail, and allocating the work among the organizations whose territory it traversed. A governing board was appointed including a member from each club and a representative from both the U. S. Forest Service and Park Service. Work was begun immediately. The route was scouted out and reported and construction work started in territories where clubs were located. In areas not assigned to a unit, it is interesting to note that the trail always went first and the organization followed. In spite of several serious setbacks, and through the timely aid of the late Mr. Arthur Perkins, a retired lawyer of Hartford, Conn., who was appointed to fill a vacancy on the board at a time when interest was at a low ebb, and who through his enthusiasm and efforts put new hope into workers' hearts, the trail lengthened year by year. From 1928 on the progress was rapid and in the summer of 1933 the final marker was placed on Kathdin. In the short span of thirteen years this 2050 mile crestline footpath had become a reality, a living monument to its conceivor and a tribute to those persons whose efforts made it possible.

Generally speaking, the trail runs in a southwesterly direction following the backbone of the main Appalachian System. From Mt. Kathdin, a massive, granite, monolith and fitting terminus for such a path, it leads south through the heart of the Maine wilderness, over the disconnected series of peaks to the New Hampshire Line. Traversing the White Mountains it turns west, strikes the Green Mountains of Vermont, and proceeds south to the Berkshire and Taconic ranges of Massachusetts and Connecticut, eroded remnants of a once lofty range. Crossing the Hudson River at Bear Mountain, it penetrates the Palisades Park and then closely parallels the New York-New Jersey Line to the Kittatinnies. At the famed Delaware Water Gap, a strategic point in the early Colonial History, it strikes the front range of the Alleghenies. Near Harrisburg, Pennsylvania, the trail drops from the Alleghenies, crosses the Cumberland Valley by secondary roads, and enters the Blue Ridge, following this narrow crest through Maryland and Virginia. In southern Virginia the Blue Ridge splits into two forks, sometimes 100 miles apart, coming together again near Springer Mountain in Georgia. The eastern rim of the Blue Ridge is utilized till the New River is reached, when it crosses the plateau to the western rim at Iron Mountain. The trail leads south through the "Smokies" and crosses to the eastern rim again at the southern end of the Smoky Mountain National Park by the Nantahala Mountain Range and proceeds south to the abrupt end of the Blue Ridge Chain, the densely forested, gently sloping Mt. Oglethorpe in Georgia. In our own State, the trail traverses portions of Pisgah, Unaka, and Nantahala Forests.

As can be seen from the route, every effort was made to locate

the trail along the crest of the eastern ranges in strictly wilderness areas and through stretches that bring out the characteristic charm and beauty of that section.

The route is well marked with small, usually white blases, though in some localities the color may differ. In addition, at frequent

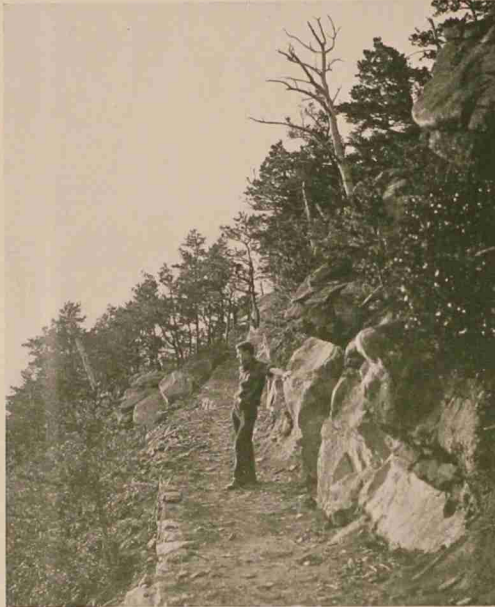


Photo by A. G. Roth Engraving from "The Military Engineer"

Rocky Spur Trail—On Side of Mt. LeConte

intervals will be found the characteristic, galvanized, diamond shaped, metal monogram bearing the insignia "A-T, Maine to Georgia." Small signs along the path indicate the presence of springs, important viewpoints, and distances. Along with the construction of the main A-T, a side trail system has been developed leading to picturesque spots such as viewpoints, wild flower areas, gorges, waterfalls, rugged areas, and other points near the main trail.

As previously stated, each section is under the supervision of the club in its locality and all collectively under the Appalachian Trail Conference. In North Carolina, The Carolina Mountain Club, The Smoky Mountain Hiking Club, The Nantahala Appalachian Trail Club, maintain respectively, the northern, central, and southern portions of the trail through this state. The construction and maintenance of this master project has been entirely through the tire-

less efforts of amateur club members bound together by their common love of the out-of-doors. The membership is mixed, and for the most part made up of professional persons varying in age from nineteen upwards. The members who during the week days may be found in the offices of our large eastern cities, will be found, on holidays, week-ends, and during vacation periods, on the trail; a nondescript bunch skilfully wielding shears and axes, or perhaps singly or in groups hiking along the trail.

With the completion of the main trail, clubs are turning to new lines of endeavor in making the path more useful to nature lovers. First, always, must be the maintenance and improvement of the main project. There are plans for the construction of log or stone shelters at intervals of a comfortable day's walk. In some sections, particularly New England, this goal has been reached. An intricate side trail system is being developed, but is still in its infancy. The entire length of the trail will be covered by a series of five guide books, all but one having already been issued. The historic spots and legends along the trail have been compiled and are presented to the public in the form of illustrated lectures.

Such a magnitudious project as this, with the resulting interest it has aroused, has a place in our forestry and conservation program. It is putting the forest and wilderness areas before the public, which is a prime requisite in establishing a forestry program in America. Mr. Smith, State Forester of South Carolina at a recent convention stated that a rapid and efficient method of acquiring forest lands is to emphasize their recreational value. In New York and Pennsylvania this has already been demonstrated very successfully. In addition, club members and newcomers who use the trail are continually obtaining first hand glimpses of forest operations and becoming acquainted with the workings and administration of this department. They are learning the essentials of woodcraft, prevention of fire, and the preservation of wild life. With the rapidly increasing memberships and the publicity derived from this group and other allied groups, it is only a matter of time before the appreciation of nature and its conservation will become widespread. The forest service particularly deserves a great deal of credit for their coöperation in the construction and maintenance of this trail through their preserves. In the past two years they have rebuilt according to their standards several hundred miles of trail and constructed shelters along the lengths, using CCC help.

A statement from a recent issue of the *American Forests* sums up the character of the Appalachian Trail; "Its successive changing zones of bird, animal, and plant life fascinate the traveler. It is indeed a guide to the study of nature. Remote for detachment, narrow for chosen company, winding for leisure, lonely for contemplation, the Trail leads not merely north and south but upward to the body, mind and soul of man."

IN MEMORIAM

Faculty—October, 1934

JOHN SUMMIE WHITNER—Associate Professor of Sanitary Engineering, Instructor in Surveying—B.E. and M.S. at North Carolina State College. American Society of Civil Engineers, American Water Works Association, Secretary-Treasurer of both the North Carolina Engineering Council and the North Carolina Society of Engineers, Board of Control of the Federation of Sewage Works Association representing North Carolina, and member of Raleigh Engineers Club.

Not only a fine instructor, but a friend to everyone.

Alumni—November, 1934

MAX C. WHITESELL, '33—The first of this group to go. A man of fine qualities in whose presence one felt the comforting atmosphere of true companionship.

ALUMNI ORGANIZATION

By GEORGE K. SLOCUM

The Alumni Association of the Forestry School of N. C. State College has at last been organized, officers have been elected, and we are now ready to go ahead, and, as an organization, do something constructive. In the election of officers, Tom Evans "30" was elected President and George Slocum "31" Secretary-Treasurer.

The forestry students are eligible, or I might say considered members automatically, upon graduation. We look forward each year to adding a new bunch of fellows to our group. One purpose of our organization is to keep our graduates in touch with the doings of each other through the News Letter. This letter is put out annually and contains things of interest, I hope, to our graduates.

When you see the marks some of our Alumni have made in the forestry field, it will be an incentive to go out and do like wise, so when you undergraduates leave the old school don't forget to enter in and be a real Alumni of the N. C. State Forestry School.

ALUMNI DIRECTORY

CLASS OF 1930

Barnes, W. B.....	E. C. W. Camp S-76, Ferdinand, Ind.
Bittinger, C. A.....	E. C. W. Camp S-107, Scotland, Pa.
Brown, G. K.....	Dickey Ranger Station, Dillon, Colo.
Chancee, E. R.....	Sun Oil Co., Marcus Hook, Pa.
Evans, T. C., Sou. For. Exp. Sta.,	348 Baronne St., New Orleans, La.
Harding, N. R.....	Dist. Forester, Panama City, Fla.
Hile, S. G., Dept. Highways,	McClutchy Bldg., 69th and Market Sts., Upper Darby, Pa.
Howard, H. H.....	Olustee, Fla.
Leader, J. N.....	E. C. W. Camp 96, Hillsgrove, Pa.
Morris, D. J.....	Sumatra, Fla.
Pierce, R. L., Monroe County Dept. Highways,	851 Scott St., Stroudsburg, Pa.
Posey, H. G.....	U. S. F. S., Brookhaven, Miss.
Snyder, H. A.....	U. S. F. S., Camp Pinchot, Crestview, Fla.
Walters, J. W.....	Point Pleasant, Pa.
Weight, F. F.....	Camp P-52, Emlyn, Ky.
Zizelman, C. B.....	115 West Broad St., Tamaqua, Pa.

CLASS OF 1931

Alter, B.....	U. S. F. S. Box 39, Etowah, Tenn.
Altman, H. E.....	E. C. W. Camp, Cass Lake, Minn.

Artman, J. O.	T. V. A., Knoxville, Tenn.
Barner, G. W.	Mifflinburg, Pa.
Brunn, J. A.	CCC Camp Chiipoewa Nat. Forest, Cass Lake, Minn.
Buhrman, W. T.	E. C. W. Camp S-70, Waynesboro, Pa.
Cartwright, J. B.	U. S. F. S., Camp N. C. F-19, Highlands, N. C.
Foreman, H. A.	CCC Camp 94, Edgemere, Pike County, Pa.
Griffin, D. B.	Conservation Commission, State House, Charleston, West Va.
Loughead, H. J.	U. S. F. S., 223 Federal Bldg. Asheville, N. C.
Phelps, C. F.	Colonial Nat. Monument, Yorktown, Va.
Shafer, C. H.	G. M. M. Nat. Park, Newport, Tenn.
Slocum, G. K.	N. C. State College, Raleigh, N. C.
Ward, W. B.	E. C. W. Camp 52, Wells Tannery, Pa.

CLASS OF 1932

Cooper, W. E.	Camp S-136, Galeton, Potter County, Pa.
Grumbine, A. A.	Sumatra, Fla.
Kerst, J. J.	U. S. F. S., Box 47, Holly Springs, Miss.
Maxwell, A. H.	U. S. F. S., Camp F-4, Marion, N. C.
Miller, F. J.	Clayton, N. C.
Royer, C. G.	Camp S-82, Waterville, Pa.
Schaeffer, G. K.	U. S. F. S., Damascus, Va.
Tillman, P. W.	U. S. F. S., Flagstaff, Ariz.
Warriner, W. H.	Camp Ga. F-6, Clayton, Ga.
Williams, L.	R. F. D. No. 3, Monroe, N. C.

CLASS OF 1933

Blakeney, J. C.	Buck Creek Camp F-4, Marion, N. C.
Clark, W. J.	Sou. For. Exp. Sta., 348 Baronne St., New Orleans, La.
Croker, T. C.	U. S. F. S., Ivey, Tenn.
Hafer, A. B.	T. V. A., 610 Arnstein Bldg., Knoxville, Tenn.
Riley, M. M.	Appalachian For. Exp. Sta., Asheville, N. C.
Pettigrew, G. W.	CCC Camp F-3, Palace, Mo.
Setser, A. L.	241 Daylight Bldg., Knoxville, Tenn.
Wood, R. A.	Clinton, Tenn.

CLASS OF 1934

Barker, W. J.	Camp S. C. F-1, Mt. Rest, S. C.
Chatfield, E. E.	Camp S. C. F-1, Mt. Rest, S. C.
Corpening, B. H.	Camp Ga. F-6, Clayton, Ga.
Crow, A. B.	U. S. F. S. Camp F-11, Ellsinore, Mo.
Doerrie, F. A.	315 Elmwood St., Apt. 101, Providence, R. I.
Hairr, L. B.	Soil Erosion Service, Wadesboro, N. C.
Hube, F. H.	N. C. F-A, Highlands, N. C.
Plaster, D. C.	Soil Erosion Service, High Point, N. C.
Prout, C. T.	Woodward Hotel, Louisville, Miss.
Shugart, A. G.	S. C. F-2, Walhalla, S. C.
Smith, W. R.	Camp S. C. F-1, Mt. Rest, S. C.

Autographs

STUDENTS SUPPLY STORE

"Everything for the Student"

SCHOOL SUPPLIES

**Textbooks, Drawing Materials, Gifts
College Seal Novelties**

FOUNTAIN
SERVICE

SPECIAL ORDER
SERVICE

On the Campus—N. C. State College

WEST VIRGINIA PULP and PAPER COMPANY

230 Park Ave., New York 35 E. Wacker Drive, Chicago, Ill.
Public Ledger Bldg., Philadelphia, Pa.
503 Market St., San Francisco, Calif.

English Finish, Supercalendered and Machine Finished

Book and Lithographic Papers

**Offset envelope, bond, writing, mimeograph, ledger, cover and
music paper, index bristol, post card and label papers.**

**High grade coated book and Kraft wrapping—
Kraft envelope. Also bleached spruce
sulphite soda and Kraft pulp.**

Daily Capacity Over 1400 Tons of Pulp and Paper

Mills: Mechanicville, N. Y., Tyrone, Pa., Luke, Md.,
Williamsburg, Pa., Covington, Va., Cass, W. Va.

DILLON SUPPLY COMPANY

**MILL SUPPLIES
ROOFING**

**Myers Pumps
Machinery for Every Purpose**

RALEIGH AND DURHAM

THE CHAMPION FIBRE COMPANY

of

CANTON, NORTH CAROLINA

MANUFACTURERS OF:

**Wood Pulp : Paper : Tannin Extract
Turpentine**

We recognize the value of forests, not only as the source of raw material for our own and other industries—but also for their contribution to the general welfare through protection to soils, to wild life, to water supply, and to scenic beauty.

● From Alaska to Maine,
Over the Broad Ex-
panse of Canada and to
Many Foreign Coun-
tries Has Spread the
Fame of

FILSON Better Outdoor CLOTHES

Foresters, Hunters, Fisher-
men and Outdoor Lovers
have told the story of the
virtues—the comfort, con-
venience and long wear—

of these splendid garments. You, too, can experience the same
pleasure and satisfaction that so many now enjoy. **Filson
Better Outdoor Clothes** are inexpensive, quality and service
considered.

Cruising Coats and Laced Breeches in Forestry Cloth (wool,
cravanetted) or in Khaki; Woolen Shirts, Mackinaws, Hiking
Boots or Paes and many other outdoor requirements are de-
scribed in our illustrated catalog. It's free. Send for a copy
today.

Wear **Filson Better Outdoor Clothes** and know keenest enjoy-
ment in any outdoor calling.



C. C. FILSON CO.

2d at Madison

Seattle, Wash.

**AXES AND LOGGING TOOLS OF EVERY
DESCRIPTION**

Highest
Quality



For Past
Half
Century

WARREN AXE & TOOL CO.

WARREN, PA., U. S. A.

Old Mother Tourist went to the forest
On an outing for her and her pup,
But when she got there, the forest was bare,
In smoke all the trees had gone up.

A Negro was telling his minister that he had "got religion."
"Dat's fine, brothah; but is you sure you is going to lay aside sin?"
asked the minister.

"Yessuh. Ah's done it already."

"An' is you gwine to pay up all yoh debts?"

"Wait a minute, Pahson! You ain't talkin' religion now—you is
talkin' business!"

CAROLINA HARDWARE COMPANY

RALEIGH, N. C.

QUALITY HARDWARE
and Tools

233-35 S. Wilmington St.

Phones 233-2506

BARTLETT TOOLS
 have a world-wide reputation for quality, and in these days of reforestation good tools are in demand more than ever before.

BARTLETT TREE TRIMMERS
 have been specified by the most particular foresters for the most trying work. Write for catalog showing a full line of pole pruners, hand saws, pole saws, tree paint, lag hooks, tree rod, safety tree belts, etc.

BARTLETT MFG. CO.
 3074 East Grand Boulevard Detroit, Michigan

How many remember “Red Oak” Kaler losing his lunch three days in succession at Hill Forest on the Stem Analysis trips?

And how about the sick feeling we had when Prof. Wyman pulled the yellow quiz paper out of his pocket ten minutes before the whistle.

“Are they very strict at your college?”

“Huh! Are they? Why, when a man dies in a lecture there they prop him up until the end of the hour.”

PAHDON THE SOUTHERN ACCENT

Gas Station Man—“How’s your oil?”

Fresh Freshman—“Fine. How’s yo’ all?”

A parson with a sense of humor has just put up a sign in his church: “No mistakes rectified after leaving the altar.”

Nothing is done artistically until all suggestion of hard work has been eliminated.

The Timberman

AN INTERNATIONAL LUMBER JOURNAL

623 S. W. Oak Street

PORTLAND, OREGON



Specializing in the publication of technical,
permanently valuable articles on

LOGGING

LUMBER MANUFACTURE

LUMBER UTILIZATION

FORESTRY

LUMBER MARKETING



An aid in school . . . an aid in after life . . .

Get the habit early!

MAKERS

...of...

**Special and Standard Tools and
Implements for the Forester,
the Turpentine Producer
and Lumberman**

**FIRE RAKES : SWATTERS : HOES
BUSH HOOKS : AXES
PLANTING IRONS**



**THE COUNCIL SEEDLING LIFTER
AND TRANSPLANTER**



We invite suggestions and ideas for developing special
tools and equipment for Forestry.



THE COUNCIL TOOL CO.
WANANISH, N. C.



*I cannot soon forget a wooded trail,
Each shadow blending into patterns rare;
The memory of the birch, the twisted oak,
The tall, straight pine, the beech that greets
me there.*

*When life, in sterner mood, brings trouble
hours,
The peace of trees along a shaded way,
Is mine to call to heart when'er I will,
Is promise of a calmer, gentler day.*