

JOURNAL
of the
SCHOOL OF FORESTRY
North Carolina State University
at Raleigh

1965

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# The PINETUM

Annual Publication
of the
Forestry Club
North Carolina State University
at Raleigh



VOLUME 31 1965

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#### Pinetum Staff



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# Foreword

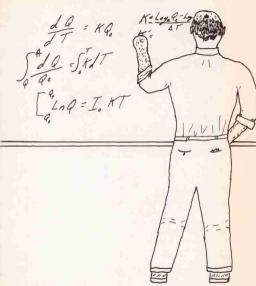
It is with pride and pleasure that we of the Pinetum staff present this issue to the students, faculty, and alumni of North Carolina State University. This year we have tried to emphasize the endless variety of work that one may find in forestry. From the pine forests of the South, to the Peace Corps Volunteer in Peru, to the nose cone of a Polaris missile, forestry plays a vital role in today's world.

# Dedication



We take great pride in dedicating this issue of the PINETUM to Mrs. Margaret Frances Liles. Since 1954 she has been friend, counselor, advisor, and confidant to each succeeding class. Her devotion, unfailing cheerfulness, and constant concern for the solution of all student problems far beyond the limits of her professional duties earns her our heartfelt thanks and this small token of our esteem for her.

# FACULTY



In Your Heart, You Know Its NORMAL



# C. Earl Libby

On May 26, 1964, Professor Libby died at his retirement home in Pompano Beach, Florida at the age of 71. He joined our faculty in 1952 after retiring from the faculty of the New York State College of Forestry where he organized the Pulp and Paper Curriculum in 1920 and headed this most successful undergraduate school of Pulp and Paper Technology for 32 years.

Here he repeated his performance by organizing our curriculum on the same pattern that has been so productive at Syracuse. Men who graduated under him during his long career there are now top executives in mills all over the United States. Here in the Southeast they rallied to his support by the formation of our Pulp and Paper Foundation which now contributes \$75,000 per year in support of our program. This support, added to the prestige of C. E. Libby, quickly attracted a student body equal to one-fourth of the entire School of Forestry.

In 1953 he was appointed Reuben B. Robertson Distinguished Professor

of Pulp and Paper Technology.

The Technical Association of the Pulp and Paper Industry honored him by making him TAPPI Medalist in 1962 and the Paper Industry Manage-

ment Association made him a Life Member in 1960.

The recitation of his honors and achievements can be tedious but all can agree that his greatest contribution was his teaching of young men. Although he left two daughters, Jean and Carol, he had no sons of his own. He seemed to adopt every student under his care and seemed as concerned with character building as with the establishing of technical understanding.

He believed that hard work was good preparation for life and, in consequence, his students were overloaded by ordinary academic standards.

He was a strict disciplinarian in enforcing deadlines and rules of conduct. He built integrity.

He followed the careers of his graduates and was always helpful in providing greater opportunities or finding efficient help.

He left an emptiness in the hearts of his many friends and left the world a better place in which to live.



Dr. R. J. Preston, Jr.

Dean of the School of Forestry and Professor of Forestry
A.B., M.S.F., Ph.D., University of Michigan

Dr. J. V. Hofmann Director Emeritus and Manager North Carolina Forestry Foundation B.S.F., M.F., Ph.D., University of Minnesota





Dr. WILLIAM D. MILLER
Professor Emeritus of Silviculture
A.B., M.F., Ph.D., Yale University

LENTHALL WYMAN
Professor Emeritus of Forest
Utilization
A.B., M.F., Harvard University



# Department of Forest Management

DR. T. E. MAKI

Schenck Professor of Forest Management and Department Head B.S., M.F., Ph.D., University of Minnesota



DR. R. C. BRYANT

Professor of Forest Management
B.S., M.F., Ph.D., Duke University

Dr. John W. Duffield Professor of Silviculture B.S., M.F., Ph.D., University of California





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B.S., M.S.F., Ph.D., North
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ROBERT L. McElwee Geneticist B.S.F., M.S., North Carolina State University

DR. GENE NAMEOONG
Assistant Professor of Forest Genetics
B.S., M.S., Ph.D., North Carolina State University





DR. T. O. PERRY
Associate Professor of Forest
Genetics
B.S., M.A., Ph.D., Harvard
University

DR. BRUCE J. ZOBEL

Edwin F. Conger Distinguished Professor of Forest Genetics B.S., M.F., Ph.D., University of California



# Joint Appointees in Forest Biology



DR. ARTHUR W. COOPER Associate Professor of Botany and Forestry B.S., M.S., Ph.D., University of Michigan



DR. CHARLES B. DAVEY
Professor of Soil Science
and Forestry
B.S., M.S., Ph.D., University
of Wisconsin

DR. MAURICE H. FARRIER
Professor of Forest Entomology
B.S., M.S., Ph.D., North
Carolina State University



DR. JAMES W. HARDIN

Associate Professor of Botany and Forestry
B.S., M.S., Ph.D., University
of Michigan

DR. ARTHUR KELMAN
Professor of Forest Pathology
B.S., M.S., Ph.D., North
Carolina State University





Dr. L. C. SAYLOR

Assistant Professor of Genetics and Forestry
B.S., M.S., Ph.D., North
Carolina State University



"That's right. Bring me one carton of 16 oz. Pepsis, two pounds of cheese, five pounds of peanuts. . . ."

# Department of Wood Science and Technology

Dept. of Wood Science and Technology Head B.S., M.S.F., Ph.D., Yale University



Dr. A. C. Barefoot

Associate Professor of Forest Utilization
B.S., M. Wood Tech., D. F.,
Duke University

ROY M. CARTER

Professor of Wood Technology
B.S.F., M.S., Michigan State
College





HILLARD D. COOK

Assistant Professor of Pulp and Paper Technology B.S., Massachusetts Institute Of Technology

DR. C. A. HART

Associate Professor of Wood
Technology
B.S., M.S., Ph.D., North Carolina State University





R. G. HITCHINGS

Associate Professor of Pulp and Paper Technology M.S., M.F., Duke University





CHESTER J. LANDES

Assistant Professor of Pulp and Paper Technology B.S., Ch.E., Ohio State University



JAMES T. RICE

Assistant Professor of Wood Technology B.S., M.S., Ph.D., North Carolina State University

DR. A. J. STAMM

Professor of Wood Chemistry
B.S., M.S., Ph.D., University
of Wisconsin





RICHARD J. THOMAS

Assistant Professor of Wood Technology B.S., M. Wood Tech., North Carolina State University



Dr. Stanley K. Suddarth

VISITING PROFESSOR OF WOOD TECHNOLOGY

Dr. Stanley K. Suddarth, Professor in charge of the Wood Research Laboratory at Purdue, is a visiting professor on sabbatical leave at N. C. State from July 1, 1964 until July 1, 1965.

Dr. Suddarth received his degrees from Purdue which include a B.S. in forestry, an M.S. in mathematics, and a Ph.D. in agricultural economics, with undergraduate and postgraduate work in structural engineering. It is believed that Dr. Suddarth is the only licensed structural engineer in forestry at the present time.

Dr. Suddarth is married and has a boy 5 and a girl 8. He was in the Pacific with the Marine Corp during World War II as a radar officer.

While at State, Dr. Suddarth has been working with Dr. Benjamin Jayne on Office of Naval Research to develop a non-destructive test for the plywood nose cone used on the Polaris Missiles.

Last year, Dr. Suddarth won the American Lumber Industry Award for Applied Research for 1964. He received the award for his work on the engineering design of wood trusses, including the production of automatic computer programs handling the design, and for his work on the non-destrictive testing of wood.

In the last ten years he has published approximately 15 bulletins primarily on engineering uses and applications of wood.

Dr. Suddarth plans to return to Purdue where he will continue his work as co-author with Dr. Jayne on a book entitled *Mechanics of Fibrous Material*.

# Staff



ROBERT C. GILMORE
Superintendent Wood Products Laboratory
B.S., M. Wood Tech., North
Carolina State University

# K. O. SUMMERVILLE

Staff Assistant in charge of Greenhouse and Field Work B.S., North Carolina State University









"Mac" McLaurin



Edith Rose



Mrs. Frances Liles



Miss Hazel Adams



Mrs. Margaret Motley



Mrs. Dorothy Honeycutt PULP & PAPER



Elga Filton PHYSIOLOGY



Ann Law Nancy Roberts Wood Science and Tech.



Dell Cuningham

# GENETICS



Miss Cicely Brown



Mrs. Judith Faircloth



Mrs. Martha Holland

# HARDWOOD RESEARCH

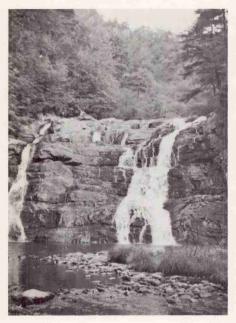


Mrs. Leigh Goss Mrs. Martha Matthias



Mrs. Sharon Usanis Mrs. Pat Kennedy

# SENIORS



#### Seniors



#### LAURENCE GAILLARD ALTMAN, JR.—Georgetown, S. C.

Pulp and Paper Technology-Chemical Engineering Newman Club, Fourdrinier Society, Sigma Pi (Secretary, Athletic Director), Pulp and Paper Foundation Scholarship.

Known to everyone as Laurie, he has a very pleasant disposition for someone who had to walk a lot. Plans to work for I.P.Co. in his hometown for the summer. He will be coming back next year for his Chemical Engineering degree.



#### WILLIAM M. ARDREY-Pineville, N. C.

Forest Management

Farmisus Prarily (Vice Pres.), Forestry Club, Farmisus Prarily Foresters.

Phanton Foresters.

"Phanton" is the kind of fellow that can really collect the minus "brownies", with Bill's good nature he will probably accomplish a lot if he can stay out of Hill Forest Pond and the "Top Hat."



#### COLIN BAGWELL-Knoxville, Tenn.

Forest Management

Society of American Foresters, Society for the Preservation of Barbershop Quartet Singing in American Transferred from Tennessee Wesleyan College and University of Tennessee. B.S. in Biology from Wesleyan in 1963.



#### BENNETT RAY BAIRD-Raleigh, N. C.

Pulp and Paper Technology

Alpha Zeta, Xi Sigma Pi (Associate Forester, 64-65), Pulp and Paper Foundation Scholarship, Crown Zellerbach Award, Fourdrinier Society (Treasurer).

The only time that Bennett was ever depressed was after one of Prof. Hitching's finals. Almost retired after his senior year because he couldn't decide whether to work or go to grad. school and finally decided to work on his masters here at State.



#### GENE GARDNER BARNES-Stedman, N. C.

Forest Management

Gene's quiet manner makes him a very likeable fellow. Married life seems to have treated him well.



# HERSY GRANT BASHAM-Lynchburg, Vo.

Forest Management

Forestry Club, SAF, Lambda Chi Alpha, Student Government, Tutorial Project, Alderman-McKim-

mon Village.

Married life has really helped to pull Basham
through. With renewed effort and willing mind,
Grant is ready and able to take the future in
stride.



#### PAUL JERRY BONARDI-Sanford, N. C.

Forest Management

Paul is one of the married boys in the management class and comes all the way from Sanford each morning so that he can run around in the woods with the rest of us. Paul is the quiet type and just stands around and watches in awe at his colleagues as they "lime sock the hell out of each other."



#### 

Pulp and Paper Technology

Xi Sigma Pi, Fourdrinier Society, PIMA Scholarship Award.

Known as "Willie" to his closest friends and Bill to everyone else. Became well known for his prowess on the basketball court. Going to work for Ecusta Paper and Fibert Operations in Brevard, N. C.



### WILLIAM BARR BROOKS-Richmond, Va.

Forest Management

Alpha Zeta (Book Exchange Chairman), Xi Sigma

Pi. Forest Club (Past President).

"Homer" is one of the more "couth" members of the senior class. Among the more noted activities of the "Virginia Gentleman" are shooting at guineas. getting embalmed while embalming, and a love for Greek dishes. Should go far if he can overcome his small problem.



#### ROBERT ARNOLD CATHEY-Canton, N. C.

Forest Management

Forest Club (Social Committee)

"Maggot". Dr. Perry's favorite, has participated in many extracurricular activities, one of the most notable being shower room activity at Kinston Fire School. Bob cares for wildlife and nightlife of all

sorts.



#### WILLIAM GEORGE CHANDLER-Arlington, Va.

Forest Management

Forest Club, SAF

Bill is one of the boys who almost is a yankee, but not quite, so we still claim him. One of Dyson's favorites, Bill is studying hard and still running up and down the stairs over at the apartment trying to do a mense problem and smoke and joke with the girls down stairs at the same time.



#### EARNEST CALVIN CLARK, JR.—Stanley, N. C.

Pulp and Paper Technology

Alpha, Phi Omega, (Corresponding Secretary), Student Government (Senator and secretary) of Academic Affairs Committee), XI Sigma, Ph., Fourchmier Society (Program Chairman), Pulp and Foundation Scholarship, Gamma Sigma Belta There is no doubt in anybody's mind that Calvin will be a mill manager someday. Plans to work for Container Corporation in Pernandina, Plans



#### PHILLIP GEORGE CLEGG-Durham, N. C.

Forest Management

SAF, Arnold Air Society, Area Staff AFROTC Wing Operations Officer, Distinguished Military Student Award, Flight Instruction Program, Track-Intramurals.

Clegg is the only genuine flying forester among the crew. We don't know how many trees are in Viet Nam, but no doubt he will have a chance to count them from his supersonic timer cruiser.



#### PHILIP GRIFFIN CONNELL-Charlotte, N. C.

Forest Management

Forestry Club, Xi Sigma Pi

"Phyllis" is one of our most illustrious graduates from "Myers Park" and to prove that he should go back there and start over, he's turned into a runhome Freshman, but now that Chris has found out about "Shortie", it could be all over for his weekend trips. If so, he can always go back to working for Dr. Bryant on Saturdays, since he's going to have with the rest of us. burs 'I be wants to graduate with the rest of us. burs 'I be wants to graduate



#### FORREST CRABTREE-Comden, Arkonsos

Pulp and Paper Technology

Transfer student from Auburn Univ. with a B.S. in Chemical Engineering. Member of Kappa Alpha

Order, Fourdrinier Society

Forrest comes from a pulp and paper background so he decided to get a degree in PPT to go with his Chemical Engineering degree from Auburn Univ. He will go to work for International Paper Co. in Mobile, Alabama.



#### WILLIAM CROSSLAND-Raleigh, N. C.

Pulp and Paper Technology

Phi Kappa Tau Social Fraternity, N. C. State Marching Band, PlMA, Advanced ROTC, Foundrinier Society, Intramural Sports-Big 4 Softball Team Bill has that blank summer mill report to look forward to at Penwick and Ford Co. in Cedar Rapids, Iowa. Hopes it will keep him from going into the Army anytime soon.



#### SHAFTER EDWARD DRINKARD-Raleigh, N. C.

Forest Management Forestry Club, SAF

Chat is another of the married boys, and to prove it just ask milly if Chat isn't a world authority on telling the difference between bulls and milk cows. Chat has worked hard both on campus and over in the village and has lately turned into the "honcho" of Prof. Carter's tree planting flasor.



#### CHARLES JOSEPH DUCKWORTH-Brevard, N. C.

Forest Management

Forest Management SAF, AZ, Xi Sigma Pi, Forester, President ASFC "Crow" is an active member of many campus organizations. He has managed to maintain a good scholastic average and will graduate "Summa Cum Brownie" if he doesn't burn un another bus motor.



#### WILLIAM CHARLES DUFFY, JR.-Franklin, Va.

Forest Management

SAF, Wesley Foundation, Intramurals Bill is a quiet, good natured fellow who has worked hard these past four years. He should do well as a forester.



#### HARRY TODD FISHER-Condor, N. C.

Forest Management

N. C. State Bands 4-yrs., Forestry Club (Treasurer), Association of Southern Forestry Clubs

(Treasurer), Xi Sigma Pi Harry Todd, known for his hard studying and good grades, has done an outstanding job at school not only in his studies but also in attaining friends.



## STEPHEN ROSS FORT-Clarkton, N. C.

His future prospects seem very good.

Wood Tech.

FPRS, Sigma Phi Epsilon

Steve is one of the boys from over on the row, and is reported to inhale large quantities of the demon rum while at the house. The word is out in Steve getting married soon, and all we can say is heaven help the girl who gets a husband who deem't know persimmon from pine.



#### REAGAN H. FOX-Raleigh, N. C.

Forest Management

Forestry Club, Soc. of American Foresters Reagan is another one of the recently married men. Although he spends considerable time with the "Cutler Street Gang", Fox and his pretty wife should have a good life ahead of them.



#### JIMMY DOUGLAS GREGORY-Angier, N. C.

Forest Management

Forestry Club, (Secretary), ASFC, Pershing Rifles, Scabbard and Blade (Captain), Army ROTC Brigade (Commander), Alpha Zeta, Xi Sigma Pi, Thirty and Three, Phi Kappa Phi. Jimmy is one of the hardest workers that State

Jimmy is one of the hardest workers that State has to offer as his record indicates. Recent marriage has slowed the work slightly, but Jim's future still appears to be among the most successful. Jim will attend graduate school next year.



#### EDWARD P. GUERARD, JR .- Georgetown, S. C.

Pulp and Paper Technology

Xi Sigma Pi, (Honor Fraternity), Sigma Nu (Social Fraternity), Scholarship Chairman (3), Secretary (4), Pulp and Paper Foundation Scholar-ship, Fourdrinier Society, Football and Track (Intramurals).

Ted came from a big pulp and paper town to learn all about papermaking. Thought he might get a ROTC commission along the way, but decided to take lesser of two evils and get married after he graduates. He also plans to return to South Carolina for a degree in Business Administration at



#### THOMAS GARDNER HARRIS, JR.—Roanoke Rapids

Forest Management.

Forestry Club, Xi Sigma Pi, SAF, AFA, NCFA, Pershing Rifles, Advanced ROTC, Filthy Five,

USF-URP "Owl", the albino member of Cutler St. (excluding "Zipper") is well known as the only man who once thought of pulling over trees for a living but, fortunately, someone over at Meredith has changed all this and now he's eager to go to Vietnam and grow rice the rest of his life.



#### GLEN STUART HARRIS-Wakefield, Va.

Forest Management

Forestry Club (President), Dorm Athletic Director, Intramurals, Society of American Foresters.

"Hazard" Harris is among the most notorious and well liked of all State graduates. Nobody can shoot the bull or cause accidents quite as well as "the Hazard". There's never a dull moment when Glen

is around.



#### ROBERT HARRISON-Williamsburg, Va.

Pulp and Paper Technology

Phi Kappa Tau Fraternity—President, Interfra-ternity Council—Vice President, Student Govern-ment, AUSA, Advanced ROTC-DMS, VPI Forestry Grant, Army Flight Training, Intramurals, Pulp

and Paper Foundation Scholarship.

Despite his many activities Bob managed to get through these four grueling years. He has a natural gift of gab and will need it in the Armor Branch of the Army. Bob worked three summers at Chesapeake Corp. but plans to find permanent employment elsewhere.



#### RICHARD HOWARD HOLLEY-Arlington, Vo.

Pulp and Paper Technology—Chemical Engineering Xi Sigma Pi, (Honorary Fraternity), Sigma Nu (Social Fraternity) Interfraternity Council—Activities Chairman, Fourdrinier Society.

"Shorty" will undoubtedly be a big man some day even though he is only 5'8" tall. Will come back next year for a Chemical Engineering degree on the graduate level.



#### MARVIN BOBB HULA-Charles City, Va.

Forest Management

Forestry Club, Phi Kappa Phi, Xi Sigma Pi, Business Manager of Pinetum

"Hoop" is known as the only one who could ever come close to keeping "Hazard' in line. The neighbors will long remember how the "Wild Groose" would put him down with the old familiar "you stupid, stupid. . ". He is also noted for his kindness to animals; like the time he adopted a stray dog. We'll never understand why he named a female dog Ralph.



# JOHN FERMAN IRBY, JR .- Bon Air, Virginia

Forest Management

Forestry Club, President 4; Alpha Zeta; Xi Sigma Pi, Sec.-Fiscal Agent; FarmHouse Fraternity, NSF Undergraduate Research Project; Editor of the Pinetum: SAF.

"Ferby" Irby is well known for his satirical comments, and ability to distribute his work load. Although Ferman lives at Cutler Streeth e still has many good qualities which have made his four years at State highly successful. Ferman will be in graduate school next year, but it won't be State for many and varied reasons.



# JON JEFFRIES-Peoria, III.

Forest Management

SAF, Forestry Club, AUSA, Phi Kappa Tau, ROTC, Intramural Athletics

The "Peoria Flash" is more of the strong silent type, as all good gorillas are. He's very good natured about being an Illinois yankee, however. Jon will probably break his neck smoke-jumping this summer, so he won't have to go to Viet Nam this fall.



#### DOCK EDGAR JOHNSON-Randleman, N. C.

Forest Management Forestry Club

Dock's about as strong as Little Abner and twice as good natured. If he can ever get his car running, he might get away from this place after graduation. He was "bad" to come to an 8 o'clock class with last night's cigar butt.



#### GEORGE RICHARD KALL-Pittsburgh, Pa.

Pulp and Paper Technology

Fourdrinier Society, Sigma Nu George will always be remembered for the fact that you usually heard him before you saw him. Came here from Carnegie Tech with a degree in Chemistry.



#### JACK CLAUDE KING-Providence Forge, Va.

Forest Management

Forestry Club.
One of the finest boys in the class but he had to bite the dust when he got hitched up last winter.
Now all he does is burn up the road every (almost) weekend to see the better half.



#### HERBERT JULIEN KIRK-Aberdeen, N. C.

Forest Management

Xi Sigma Pi, Forestry Club, SAF Herb is one of those fellows that you never hear much out of but never the less you know he's there. He missed our summer camp and Battle of Arowwood Glade but he's one of the crew just the same.



# SAMUEL BUCHANAN LAND, JR .- South Hill, Va.

Forest Management

Alpha Zeta, Xi Sigma Pi, Phi Kappa Tau, Phi Kappa Phi, Keaton's Marauder's (Summer Camp 1963.)

One of the brightest boys in the class. He'll be the one we read about in *The Journal* in years to come. Should have been a Civil Engineer and built a new road around South Hill.



## WILLIAM HOWARD LANGLEY-Asheville, N. C.

Pulp and Paper Technology

Fourdrinier Society
R. J. Reynolds urged this boy to come back and get his degree.



#### MUN-TAI LI-Hong Kong, China

Pulp and Paper Technology Intramural Ping-Pong

Never said too much but when he did it was usually humorous. Plans to work in this country if he can learn to run a permanganate test.



# JAMES R. McGRAW-Winston-Salem, N. C.

Forest Management

Forestry Club, Scabbard and Blade, Monegram Club (Sec. Treas.), Track, Soccer, SAF, A.F.A., Xi

Sigma Pi, Advanced ROTC.

"Minus," as he's fondly known by Dr. Bryant and as 
"Maurice" by the rest of us is a pretty good fellow 
when he's not "out to lunch". He's been known to 
sharpen his machete in his spare time (the one 
he found at Summer Camp).



#### SCOTT McKELLAR-Rowland, N. C.

Forest Management

Scott lost his buddy several semesters ago and it looks like he hasn't missed him. Ought to do well in the real world.



#### JAMES EUGENE MALPASS-Delco, N. C.

Forest Management

Forestry Club.

Jimmy is another one of the quiet ones but a
mighty hard worker. He's going to make a pretty
good place for himself.



# ALVIE ROY MARCELLUS-Schaughticoke, N. Y.

Wood Tech

F.P.R.S. (Vice Pres.), Forestry Club (Secretary, Program Chairman, Captain of Conclave Team), Omega Tau.

Omega Tau.

Alvie is the champion axe-man of them all. Likes to say his piece at Forestry Club meetings also.



#### GEORGE HENRY MAXWELL, III-Elizabethton, Tenn.

Forest Management

SAF, Forestry Club.
"I can run faster, jump higher, squat lower, move sideways faster, spit further than any son-of-a-g\*e3?! in the school." Words can't adequately describe this fine fellow. If he doesn't make it in the real world, none of us will.



#### DONALD R. PAGE-Chattanooga, Tenn.

Forest Management

ΔΣφ Don came back to school and joined up with us at summer camp. One of the boys from over the mountains, he stands a good chance of getting a mountains, he stands a good chance of getting a mountains. both. The only thing we can't figure out is where did he go on weekends at summer camp.



#### RUSSELL AVER PARHAM-Raleigh, N. C.

Wood Tech.

NSF-URP, Baseball 1, 2, 3, 4 "Pete" is the most athletically inclined of this years graduates as all who have seen him swing a bat, well know. Another of "Short Roy's" boys, Pete is going on to grad, school and letting those 68 jobs go for a while.



#### WILLIAM CLYDE PARHAM, III-Latta, S. C.

Pulp and Paper Technology

Fourdrinier Society, Xi Sigma Pi, Pulp and Paper

Technology Foundation Scholarship. "Where did you say you were from, Atlanta?"
Clyde has a soft spot in his heart for Arkansas
too. However, he also has a brain in his head and plans to use it again next year in Chemical Engineering. Wants to work in a licorice plant in Dallas this summer.



# DOUGLAS RAY PHILLIPS-West Jefferson, N. C.

Forest Management

Forestry Club, SAF.
"Bullwinkle" knows how to shed the trivia like water off a duck's back. He knows a trick. He plans to go into Personnel Management work after consulting with Dr. Wood.



#### JOHN STANLEY PRITCHARD-West Point, Vo.

Pulp and Paper Technology—Chemical Engineering Fourdrinier Society (Secretary—1964-65), Xi Sigma Pi, ROTC, Pulp and Paper Foundation Scholarshin

Pritchard should have gone to Michigan, but he has done well here anyway. He has had his troubles with the Raleigh Traffic Cops, even though he has lived with one for the last year. He will make a fine PPT man if he can remember to tie a string to the sample cup so he won't dron it

in the head box again.



#### RALPH K. PUCKETT-Mount Olive, N. C.

Pulp and Paper Technology

Fourdrinier Society, Pulp and Paper Foundation Scholarship

Scholarship Rather quiet but impressed everyone with an unusually good voice quality in Doc's class one day. Plans to work in the paper industry and dodge the draft as long as possible.



#### HARRY THOMAS SANDERS, JR .- Southport, N. C.

Pulp and Paper Technology

Pulp and Paper Foundation Scholarship, Crown Zellerbach Scholarship Award, Fourdrinier Society (President), Xi Sigma Pi, (Ranger), Phi Kappa

Tom is one of the few PPT students that would bother to take a drink with the management boys and it might be said that he did a fine job of it. He goes to the Institute of Paper Chemistry next fall and will surely make a fine success of the job.



#### THOMAS WAYNE SAWYER-Bear Grass, N. C.

Pulp and Paper Technology

Xi Sigma Pi, Fourdrinier Society, Pershing Rifles,

This "Tom Sawyer" never sailed down the Mississippi on a raft but he's managed to wade through Pulp and Paper.



#### SCHULTZ, GARY CHARLES-Dayton, Ohio

Pulp and Paper Technology Who's he? Peanuts Daddy?



#### SEAGLE, JOE BEN-Morganton, N. C.

Pulp and Paper Technology Leppert's protege: Joe Ben thinks he should have majored in organic chemistry.



#### VAJNA VALK SHARMA-Puniab, India

Pulp and Paper Technology



#### DAVID WAYNE SHEPHERD-Salisbury, N. C.

Foresty Club, SAF, Lutheran Student Association, Outing Club. One of the harder workers of the class—does a lot of listening and little gabbing.



#### ABU BAKE SIDDIOUE-Pakistan

Pulp and Paper Tech AID Scholarship One of the hardest v

One of the hardest workers in pulp and paper. He will probably return to Pakistan and become a mill manager.



### DAVID P SMITH-White Plains, N. Y.

Wood Technology

Forestry Club, Treas., FPRS, Omega Tau Dave is one of the boys from the land of snow and ice, but since he's been here he's taken up southern habits and been a hard worker in the Forestry Club. One of the boys that's faced with which one of the 50 iobs to take. Dave should do well.



#### JOSEPH M. SPENCER, JR.—Charlotte, N. C.

Forest Management

College Union (2 years)
Without old Joe the College Union could not have
made it to the top.



### THOMAS F. STROUP-Brevard, N. C.

Pulp and Paper Technology

Alpha Zeta, Fourdrinier Society, Leopold Wildlife Club, Pulp and Paper Foundation Scholarship, ROTC.

Tom liked to talk about his squirrel hunting and made many trips to Greensboro, but not to shoot squirrels. Plans to get married this summer— Poor fool.



JOE A. SUTTON-Asheville, N. C.

Forest Management

"Little Joe" is one of the friendliest in the bunch. He gets along real well with Dr. Perry, too!



#### EUGENE McCULLOCH TATE-Wilmington, N. C.

Forest Management

Pi Kappa Alpha

Mac has been reported to be the only boy to take a 6 day weekend while at summer camp and get away with it; but what Dr. Perry doesn't know sure won't hurt him. Mac is a Pika, but is now married and has to stick around pretty close to home and is reported to be studying, but is still strong on poop.



#### WARREN ERNEST TAYLOR, JR.—Chesapeake, Va.

Forest Management

Forestry Club.

Warren is one of the boys graduating who doesn't smoke or drink, but the word is out that he's getting married soon so he'll probably pick up a vice or two then. The Army has their eye on Warren too, so he could easily spend his honeymoon in the rice paddies, but we hope not.



### WILLIAM EDDIE TICE-Durham, N. C.

Wood Tech

FPRS, Xi Sigma Pi, Undergraduate Research-N.S.F., Continental Can Scholarship.

N.S.F., Continental Can Scholarship. Ed has had the dubious privilege of being the only Wood Tech. boy in a suite of management students, but he passed the test and now is one of us. If hell just stop worrying so much and let things slide in Grad. School, he'll be one of the best boys "Short Roy" ever had.



### DONALD LEE TORCHIA-Utica, N. Y.

Forest Management

Forestry Club "Torch" liked those Kentucky girls so good that he even married one. He and "Killer" did it all at summer camp.



### ROBERT KEITH WARD-Golax, Va.

Forest Management

SAF, Forestry Club, Alpha Phi Omega (Historian), Scabbard and Blade, ROTC.

"Rapid Robert's" fame has spread far and wide from V.I.R. to Sebring—but the Government trucks are getting a bit tired of him.



#### FAYETTE CONQUEST WIATT-Gloucester, Va.

Forest Management

Forestry Club.
The Fire Boss had a pretty hard pull and will be admired by the rest of us. He also held some very interesting human biology lectures at summer camp.



### Classes



Management Freshmen



Wood Technology and Pulp and Paper Freshmen



Management Sophomores



Pulp and Paper Sophomores



Wood Technology Sophomores



Management Juniors



Wood Technology Juniors



Pulp and Paper Juniors

### Graduate Students

Ahlback, A. J.
Ali, M. A.
Ang, Peng L.
Appelroth, S. E.
Appelroth, S. E.
Beineke, W. F.
Bennett, Keith A.
Bratamblardja, M.
Bratamblardja, M.
Broughton, R.M., Jr.
Byrd, V. L.
Byrd, V. L.
Genpelel, G.
Cleveland, J. A.
Clerenente, R. M.
Del Castille, R. A.
Florn, R. L.
Forn, R. L.
Forn, R. L.
Forn, R. L. Formallin, E. Gortyle
Frenklin, E. Gortyle
Frenklin, E. Gortyle
Gettens, Robesee
Helder, D. M. E.
Helder, D.

New Zealand N. C. N. C. Indonesia Marian Philippines Virginia Calif. C. Georgia Conn. New York New Koren York La. Virginia N. C. New Jersey N. C. Pakistan Georgia. Australia Australia Penn. Netherlands . Rhodesia Mississippi W. Va. W. Va. Michigan Iraq Maryland Iraq India New York W. Va. N. C.

ME Ph.D. MF MF Ph.D MS Ph.D. MS MS MS MS MS MS Ph.D. Ph.D. Ph.D. MF MS Ph.D. MS Ph.D. Ph.D. Ph.D. Ph D. MS Ph.D. MF MF Ph.D. Ph.D. Ph.D. MS MF MF MF Ph.D Ph.D. MWT MS Ph.D. Ph.D. MS MS Ph.D. MS MS Ph.D. MS MS Ph.D. MS MWT

### Scholarships and Awards

#### PULP AND PAPER FOUNDATION SCHOLARSHIPS

FRESHMAN
Ashcraft, David Lee
Bailey, Mack W.
Beauchamp, Edward T.
Boggs, Joe W.
Dungan, Robert E.
Johnson, Everett E.
Link, Lewis E., Jr.
McLemore, Charles E.
Ogden, Roger W.
Williams, Robert G.
Wimberly, Michael R.

JUMODS
Brown, Robert C.
Chestnut, Robert S.
Chestnut, Robert S.
Clilott, William J., Jr.
Gabriel, Richard G.
Goodman, Gale H.
Heitman, John A.
Heitman, John A.
Holder, Charles D.
Holt, Marion A.
Kear, James F.
Lamm, John A.
Mizzell, Ronald S.
Thomas, Robert G., Jr.
Tomlin, Thomas A.
Safrit, David

SOPHOMORES
Alexander, Ernest G.
Brewer, Stanley
Broughman, William A.
Campbell, Tommy C.
Chastant, Thomas J.
Hamilton, Douglas L.
Hinton, Ransom V.
Huntley, Larry L.
Mullis, Rajph H.
McCrary, Milford H.
Newman, William E.
Reed, Walter N.
Sasser, Franklin M.

SENIORS
Altman, Laurice G., Jr.
Baird, Bennett R.
Clark, Ernest C.
Guerard, Edward P.
Harrison, Robert C.
Holley, Richard H.
Kall, George
Parham, William C.
Pritchard, John S.
Sanders, Harry T.
Sawyer, Thomas W.
Stroup, Thomas W.

#### UNDERGRADUATE RESEARCH PARTICIPATION (NATIONAL SCIENCE FOUNDATION)

Fall 1964
James P. Cunningham
Jimmy D. Gregory
John Ferman Irby, Jr.
Samuel B. Land, Jr.
James H. Ware, Jr.
Harry Thomas Sanders
William Eddie Tice
Russell Parham

Spring 1965 Gerald R. Brown James P. Cunningham Jimmy D. Gregory Samuel B. Land, Jr. Harold E. Sellers Harry Thomas Sanders William Eddie Tice Russell Parham

#### BILTMORE WORK SCHOLARSHIP

William Thomas Caroon Douglas R. Phillips David W. Shepherd

### CONTINENTAL CAN COMPANY SCHOLARSHIP

James Victor Henderson Andrew Stewart Nuckols William Daniel McGill, II Charles L. Lennon Gregory Hudson Winston Jimmy Douglas Gregory Samuel Buchanan Land

## SOUTHEASTERN DIVISION OF PAPER INDUSTRY MANAGEMENT ASSN.

William Edward Bradford

THE GARDEN CLUB OF N. C. INC. AWARD

Douglas Ray Phillips

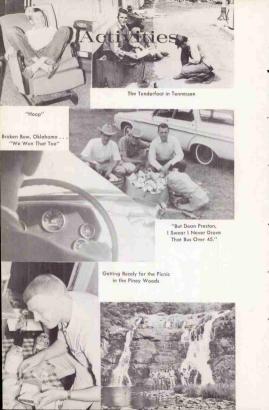
### HOMELITE

Charles Joseph Duckworth

Marvin Bobb Hula

#### ATHLETIC AWARD

William Lewis Aster Clyde O. Belangia Terry H. Brookshire Freddie Combs William C. Mann Russell Parham Willam G. Simpson



### The Forestry Club



by
WALTON W. ROGERS

The Forestry Club started early in the fall with the following elections:

President—Ferman Irby Vice President—Glen Harris

Secretary—Walton Rogers Tresure—Dave Smith

On October 24, 1964, the annual fall Rolleo was held at Hill Forest. Barbeque, woodsmen's events, and the initiation of 20 new Club members were included on the program. The seniors won, but they had to fight the

juniors for every point. The turnout of sophomores and freshmen was also very impressive.

Brian Flacco was chairman of the pulpwood committee and was responsible for a considerable profit which was used to defray cost at the 1965 Conclave. Charles Duckworth, President of the Association of Southern Forestry Clubs (ASFC), pushed the Club and his committees from September until April 30, in order to make the 8th Annual ASFC Conclave "the best ever."

The spring semester saw Glen Harris, Walton Rogers, Bill Callahan, and Brian Fiacco lead the Club as President, Vice President, Secretary, and Treasurer, respectively. The well planned Fall programs included Dr. A. C. Barefoot's talk on his trip to England, Dr. R. C. Bryant's slides on his Alaskan adventure, and Dr. P. J. Dyson's "lecture" entitled "Systematic Analysis." Senior, Reagan Fox, was chairman of the program committee.

During the spring semester the Club sponsored the "famous" Loggers' Brawl and, of course, the 1965 Conclave. The Club grew to 51 members, 22 of which were graduating seniors and 29 of which were active, young,

future foresters.

### Fourdrinier Society

by JOHN PRITCHARD



The following officers started the Fourdrinier (Society) machine rolling for the 1964-1965 school year:

President—Harry Thomas Sanders Vice President—Robert S. Chestnutt Secretary—John S. Pritchard

Treasurer-Bennett R. Baird

Program Chairman—Ernest Calvin Clark, Jr.

The Fourdrinier Society was established at North Carolina State by the students in the Pulp and Paper Technology curriculum in 1957. Since that time many varied and informative programs have been presented concerning the paper industry. This year's programs were no exception.

The first program for the new year was very fitting since it concerned the career opportunities of a Pulp and Paper Technologist. A representative from Reigel Paper Company, Reigelwood, N. C., was the speaker. Dr. Alfred J. Stamm, Distinguished Professor of Pulp and Paper Technology, dropped by to show us some rather unusual slides of his trip to Australia. A representative from Chesapeake Corporation in West Point, Virginia talked to us about one of the coming innovations in the paper industry, continuous digesting. Other programs have been concerned with such things as dyeing of paper, drying of paper, and manufacturing of cigarette paper.

We plan to have our annual social in late April which always provides loads of fun and some "unusual" development.

### Forest Products Research Society

by

#### CHARLES L. LENNON

President—Art Holder Secretary—Ed Wall Vice President—Alvie Marcellus Corresponding Secretary—Royal Loyd

Treasurer-George Disk

The objectives of the North Carolina State Chapter of the Forest Products Research Society are "to promote good fellowship among the students and to provide closer contact between students and members of the wood industry" and "to aid in the exchange of information on lastest developments in the forest products field." These objectives are fulfilled by the monthly programs which feature prominent speakers in the wood industries and consist of informal discussions of such technical subjects as glueing, drying, quality control, and furniture production.

The membership of the Society includes Furniture Manufacturing and Management students as well as those in Wood Technology. The North Carolina State Chapter is closely associated with the Furniture Club

and holds occasional joint meetings with them.

The North Carolina State Chapter was founded in 1951 and is the only recognized college chapter in the country. Under the capable guidance of Professor Roy M. Carter, past president of the national society, the North Carolina State Chapter of the Forest Products Research Society has been a source of information and inspiration for its members.



# Xi Sigma Pi, Mu Chapter

Officers

Forester—C. J. Duckworth Secretary-Fiscal Agent—J. F. Irby
Associate Forester—B. R. Baird Ranger—H. T. Sanders
Executive Council Representative—Dr. R. C. Bryant

Mu Chapter of Xi Sigma Pi, National Forestry Honor Fraternity, was installed on April 20, 1940. Since that time it has undertaken various activities at North Carolina State College to better the School of Forestry and the professions connected with forestry.

All experiment stations send their publications to Mu Chapter. These are kept in the lounge for the use of all interested persons. Xi Sigma Pi awards an axe to the sophomore who attained the highest average as a freshman in the School of Forestry, Noted speakers within the profession are brought to the campus by Mu Chapter.

The most important function of Xi Sigma Pi is to recognize those students who show promise of becoming leaders in their profession and to promote better relations among students, faculty, the School of Forestry, and North Carolina State University.

### Summer Camp 1964

by

### J. BRIAN FIACCO

June 8, 1964, saw George K. Slocum Camp at Forest Hill come alive with 48 potential foresters. Students from New England, Kentucky, Virginia, Honduras, Cambodia, and North Carolina filled the brown bunkhouses with boots, books, axes, and laughter. The summer outdoor laboratories had been.

The first week was spent primarily getting organized, getting acquainted, and finding out what would be expected of us. Dr. J. O. Lammi, Camp Director; with his assistants, Conrad, "Rogerstein," Kirk and Winston collected fees, set up the kitchen, and sold a few black market items. The morning work crews were organized and the general camp atmosphere was a baw one.

It wasn't long before the action began. Mapping by monlight can be quite challenging, especially in a summer thunder storm. Precision and accuracy were all a part of our daily routine. When a crew must remeasure over 100 trees because every D.b.h. was taken one inch to high, lessons are bound to be learned. The "Jokers Four" (Rogers, Schwanda, Brouillard and Deal) had their own system. When 3:30, quiting time for them, arrived and it was time to roll up the chain, it seemed easier to send the chain through a mowing machine and then carry the pieces back in their pockets. Inevitably, whenever the factuly came around to inspect the progress of "Crew J." the Jokers would be taking five at the nearest pub.

With Will Mann's attraction for snakes and Herb Kirk's constant association with accidents, hazards were always a potential threat. It is





still a mystery as to what caused the ground fire during a dendrology quiz. The Fire School at Kinston was of definate educational value, especially since the State boys had had previous experience.

On July 18th the pligrimage to the mountain camp began. Larry Jervis and "sis" truck filled with kitchen equipment and the cooks, led the expedition. Kurt Peterson and his Model A helped the bus along and ten hours later they limped into the Wayah Baid Camp. The mountain camp was a refreshing change, especially since we had cool weather, Joyce Kilmer, and Hieiplands to look forward to.

The first week was spent primarily around the Wayah Bald watershed area learning about recreation, watershed management and mountain logging operations. Two enlightening days were spent at Joyce Klimer in which the emphasis was on the contrast between northern and southern exposures. The giant hemlocks and poplars that we measured will be a constant reminder as to what nature is canable of producing.

Highlands was the entertainment capital of the world as far as we were concerned. The girls, the clogging and the refreshments were all a part of our weekends. It is still amazing how Ken Johnson made it back

so many times safely after having such a "good" time.

All good things must come to an end and the 1944 Summer Camp was no exception. When the final days arrived, refunds, special events and exams occupied our time. It appeared that Dr. T. O. Perry and Dr. A. C. Barefoot knew what our little minds were thinking. The last few days they wore tennis shoes, old pants and soiled shirts. Sure enough, we threw them in the lake and felt much better afterwards.

On August 15th the general chatter was not of logging, dendrology or management, but rather of girls, beach trips and relaxation. It was even rumored that Summer Camp had been worthwhile, that we had actually learned something, and that our trips to Canton and Bemis Lumber Co. had shown us the possibilities of jobs after graduation. Even though we had set several fires, had our share of accidents and skimped on our bug collections, we had few regrets. Our summer outdoor laboratory had ended.



### PHILLIP G. CONNELL.

Summer Camp's Hill Forest was the scene of the annual fall rolleo for 1964. The weather turned out clear and cool to match the invigorating spirit of everyone who attended. All four classes as well as the faculty were well represented. The juniors, fresh from summer camp, were eager for a repeat preformance of last year by trying for an upset victory over the seniors. Tom Harris provided the capable leadership and events were under way by late morning.

Slow was the start as junior Dennis Curtin threw the chain a little less slowly than senior Ferman Irby. The sophomores and freshmen missed out on this event due to a late bus but were given a "make-up" event later in the program. Next, Barr Brooks won handily (his second straight year) in the DBH estimation.

Ax throwing and knife throwing proved to be close all the way. Phil Connell managed a victory for the seniors over junior Bill Callahan in the ax throwing. In knife throwing, however, Connell could only manage a close second over the sophomore Bill LaRoque while Bryan Fiacco provided the innoirs with their second first place of the day.

With the morning wearing on and the scores still very close, seniors Al Marcellus and Dave Smith showed championship conclave form by taking a first in the cross-cut event over juniors Dennis Curtin and Dave McDougal. The time was 24 seconds flat. Immediately following, Marcellus added to his litse was 24 seconds flat. Immediately following, Marcellus added to his principle of the seniors by taking how saw in hand and ripping through an 8 by 8 pine cant in 28.3 seconds. He was followed by the junior's Dave McDougal with a time of 28.2 seconds.

The "make-up" event was a turkey shoot in which freshman William Hamilton out shot Bill Smith to tighten the race for third place. About this time the lunch bell sounded and rivalry was forgotten as the boys settled down to the forestry club special: BBQ, slaw, and hush puppies. Lunch time proved to be quite profitable for Marvin Hula and Charles

Duckworth. Both received halves in an outstanding senior scholarship given each year by the Homelite Chain Saw Company.



Smith and Marcellus win the cross-cut

Following lunch the freshmen set out to prove that they also wanted some recognition. William LaRoque out muscled junior Dave McDougal to give the freshmen first place (their second of the day) in the pulp toss.

Log rolling was the next event and everyone looked on with anxious eyes as "Phantom" Ardrey and "Crow" Duckworth, winners of the 5C onclave and expected witness of the rolleo, prepared to roll therefore, because the colleo, prepared to roll the stellar flast, but as the log rolled flast, but as the log rolled shocking over a stake the collection of the collection of

In pole climbing, Walton Rogers renewed the juniors bid for first place by outclimbing senior Joe Spencer. This lead was short lived, however, as senior Marcellus with sharp ax and superb form won easily over all competitors in the ax chopping. The junior's Dennis Curtin finished second.

The next ten minutes of the rolleo kept the crowd rolling in laughter as one representative of each class entered a ring with a back pack fire pump in their hands and eigars in their mouths. The object of the fire fight: To put out all other contestants cigars and smoke as much of their own as possible. Ten minutes and four water-soaked eigars later, senior Jim McGraw merged winner (by a fraction of a centimeter) over junior Ken Johnson.

The last event of the rolleo was the tug-o-war. In first round action the seniors out pulled the freshman and the juniors won over the sophomores. For consultation position the freshman won over the sophomores. Then in the final competition of the day the senior team, after a long tring struggle, managed to pull the junior team over the line.

Final scores showed the seniors with a close first place over the juniors. The sophomores took third place but equally close over a nervous but spirited freshman team.

When rolleo events ended, initiation of freshmen and all new members proved to be the hardest competition of the day. The new members were put through all sorts of vigorous mental and physical exercises. Revenge was sweet for the initiates, however, as word got around that rolleo day was also "Phantom" Ardrey's birthday. For the second time in one year, Phantom ended up in the HIII Forest pond.

Good attendance by all, spirited participation by the students, and excellent judging by the faculty made the 64 rolleo an all round success.



Dr. Miller, Dr. Hoffman, "Dean of Students" Liles, and Proff Wyman.

### Loggers Brawl

by

### GLEN "HAZARD" HARRIS

The Loggers Brawl of '54 will long be remembered in the minds of all N. C. S. U. foresters for the good food and good times we had, and for the long awaited good riddanee of the "Phantom's" famous hat. Mrs. Liles and Miss Rose were, as usual, very helpful working all afternoon on the decorations for the dance and, also, in the heating and serving of the much enlowed barbeure and hush pupils.

The Brawl got underway about 4:00 with all the guys and their dates getting together down by the pond for introductions and the passing around of the jug of old Stump Blower for the first of many times. After becoming socially stoned, the "Phantom" began his voyage across the pond on the not-to-stable summer camp raft. He did not even get up a full head of steam before into the water he went with a loss of both pride and hat. Dry clothes were waiting on the bank however, so all ended well except for the loss of the hat, which everyone but "Phantom" didnt: seem to mind. About this time "Ferby" and his date came upon the scene and to this day "White Ow!" has not been forgiven by his roommate for the first and last blind date he ever got him. Irby surely got a loser, but he's got a harm now so it's all even.

About this time Mrs. Liles called "soups on" and there was a mad dash to the cook shack for the barbeque and "Dyson-closis" which we all enjoyed. After this we adjourned to the pines for a few minutes. Soon we heard Jody Rose and the bonys tuning up and the bunk house was instantly filled with both faculty and students who were intent on having a good time, either dancing or merely watching Dr. and Mrs. Perry do every dance from a fox trot to the watusis. We danced long and hard and everyone had a good time and walked away with the memory of having been to a great Lorgers Brauk, and with high hones of having even a better brawl in '63.



### 1964 Wood Technology Summer Practicum

by

#### PAUL HIGGINS

This year's summer practicum consisted of two five-week sessions. The first assession was held with the furniture manufacturing beys and was to teach us a little about manufacturing furniture. The second five-weeks, we were under the direct charge of Prof. Roy M. Carter or, as we know and love him, "Short Roy". This took place without the furniture boys, thank heavens.

The objective of the first five-weeks was to start with lumber and veneer logs, manufacture all plywood and furniture parts to a cutting order, and end with completely finished furniture. We were to do all of this in the Wood Products Laboratory here on campus.

Our first need was for kiln-dried lumber. Short Roy undertook the formidable task of instructing us in the use of the kiln. After stacking a charge and cutting about thirty kiln samples, we started the kiln. Aside from operating the kiln, we had one main headache, charts and graphs. Short Roy has a chart for everything and a bigger chart to keep track of the littler charts. We were so busy recording and measuring we hardly had time to dry the lumber. After drying the lumber and cutting the parts, we went on to bigger and better things!

We decided our professors were not knowledgable enough to teach us all we had to know about glueing and finishing in order for us to do a good job on our night stands. We decided to go to the horses mouth, mainly the furniture factories. Accordingly, a week-long plant trip was arranged to Lenoir. Mac was to be our trusty chauffeur, and we were to take the reliable forestry bus. All I can say is, that was one hell of a long trip! If you were in the front of the bus you burnt up, and if you were in the back you bounced about and were choked by fumes. It was here that we first started to play bridge. It was innocent enough at first, and there was no hint as to the things to come.



Close Observation

When we first arrived in Lenoir, we pulled up in front of the formidable and breath-taking Carlheim Hotel! It was formidable, for it had the tremendous porch and high roof of the late 19th century, and it was breath-taking because it looked as if it would fall down any minute. At least it had such conveniences as running water and beds. This was better than anything else we had seen. (This was the mountains you know!) After a hard day of touring furniture companies, (some of us even took notes) we decided to see what the town had to offer. The only thing to offer itself was. . Oh, excuse me, I was rambling! We did find a beer parlor and an Eivis Presley movie though. It was even said that one of the furniture boys was seen wandering over the top of the local Colonial Store with a cool six-pack in each hand! A week was spent in this way. We saw such places as Blowing Rock Fur. Co., Nu-Wood Corp., National Veneer Co., Broyhill Fur. Co., and Kent Coffey Fur. Co. On the long ride back to Raleigh we discovered the wonderous power of observation. From our vantage point in the bus we could see some mighty interesting cars pass?

Arriving back in Raleigh with our new-found knowledge, we set about the task of completing our night stands. It was while glueing up tops on the high-frequency gluer that one of the furniture boys (You might have known!) was curlous and wanted to see if the gluer would glue his hand. He stuck it in and promptly found out! All in all, we managed to et the night stands together with no real casualties, thus preserving the

lab's record another year. (Better luck to you next year.)

In order to finish the article of furniture we had made, it was necessary to use the spray gun. It doesn't seem hard until you try it. Judging from some of the finishes that resulted, some people never learned. If a coat wasn't sprayed too thick, it was sprayed too thin. And if we got too good, the professors changed from an air spray to an airless spray. They were really beautiful articles of furniture! As our night stands went, so went the first five weeks.

The second five-weeks was left to Prof. Carter to do with what he liked. We took up logging and milling. This time the group was more compact and congenial as it only consisted of Wood Tech boys. There were eight of us. including one graduate student from Pakistan.

We started out this session by visiting certain small mills that were located about Raleigh. We decided that this was more in our line than furniture was and began to take an interest in our work. One day while coming back from one of the sawmills, Short Roy suddenly got a wild idea that our education was not complete until we had set eyes upon a peckerwood mill. For those interested, a peckerwood mill is a small portable sawmill that is located directly on the tract of land to be cut. Usually said mill is located in the middle of nowhere. As I was saying, Short Roy decided we should see one. When we turned off the main road onto a narrow, rutted path I began to get an uneasy feeling. I knew my Chevrolet was no Jeep, but Short Roy, who was driving ahead of me, seemed to think his was one of the 6 by 6's at the lab. We bounched through fields and over creeks until we came to a big hole. Short Roy took one look and, with a gun of the motor, was off! He slipped and turned and skidded and eventually landed on the other side. I fastened my seat-belt and, with the conviction that anything Short Roy could do, I could do better, took off! Thirty minutes later I landed on the other side! After gazing upon a little lumber, a little sawdust, and a little inill, we left. All of us were much inspired.

### N. C. State Victorious at Broken Bow

by

#### TOM HARRIS, JR.

Seventeen members of the N. C. State Forestry Club brought the victory flag home from the Seventh Annual Conclave of the Association of Southern Forestry Clubs held in Beavers Bend State Park, Broken Bow, Oklahoma in May. 1964.

The State team earned 47 points to defeat Arkansas A&M with 40 points and Clemson with 38 points. Pre-conclave favorite Georgia was an "also-ran" with only 13 points.

In acheiving State's first conclave victory the group overcame many obstacles. They practiced hard, rode the furthest, completed the toughest, and partied the most.

Despite the rigorous academic load of the State competitors and the dubious looks by the faculty, the team put many hours into the practice sessions. The final team was chosen by a spring rolleo which featured some rugged competition.

Four rented cars were used to make the trip which was uneventful except for the last-minute, pre-dawn search for "Dink" Tillman. "Dink" was finally found in the "little brown shack out back".



They said it couldn't be done.



Which way to Oklahoma?

The State delegation arrived in Broken Bow early Friday morning. They spent the day either sleeping, touring Texas, practicing for the next days contests, or rehearsing for the upcoming victory party.

N. C. State's team showed its superiority early Saturday morning in the technical events when Irby, Brooks, Gregory, Tillman, and Farrari all placed in their respective events: dendrology, d.b.h. estimation, timber estimation, pole classification, and wood identification.

Al Marcellus was high man in the afternoon's events with firsts in bow sawing and log chopping. He and Curtin teamed up to win first in the cross-cut sawing. "Phantom" Ardrey and "Crow" Duckworth placed first in log rolling. New ASFC records were set in all of these events.

"Hazard" Harris, after being carried bodily to the firing line, was unable to score in the bait casting contest and was transported to the local medicine man to receive a cure for blood (not lead) poisoning. Bill "Phantom" Ardrey also was barely eliminated in log burling. These two events were two of the most disappointing happenings of the day.

Following the early morning victories in the technical events the State contingent began the most unique party since the movie "Tom Jones". At 9 a.m. the first round of refreshments was obtained; by 3:30 p.m. no Budweiser was left in Broken Bow, Oklahoma. The shortage did not harm the banquet however, and it proved to be a quite interesting event.

The State men left Beavers Bend State Park early Sunday morning with several cords of walnut trophies and several big heads tucked away as bounty for a most successful trip.

### Progress Report for 1964-1965

### by

### R. J. PRESTON, Dean

There are many interesting and progressive activities to report for the 1964-65 academic year. Each year the complexity and diversity of our programs make it increasingly difficult to provide a clear picture of total achievement in a brief report. Some idea of the scope of activities of the School is apparent from the growth of the forestry budget which now totals some \$800,000, of which well over half comes from sources other than State appropriations. As of last June our alumin numbered 1262, with about 90 more to be added by June 1965. Our student body this fall totaled 415 students, coming from 28 states and 21 foreign countries. Included in this total were 68 graduate students, some 29 of whom were working for the FhD. degree.

The strength of any school is a measure of the achievements of its alumni, the quality of its student body and the caliber of its faculty. I believe we rate well on all three counts. As I write this seven faculty members are in contact with employers seeking to entice them to other positions and I can only hope we will continue to be as successful as in the positions and I can only hope we will continue to be as successful as in the past in holding together the fine group of scientists that now make our school. As always our faculty is most active and only a few major achievements or recognitions can be listed here:

- Dr. Ellwood is serving as President-elect of the Professional Society of Wood Science and Technology and will take over the Presidency in June 1965.
- Dr. Maki has been awarded a Fulbright Fellowship for study in Finland and Sweden during 1965-66.
- Mr. Kellison has received a grant from the Swedish-American Foundation to work with Swedish geneticists during the summer of 1965.
- Other foreign assignments since the last progress report include Dr. Barefoot's participation with an archeological expedition to England, Dr. Zobel to the Bahamas and Brazil and Dr. Saylor to the Bahamas, during the summer of 1964.
- 5. Dr. Stanley K. Suddarth, Professor of Wood Technology at Purdue University, has been with us this year as Visiting Professor working with Dr. Jayne on a contract with the Office of Naval Research to develop a non-destructive test for plywood. Results to date are promising and we have enjoyed having the Suddarths with us.
- 6. Dr. Duffleld, Dr. Ellwood, Dr. Maki, Dr. Stamm and Dr. Jayne served as Visiting Lecturers to other forestry schools on National Science Foundation sponsored programs. Dr. Duffleld will also direct a program in Forest Biology for high school teachers over a 16-week period during the Summer of 1965. This program is supported by the National Science Foundation.
- 7. Dr. P. J. Dyson was appointed Assistant Professor on July 1, 1964.
  Dr. Dyson has a joint appointment in Forest Management and Wood

Science and Technology, teaching Forest Economics to the sophomores and doing his research in the Utilization field.

 Dr. J. T. Rice was appointed Assistant Professor of Wood Technology on July 1, 1964. Dr. Rice's work is in the area of glueing.

- Mr. Stephen J. Maddock, an employee of the Southeastern Forest Experiment Station specializing in recreation research is stationed at the School with the position of Assistant Professor.
- Mr. William B. Stuart has joined the Forest Management Section of the Extension faculty, filling the position vacated by John Gilliam.
- Dr. Robert L. Barnes and Dr. Louis J. Metz, employees of the Southeastern Forest Experiment Station in the Research Triangle, have been appointed Adjunct Professors of Forest Management and Forest Soils respectively.
- 12. Dr. Arthur Kelman, Reynolds Professor of Forest Pathology is resigning to become head of the Department of Pathology at the University at Wisconsin. Our alumni will regret with us the loss of this outstanding teacher and scientist.
- Dr. Ellis Cowling, now on the faculty of Yale University is replacing Dr. Kelman with a joint appointment in forestry and plant pathology.
- Fred Whitfield, Extension Specialist in Forest Insects and Diseases now holds a joint appointment as Associate Professor of Forest Management and Entomology.
- Ross Douglass returned from a year's leave of absence, working on the Doctorate at Duke University and Leonard Hampton went on graduate study leave February 1, 1965, working on his Master's degree at N. C. State.
- 16. For the next two years William Keppler, Head of the Wood Products Extension Section will serve half time as a consultant with the Federal Extension Service.
- Mr. Ray Smith, a graduate of N. C. State and formerly Personnel Director for Albemarle Paper Company, has taken over as Executive Secretary of the Pulp and Paper Foundation.
- 18. Dr. Hart and Dr. Davey both received the Sigma Xi award for out-standing research. Dr. Davey was also the recipient of the Campbell Soup Company research award for outstanding achievement in soil microbiology.
- 19. Your Dean continues to spend far more time in Washington, D. C. than he would like, as President of the Association of State College and University Forest Research Organizations, as a member of the Cooperative Forestry Research Advisory Board, and as a member of the Agricultural Research Planning Committee.

Several special School activities during the year merit mention:

- In the summer of 1964 we participated in a Peace Corps program, training a group of seventeen foresters for service in Chile. Gerald Garthe, a former member of the Peace Corps and one of our Graduate Students, was responsible for our part in the program. Gerald has since accepted a full time position with the Peace Corps.
  - The Eighth Annual Conclave of Southern Forestry Schools is scheduled in Raleigh for April 30-May 1. Some two-hundred representatives (Continued on page 74)

### The Extension Forestry Program

by

#### W. M. KELLER



Standing (left to right) Dixie Hobbs, Bill Santon, John Gilliam, Bill Huxster. Seated (left to right) Bill Keppler, Walt Keller, Fred Whitfield, Priscilla Reyels, Inez Tucker.

The extension forestry program is a part of the Agricultural Extension Service. It is the largest extension forestry program in the nation and is widely recognized for the excellence of its staff and for leader-ship in developing new concepts and techniques. Extension forestry personnel have a dual status as members of the faculty of the School of Agriculture and of the School of Forestry.

The extension forestry program is set up to reach and help timber growers, timber buyers, and primary and secondary processors. This program has three major objectives:

 To help assure the people of the state a wood raw material base adequate to meet present and future needs.

To help farm and other private individual forest owners increase forest earnings to \$100,000,000 per year.

To help stabilize and strengthen the competitive position of the state's wood-using industries.

The extension forestry program, under direction of the Extension Forester, is divided into two sections: Forest Management and Wood Products. The programs of these sections are closely coordinated with the teaching and research programs in the Forestry School's departments of Forest Management and Wood Science and Technology.

(Continued on page 63)

### The Hofmann Forest

by

#### J. V. HOFMANN

Development of Block 10 is completed to the point where all areas are accessible and the principal drainage canals are constructed. The program of technical forestry is now being undertaken and complete records will determine the value of the investments. Timber cutting has been based more on an economic than forest management basis. Cutting has generally been conducted in accordance with good management principal although production records have not been kept. Most of the old stands of timber, (mostly nond pine) burned and flooded have been cut.

Young stands of seedlings, to pole size, cover nearly all of Block 10 and

records will be made this year of the conditions on the area.

CFI plots will be established over the entire area. The grid has been made for placing 50 plots in order to get complete coverage. The plots will be established and recorded by the same crew that will remeasure the CFI plots on the forest. This procedure will make it possible to combine the plots on Block I ow with the forest, or to compile them separately.

The Albemarle Paper Manufacturing Company plans to remeasure the

CFI plots this spring.

The experimental area in the big opening has been remeasured in 1964 and the results are being analyzed. Apparently some treatments are producing better growth, and soil and vegetative conditions are showing varying results.

Development of the forest is progressing along the same method as in the past, however only one dragline has been operating during the past year. Drainage and road construction has reached most of the timber areas, consequently the program has been reduced although it is continued in the open and non timbered areas.

Personnel changes on the forest: James L. Huff has been transferred

to Roanoke Rapids.

Wallace Wicks is now in charge of the forest. He was transferred from the Roanoke Rapids office.

The Albemarle Paper Manufacturing Company expects to begin site preparation and expand the restocking program as rapidly as feasible. Block 10 is stocked medium to good with few local exceptions. As

soon as the growth plots are completed the entire area will be analyzed as to requirements for improvement. This will require records on local areas or compartments.

A long term plan will include cutting budgets and methods of cutting to insure restocking.

During the past year some of the hardwood areas have been cut. The upland hardwood is of little value except pulpwood although with drainage and roads these areas become very good pine sites.

Hardwood stands on the forest should be cut in order to convert the upland hardwood areas into pine and to salvage the mature and over (Continued on page 69)

## The School Forests

RALPH C. BRYANT

You have all read with interest the yearly reports on the Hofmann forest by Doc Hofmann. The Editor suggested you might also like to know the current status and recent developments on the Hill, Hope Valley, and Schenck forests.

The philosophy of management for all three has been basically the same. The objectives have been to manage each of the properties so that they would make a maximum contribution to the School's teaching and research programs and to its financial needs. Although these goals occasionally conflict (you can guess which has the highest priority) the

results achieved in most cases have been favorable.

On the Hill Forest, George Slocum's practice of annual clearing and planting has been continued and today there is a complete series of plantations from 1-31 years of age. These are an invaluable asset for instruction and research purposes. This year some 22 stands of the older plantations are being cut in a general thinning program involving some 1200 cords of wood. Credit should be given to Doug House '47, the successful bidder, for a careful and excellent thinning job. Some 300 M ft. b.m. of savolgs have also been cut in the last three years. Receipts form these sales have helped finance graduate students, new equipment purchases, and research projects.

We are hopeful that a substantial appropriation request for modernization of the Slocum Summer Camp will be approved by this Legislature. Many of the facilities at camp need replacement and there are tentative plans for a series of four-man student cabins which we hope will provide

a better atmosphere for scholastic achievement. The announcement of the construction of the New Hope Dam has had profound effects on the management plans for the Hope Valley forest. Some 958 acres of the forest will be flooded by the dam, leaving a peninsula of 593 acres jutting out into the lake. In anticipation of dam



Schenck Forest

construction the School has already sold (for elear-cutting) 945 M ft. b.m. of sawtimber and 644 cords of pulpwood. The balance of the timber on the uncut land to be flooded has been sold to the North Carolina Prison Department under a long term cutting agreement involving some five million feet of sawtimber and over three thousand cords of pulywood.

Several research projects are in progress on the area not to be

flooded, the most ambitious being a 100-acre pilot study of the financial merits of even-aged vs all-aged management of loblolly pine.

This spring an intensive inventory of the Schenck forest has been taken including the installation of permanent plots for future inventory data. A tract of some 24 acres has been surveyed and set aside as a natural area for future research and recreational purposes. Included are several stands of fine lobiolity that average four and one-half loss in height.

Much of the afternoon laboratory work in management, silvies, and silviculture is concentrated on the Schenck forest, and Bruce Zobel has three extensive areas of seed orchard and vegetation bank well established. The construction of the new football stadium close by and the proposed construction of new access roads to it will probably create recreational demand for use of the forest in the future, and we are trying to anticipate these needs now. Thinnings of the large plantation and adjacent stands in the last five years begin to make the forest look like a texthook example of forestry.

When you get back to Raleigh or vicinity, plan to take a quick trip around the properties. You can judge for yourself how good the School is in practice as well as in theory!

### (Continued from page 60)

Work with timber growers is conducted by seven extension forest management specialists working through more than 300 county agricultural agents. These seven specialists serve as technical field leaders to carry research findings to the State's forest landowners, and devote one hundred percent of their work time to raw-forest-product growing, harvesting and marketing. They provide foresty-leadership training, planning and program selfort is conducted with and through these agricultural agents. Six of these specialists are assigned to individual geographic areas where they handle all general foresty problems, but they also work state-wide in one specific-problem area in which they have specialized, such as watershed management, insects and diseases, tree planting and forest soils, Christmas-tree production, outdoor recreation, and bottomland hard-wood management. The seventh specialist serves as Section Head.

Work with buyers and primary and secondary processors was started in 1956. This work is conducted by four wood products specialities who work directly with industry clientele, and make up the Wood Products Section of the Extension Proestry Department. These men work statewide, often pooling their talents and knowledge to work as a team. They work with industry in such specialized areas as: logging and assembly, equipment and machinery, drying, preservation, product promotion and merchandising, operations analysis, plant feasibility, and plant location. The primary objective of this Section is to keep North Carolina's wood products competitive.

Thus, there are twelve professional foresters (including the Extension Forestry Department head) serving as subject-matter staff specialists. There are no foresters employed at the county level.

Changes in personnel within the Extension Forestry Department since July 1, 1964, are covered elsewhere in this *Pinetum* in Dean Preston's report.

### A Second Look at the Cooperative Plan of Students Industry and Faculty for Students Summer Work

by

### DR. PETER J. DYSON

In April of 1964 while attending a week long school in a Southern university I heard the following remark, "Foresters won't take those tough courses of statistics and math when their pay scale is so low. If they have to take tough courses then they may as well take engineering and get a better wage." Needless to say I challenged the statement. In my brief experience I find there is a demand for students who know the tools of analysis (statistics, economics, and engineering) and can apply them in forestry situations. These students can get wages commensurate with engineers. However many employers do not think of foresters for jobs other than the growing of trees. This is the fault of all these associated with the profession, but particularly the schools.

We in the schools are producing a product for the market. We should keep abreast of the demands of the consumers to make sure that our product satisfies the market. If we are going to satisfy the whole market it is necessary to diversify and produce a variety of products. Unfortunately however, all our products carry the same label, forester, without

regard to type or quality.

Starting in the summer of 1963 an experiment was carried out in which a student was employed by industry with the express purpose of showing that given the tools of analysis as presently available to our students, plus a little supervision, these students can develop answers to the questions which are of vital interest to management. "What will happen to production, costs and returns if a change is made in the system?" This change could be anywhere, in the growing of trees, the harvesting of timber, the processing of lumber, or the manufacturing of wooden products.

At the close of that summer an old timer remarked that, unconsciously or consciously we had done something for the boy that he couldn't possibly have done for himself. In the space of 3 months we had brought him to the attention of top management in a manner that it would normally take five years. This was a natural buy-product of our activities.

The past summer saw 8 students in the field an increase of 800 percent. The problems analyzed were in the woods, the sawmill, the planing mill and secondary processing. The students were both undergraduate and graduate, forest management and wood products. All employers were more than pleased with the results even though not all students could say we saved the company a specific amount of dollars. This may be because the extension and teaching faculty who supervised the activities were taxed to the limit of their time and resources. Hence in some instances the supervision was spread thin. However, these students who took an active part and showed initiative are obtaining jobs with salaries above the forestry average.

The experiment indicates that students, industry and faculty can cooperate to the mutual benefit of all. Now the question is, do we want to

enlarge the project and if so how should it be done?

There is already some talk that this project would be ideal for all wood products students. To which I say "Horrors!" I hope I don't have to supervise them."

In the first place I don't believe all our students are ready to "really" work. I don't mean to insult them but frequently students are not honest with either themselves or their employers. They don't put themselves into the job because it is only temporary. They may justify their actions by doubting the integrity of their teachers but this doesn't help them. Too many of our students are "C" and below because they are either indolent, indifferent, careless, tired, frightened of distressed.

These habits may be because of their home, their community, their previous schooling or their present teachers. Regardless of where the habit developed I want no part of that student in a summer program. The main reason for this is we need to be able to place confidence in the data collected and analyzed by the student. The information may be the basis for the investment of considerable time and sums of money.

The only type of student I want is one that has enthusiasm, drive, energy, honesty, imagination and the ability to think.

Many of the students believe they had all these prior to coming to college but as school progressed energy, drive and enthusiasm dried up. This, they blame on the unenthusiastic dull teachers. This may in part be true but it isn't the whole answer.

Prior to coming to college, many or most of the high school courses were survey type. However, eventually a student has to take basic courses which require a great deal of individual study without a specific end in view. These courses "floor" a student accustomed to speed or skim reading. The teacher in turn may think the student dull as his interest is never stirred off dead center.

I believe the answer is that frequently neither teacher or student has ever learned the parable of going the second mile.

I believe the student who reads two chapters ahead of the class instead of two behind may find the dull teacher would brighten up if an original question came from the floor. I believe those students who sit like dull clods are a tremendous drain on a teacher's vitality and eventually make for a dull class.

Any success I've had in teaching has come from the students in class who are wide awake, thinking and are following the subject. These are the ones who stop me when I've made a mistake or stated a principle poorly. These are the ones who bring all their background subjects to the class and as such raise questions which stimulate additional questions and thoughts. These are the ones who make for successful teaching experience.

These same students are the ones I'd like to work with in a summer program. These are the ones, employers are looking and searching for. These are the ones which make a dull class come to life.

Students, quit being so bourgeoisie!

# Loggers' Games

### T. G. HARRIS, JR.

"I can run faster, jump higher, squat lower, move sideways faster, and spit further than any son-of-a-g\*@?! in camp," an old logger once boasted. Such a spirit has given America one of her most colorful athletic events the loggers' cames.

Loggers' games reportedly began in Paul Bunyon's logging camp about three centuries ago. The French-Canadian and Yankee loggers in the old logging camps used the contests to show their superiority in their working skills and to work off any excess energy. The most competent competion was thought to be the most manly, or the so-called "ball of the woods".

Competition served several purposes in the logging camps. For example, the man shown to be the best axeman in a camp was known as the "head-chopper" and received extra pay. The head-chopper's status was great and many such figures became legends in the "northwoods".

Competition between crews improved production, and high production was a goal of each member of the spirited logging crews.

Loggers competed in many contests also to show their prowess. Speed chopping, bow sawing, cross-cut sawing, log burling, log rolling, and tobacco spitting are just a few such events.

Speed chopping, once the important determiner of the head-chopper, came to be supplemented by cross-cut and bow sawing contests when saws were introduced to the "low woods" about 1890.



The spring river drives, when logs were floated down the rivers to sawmills and pulpmills, were dangerous and exciting. A contest known as log burling allowed the river men to show their skill on floating logs. In this contest, two competitors stood on opposite ends of a floating log and tried to topple each other by shifting their balance and spinning the log.

Log rolling was a contest in which teams of two men used peaveys to roll a log over a course. The fastest team won. This contest came into being when manpower was used to roll logs to the water's edge prior to floating them to market.

Loggers have long been notorious users of chewing tobacco and snuff. Inevitablely, loggers felt the necessity to determine who could spit the farthest or the most accurately. This contest is the loggers' most unique contribution to the world's repertoire of athletic events.

Loggers' games have not become a totally forgotten part of American folklors. These contests are held in virtually every part of the United States, in Canada, and in Australia. Some states, New York for example, hold state championshipt. Loggers' games are part of the Quebec Winter Carnival each year. The Association of Southern Forestry Clubs holds these events in the South annually.

Loggers and college students from the United States meet Canadian and Australian competition for the World Championships periodically.

The business of "letting daylight into the swamps" has become highly mechanized and has a lot of the old, rowdy, exciting spirit. Loggers' games are a way of preserving a part of the American heritage.

\* Editor's note: The above article was written for the Raleigh News and Observer to upblicize the Association of Southern Forestry Club Conclave at N. C. State U. this apring.





The Cathedral at Winchester

## Archaeology-and Wood Winchester, England

### A. C. BAREFOOT

Winchester, England-One of my most profitable and pleasant experiences came about as a result of the combination suggested in the title of this article.

In the spring of 1964, Professor Urhan T. Holmes of Chapel Hill and Professor Martin Biddle of Exeter, England, asked that we send over to England a wood technologist to work in their excavation project. They were interested in applying the techniques of dendrochronology to some huge timbers that Pro-

fessor Biddle knew were buried in an area of Winchester, England and which were to be completely excavated in the summer of 1964. By other means of archaelogical dating, these timbers were thought to have been in use during the 10th and 11th centuries. Professor Biddle, a mediaeval archaeologist in charge of the long range excavations at Winchester, knew of the work of Douglas in dating timbers of the U. S. southwest and was therefore anxious, if possible, to similarly get the exact year of cutting for the timbers in England, Such information as this would then allow him to match records of the Winchester archives with his ground observations and therefore more fully describe the life and culture of mediaeval England-a period with little written information to this day.

Professor Holmes had been in England the summer before and discovered the work of excavating going on in Winchester. He became enthralled with the project-interested in the house timbers preserved under the water table level-and proceeded to negotiate a joint cooperative project involving the Winchester Excavations Committee, the University of North Carolina and Duke University, Students and staff members of the two universities were invited to work in England and thereby Professor Biddle had one of the largest archaeological "digs" going anywhere; certainly with the largest number of Americans involved.

For the month of August then I prowled among the 11th century beams



Timber found in excavation

amined the oak chests for storing the old records of Winchester College and otherwise was introduced to the England of William the Conqueror. At this stage of our study we are vitally concerned with the development of a valid chronological chart for the tree growth of the Hamp-

in the cathedral at Winchester, ex-

shire Country area. Upon this chart depends our real hope for dating the timbers in the ground. Carbon 14 dating will be used to put the timbers in the correct century but only by the chart can we hope to find the exact year.

Since some of the house timbers are approximately one and one-half feet square, with bark intact on the outside edges, the year of cutting can be determined if the chart of such a varied micro-climatic region can be perfected. The timbers are now out of the ground and measurement studies in progress. The residual wood quality of the beams varies from highly decayed and spongy to a bright and solid character depaiding upon the state of preservation at the time of submergence by the water table.

To return briefly to the 11th century timbers in the cathedral before ending this note is to return vividly to an era which brings amazement to a forester today—oak beams, 1½ ft. x ½ ft. kx 45 ft. long, and roof rafters, 8 inches x 8 inches, with their original Roman numerals reoccurred placement in the roof, perform their task of supporting a heavy lead roof today as adequately as in 1093. The effects of the infamous Death Watch beetle are to be seen but so are those of the men who have learned to control the beetle.

Mr. S. A. Richardson of Richardson and Starling Ltd. was among the most fabulously interesting of the many delightful people I met during the summer. His stories of the Death Watch and the dry rot, Merulius laterymans; his excellent amateur cinemas of these and the bird populations of the English Isles; and particularly his enthusiasms for Iving will rank him among the most inspiring people I have ever known.

Of a different mold but equally alive and innovating was a former soldier from India, John Long, now an entomologist with Richardson and Starling, who was bubbling with an adventuring outlook on research in restoring historical objects of wood and metal. Mr. Richardson's son, Barry, and Lou Woodhouse, both inquiring wood technologists, rounded out the exciting daily crew I worked with—visits with the staff of London and Oxford Universities and the Princes Risborough Laboratory rounded out my association with scientific contemporaries.

At the time of writing this note Mr. Biddle has returned to the States and has just presented for us an enlivened seminar on the scientific disciplines involved in the archaeology of Winchester. Such an adventure in the broad but deeply interlacing of disciplines certainly had more rewards than I can truly recount to you here.

### (Continued from page 61)

mature trees in the areas that should remain in hardwood production. Hardwood markets are available now and should be utilized.

Lobbolly pine and slash pine plantations were thinned during 1964. Some of these areas were thinned the second time. The stands contain about 120 trees per acre now and may not require another thinning. About 10 years after this cutting conditions will indicate whether a log thinning will be desirable.

### Non-Destructive Testing of the Nose Cone of the Polaris Missile

by

#### B. A. JAYNE

It is unknown to many people in forestry and the wood industry that wood is one of the vital components of the intermediate range Polaris' missile. The nose cone of this particular missile is fabricated from nineply Sitka spruce plywood bonded with a light-weight epoxy resin film.

The cone functions to house the telemetry equipment used for missile guidance. This cone is essentially a paraboloid in shape. It is approximately 5 feet in diameter where it couples to the engine casing of the missile and tapers to a diameter of approximately a foot at the upper end.

Wood is used in this particular application because it provides for the communications equipment the necessary protection from extreme forces and temperatures during flight. Wood also is transparent to the highfrequency radio waves of the telemetry equipment, an essential property of a nose cone material. It is reported that the first two layers of veneer are badly charred in the brief 80 seconds following launching. Since, however, the mechanical properties of wood are relatively insensitive to high temperatures, the rigidity of the cone is maintained during this critical period. After this initial period the cone has served its function; it is separated from the missile which continues on to its destination.

There has been concern among personnel working with the Polaris as to the possibility of failure of the cone during flight due to internal imperfection. Missiles are subject to damage during transit from factory to firing tube. The nose cone is particularly vulnerable. Consequently, it is sometimes necessary to effect repairs of the cone. Although these repairs are completed under closely regulated conditions, internal flaws can be built into the plywood during the repair. Furthermore, even in

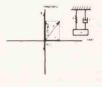


Fig. 1

the presence of close quality control in the factory, defective adhesive bonds can be introduced during fabrication of the cone.

Current research in the School of Forestry is directed toward the development of a vibrational non-destructive test that can be used to detect internal flaws in the cone. The vibrational test is based on the assumption that the physical properties of a vibrating medium are likely to be correlated with the presence of internal flaws. When a plate is subjected to periodic force oriented in a



Fig. 2

direction normal to its surface, oscillations of the plate are induced. At low resonant frequencies the
plate tends to oscillate at high amplitudes and develops a characteristic
nodal pattern. As the frequency of the driving force is increased the
vibrations assume a local nature. For example, a 30 x 30 x ½-inch plywood plate when driven at 3000 cycles per second tends to oscillate primarily in a highly localized area immediately surrounding the driving
point. Our research is conducted at frequencies in the region of 3000
cycles per second. It is anticipated that a flaw near the driving point will
tend to modify the measured vibrational properties.

The physics of vibration is concerned essentially with a mechanical system in dynamic equilibrium. It is well known from Newton's laws of motion that the resultant of all forces acting on a body is equal to the product of mass and acceleration of the body. A vibrating system is thought to be characterized by three twoigal internal forces:

- (1) elastic restoring forces
- (2) viscous dissipative forces

(3) inertia forces (mass-acceleration forces)

All of these forces must sum to zero for a body in dynamic equilibrium. Vibrational motion is always periodic. In the simplest case it is harmonic and hence can be represented mathematically by sine or cosine functions.

It can be shown mathematically that forces of the three types cited above always differ in phase from each other by 90°. This is due to the fact that elastic forces are displacement dependent, viscous forces are velocity dependent, and inertia forces depend on the acceleration. When a body such as a plywood plate contains all three types of internal forces, it is found that the force which varies periodically suffers a phase displacement from the velocity. The complex ratio of force to velocity is defined as mechanical impedance, Z

$$Z = \frac{iwt}{F_0e} = |Z| e^{it}$$
 $v_0e$ 

This equation relates a situation in which the phasor representing impedance does not lie along the real or imaginary axis but lies at some angle  $\theta$  to the real axis. As show in Fig. 1 the magnitude of Z and  $\theta$  are dependent on the relative contributions to Z from the mass, viscous damping and elastic restoring forces. Hence, the impedance Z, is measured a particular point of a body can be an indication of the characteristics of the material near the noint of measurement.

Experimental work in the School of Forestry has shown that the mechanical impedance of a plywood panel is modified substantially by the presence of an unhonded region (flaw) in the panel. To date relatively small unhonded regions four glue lines from the surface have been detected with relative case. Fig. 2 shows the experimental apparatus now being used for this research.

Future research in this area will be channeled into two areas. Experimental research will be oriented toward the detection of defects of other types, particularly poorly bonded regions that might be introduced during repair. In addition effort will be directed toward the development of a theoretical model which can be used to interpret the experimental data. This would appear to be an important part of the study as it can lead to more intelligent planning of experimental research.





(Continued from p. 55)

About this time we were getting so good, Mr. Carter wanted to show us off! We packed our bags and prepared to descend on Barrow Lumber Co. in Ahoskie, N. C. We were to stay a week

and do a study on board thickness. Our headquarters was to be a boarding house. The poor lady that owned the place must have been pretty desperate for business to allow us to stay. The first night we bought about four six-packs and commenced to play bridge. Short Roy even joined us. Myself. Dave Smith (known as the "Teenage Idol"), Rahman, Short Roy, and Spencer (Mr. Barrow's son) were the major participants in this marathon. About 3:30 there was no more beer, and we were too tired to shuffle any more so we went to bed. Boy was that room a mess in the morning! We arose around 5:30, God save us, and left the mess for the landlady to clean up. That was one hell of a day! We came back that night sunburned and still feeling the effects of the night before! Many other little incidents make us look back on Ahoskie with nostalgia. There is the time when Tom Helms and myself decided to take up tobacco chewing. Carl Collins, an old mountain boy, decided to take up the habit. One minute he was chewing along, all smiles, and the next thing we know he was green and running for the nearest building! For once he couldn't talk. Rahman managed to photograph one of Mr. Barrow's top secret processes. The funny thing was, he did it while Mr. Barrow was telling him not to!

No sooner had we gotten back in Raleigh from Ahoskie than we took off again. This time we were heading for the great state of Virginia! It was to be the Stanley Furniture Co. of Stanleytown, Va. who were the lucky ones. Since Virginia was on daylight saving time and North Carolina was not, we had to leave an hour earlier. In order to get there at 7 A.M. we had to leave at 3 A.M. After arriving in Stanleytown, we went immediately to work. After a hard days work, most of us were ready for bed. Almost, but not quite! Two fools, Tom Helms and Carl Collins, decided they were close enough to West Virginia to have a date that night there. They left at 5:00 and kept their dates. This trip led to Tom Helm's present engagement! Having driven all night and torn out first gear, they arrived back at 7:00! However, to make matters worse, nobody was up! They promptly went to sleep in the car, and we slept on in the motel. About 9:00 Short Roy awoke and proceded to inform us of how late it was and how fast we were going to get to the furniture plant. It was rather embarrassing for him and us when we finally arrived for work. A week was spent studying machine capacity and motion & time study. There were more tobacco chewing men gathered in that plant than I have ever seen anywhere! You had to really dodge between streams!

Eventually we finished our work and headed back to Raleigh to write up all this information in the form of a report. The rest of the practicum was spent writing and typing. I'm not sure what happened to those reports, but we never heard from them again. Evidently they weren't earth-shaking.

Looking back on this summer I can truthfully say that we had a lot of experiences, made many close friendships, and have memories we will never forget. It seemed like hell at the time, but often these are our fondest memories. The Sophomore Class has much to look forward to, although they will have a hard time measuring up to our experiences!

### (Continued from page 59)

from about twelve schools are expected, with our Forestry Club assuming the major task of hosting this meeting. It is impressive that the Club has earned some \$1,300.00 cutting pulpwood on weekends preparing for the Conclave.

3. A generous gift from the Paper Industry Manufacturing Association enabled us to bring two outstanding men to talk to the students and participate in seminars, Dr. S. D. Richardson, Director of the New Zealand Forest Experiment Station, was with us the week of Marchi 14th, and Mr. Martin Biddle, FAS, University of Exeter, Exeter, England, was here on a special visit the week of Marchi

The research program continues to grow. A major publication this year was Technical Report No. 23, Forest Research at North Cavolina State. This summarized the research program from its beginning up to the present and has received many commendations. Forest research has become an impressive program with us, involving a budget of \$491,000. with less than one-fourth of this coming from State appropriations. Especially gratifying to us has been the region-wide support for our research programs from industry and public agencies, as well as the substantial grants our faculty have received from the National Science Foundation, National Institute of Health, Office of Naval Research, and National Aeronautics and Space Agency. The recently enacted McIntire Stensis Cooperative Forestry Research Program is strengthening our research effort and should become of major importance as the appropriation builds un to scientificant size.

We are pleased that the budget now before the Legislature contains two capital improvement figures vital to our progress. The major item is \$125,000 of State funds for adding a third floor to Robertson Laboratory and to construct a new forestry building. We hope to get a matching NSF grant to raise this figure to \$1,500,000. A smaller item of \$55,000 will permit us to improve our Hill Forest camp and to convert storage space in Hodges Wood Products Laboratory into graduate laboratories.

## Treasurer's Report 1963-1964

## INCOME

172 members Contributions	@ \$3.00 Slocum Scholarship	Fund \$	516.00 382.00
		\$	898.00

### EXPENSE

Postage for Newslet	ter and Pinetum	14.70 92.00 60.00
	@ \$1.83	314.76
	\$	481.46
	STATEMENT OF ACCOUNTS	

STATEMENT OF ACCOUNTS	
Hofmann Loan Fund Slocum Scholarships	\$2,500.00
Previous Balance	\$1,049.84
Scholarship paid	350.00
	699.84
Added this year	416.54
	\$1,116.38



Congratulations to William W. Hood who was designated "Florida's Outstanding Forester" for 1964 by the Florida Chapter of the Southeastern Section of the SAF.



The children of James E. Webb, Jr. (1956); Becky, Julie, and Paul



Nellie, Mitch (1961), and young Tom Gurganus in front of the house on Wilbur Lake, Elizabethton, Tenn.

### Alumni News

1920

GRAEBER, R. W., Consulting Forester, self-employed, operating Guilwake Forests.
Ed. note (Mr. Graber was presented a special award "For a Life-time of Devoted and
Uniting Service to North Carolina Forestry" by the N. C. Forestry Association at its

Drating Service to North Carolina Fountier by the N. C. Forestry Association at its WOMADD. H. S. U. S. Forest Service.

G. W. Drating Service and Comparison of the Northeister, which are interesting the forest term of the Northeister, which are interesting the Comparison of the Northeister, which is not service and the Northeister of the Personnel. My wife and I treed together and are learning a but show our country.

"Thanks for the nice newsy Norwheister—a good fold: Has anyone figured out why we not not controlled to the nice newsy Norwheister—a good fold Has anyone figured out why we not professionally would not be maint in a future FINEXTUM. Or Noveletter!"

ARTMAN J. O. Tennessee Valley Authority

COOPER, William E., Virginia Forests, Inc.
"Tell Dick Preston I'm expecting a golf ball from him after the election returns
are all in!"

are an in:

AXWELL, Albert H., N. C. Division of Forestry.

"The new format of the Newsletter is great. We are all pleased at the priority on the new Forestry Building. Keep up th good work!"

TILLMAN, Paul W., N. C. Division of Forestry. 1933

HAFER, A. B., Consulting Forester, self-employed,

CROW, A. Bigler, Professor of Frenetry, School of Frenetry, Louisians State Univ.
"Have been teaching ultivations and protection courses an LSU for nearly 19 reserv.
Have my share of graduate students, too. Academic life has been stimulating and retractions of the state of th

MITH, Walton R., USFS, Southeastern Forest Experiment Station.
"It looks as though some enterprising faculty member inclined towards journalism should write up a detailed history of N. C. State Forestry School before some of the should be sufficient to the state of the state of

1935

JACKSON, G. E., Cansoliting Forester.

"It has been my pleasure to see several of the "Old Grads" this year and the one thing that impresses me most is that they are all showing the effects of 30 years on and Margaret's join me in sending our best requests to feasily, students, all grads."

PAGE, Rofins H., Principal Wood Scientist, Southeastern Forest Exp. Station.

PAGE, Rofins H., Principal Wood Scientist, Southeastern Forest Exp. Station.

of the remaining three will attend N. C. State".

1936

AIKEN, W. C., USDA, Soil Conservation Service. "Have been made woodland conservationist for Alabama and have moved to state office." 1917

BRIDGES, W. J., Jr., Union Bag-Camp Paper Corp.

"Office in N. Y. and family in Virginia-best of lock to all my friends!"

GREILOCK, A. J., Real Estate Broker.

"Time marches on. Number one son is now a M. D., Number two a chemist—Number one daughter is senior at Univ. of Ga; wife and I by ourselves again, just like

WHEELER, W. H., Jr., Carolina Power and Light Co.

HUBBARD, J. B., N. C. Forest Service. SMITH, George E., Jr., USDA, Soil Conservation Service.

BEASLEY, W. L., Jr., Beasley Lumber Products. JOLLAY, Ted M., Forestry Consultant.

HARLEY, Ben R., General Manager, Turnell & Morgan Pulpwood Dealers. INGRAM, S. O., Jr., Col., Ed. not (Colonel Ingram stopped by the School—be is now stationed in Germany and has a daughter attending N. C. State University).

1941

SPIKER, Theodore F., U. S. Marine Corns.

LEYSATH, Elwin F., State of Vermont.
"Still county forester for Rutland County."
THURNER, J. T., Gliman Paper Co.

1943

ETHERIDGE, James N., Self-employed.

1944

HOLCOMBE, Robert A., National Lumber Manufacturers Association.
"Enjoyed seeing the faculty at the 1964 FPBS meeting in Chicago. My fingers are crossed with the rest of you for the new Forestry Building, Unfortunately, I'm one of the few people in Washington who has no influence—just fond hopes and good wishes."

1946

1949

BLACKSTOCK, C. E., U. S. Forest Service.
BOYETTE, Richard C., The Physwood Co., Division of Williams Furniture Corp.
"We bear all kinds of reports about the terrific progress being made by the School.
"We bear all kinds of reports about the terrific progress being made by the School.
The County of the School of the School of the School.
The County of the School of

1949

ALTMAN, James A., American Pulawood Association.

BOYCE, Stephen G., U. S. Forest Service, Central States Porest Exp. Station, "Recently moved to Columbus, Obio to accept a new challenge in the Div. of Timber Management and Fire Research for the Central States Forest Exp. Station." Theosity moves of Fig. Research for the Central States with the HARPER, I.O. International Paper Co.

"Mass being around the School-helds to everyone. Dr. Maki, I see a forest farner of the state of t

ARBER, John C., USFS, Southern Forest Experiment Station.

"Changed locations last June after 11½ years—I'm now Project Leader for the Institute of Forest Genetics at Guifport, Miss. I see more N. C. State people now. Enjoyed seeing Dean Preston and other "Staters" at the SAF meeting in Denver. The "welcome

secting Dean Preston and other "Staters" at the SAF meeting in Denver. The 'welcome BRIN's coult" p. Gleen P. Beank Insurance Agency.

CAVANATORI. Martyn J. Champion Papers, Inc.

PIELPS, William R. U. S. F S. Lake States Forest Exp. Station the cold north
Anado of Wisconsin. I have been working for the Lake States Forest Exp. Station on their autiliotic and chemical central of blatter runt on sastern white pine project for the statistic and chemical central of blatter runt on sastern white pine project for the statistic and chemical central of blatter runt on sastern white pine project for the statistic project for the st

SMITH, Major Herbert H., U. S. Army.
"Am desk officer, material div. office of military assistance, work assistance programs in Bolivia, Colombia, Chile, Ecuador and Peru." working with military

COUSINS, Charles, Plant Manager, Lea Lumber & Plywood, Inc.

"I follow with interest the continued development and extension of the Wood Tech.

curriculum. The field is wide open for adequately trained men. Our total woodworking
industry needs a tremendous amount of technical help. Do your best for us!"

ESTEP, ERlon M., USFS, Pacific Northwest Forest & Range Experiment Station.

industry needs a tremendous amount of technical help. Do your best for usi" ESTEP, Eldon M., USFS, Pacific Northwest Forest & Range Experiment Station. GENTRY, B. W., Self-employed—Consulting Forester. MASTEN, James C., Acme Wood Corporation Forester. "Riegel mill is still about out of wood—we're havin' to work every "Sadey" and we owes our soul to the "Company Soi"! Best wishes to all!" REID, James R., Jr., Superior Stone Co.

### 1059

HUGHES, Samuel M., Riegel Paper Corp., Woodlands Public Relations & Safety Co-HUGHES, Samuel M., Riegel Paper Corp., Woodmans Public Resultions & Saurey Cor-ordinator.

ordinator.

ordinator.

argued to the Corp. Woodmans Saure stand and duties as before. See a lot of familiar faces every year and enough new ones to keep it interesting. Did see John Leroy this fall for the first time since school. We decided that with a little practice our horse shoe prowess might be regained. Hope wo don't have to prove it." JACKSON, John V. Virginal Division of Forestry.

### 1953

DORWARD, R. E., Hiwassee Land Co. ADAMS, P. W., Federal Land Bank of Columbia,

### 1954

It is with deep regret that I report the death of H. J. Andersen on December 20 in the Veterans' Hospital at Durham. Jim had suffered a heart attack as few hours earlier. At the time of his death he was working toward a doctorate in forestry here at State. He is survived by his wife, Betty Bridgers Andersen, who may be reached at 915 Burch Ave., Durham, N. C. (RCB).

ARNOLD, Trurcon W. Weyerhenner Co., N. C. Brinlion, W. Marcol of Primoth in August, An working in Force Construction now," BARKETT, James P., Univ. of New Hampshire.

BARKETT, James P., Univ. of New Hampshire.

2. childrens, boy and grilly last August and I'm a proud daddy. We now have constructed by the control of the childrens. And the childrens of the childrens. He would be considered the childrens of the Philippines in June 1986—after half" to sed any work as forestry advisor to the Philippines in June 1986—after half" to sed any work as forestry advisor to the Philippines in June 1986—after half" to sed any work as forestry advisor to the Philippines in June 1986—after half to be considered to the Philippines in June 1986—after half to be considered to the Philippines in June 1986—after half to be considered to the Philippines in June 1986—after half to be considered to the Philippines in June 1986—after half to be considered to the Philippines in June 1986—after half to be considered to the Philippines in June 1986.

1965—after that!"
DERRO, Joseph J, Jr., Pentucket Regional School, West Newbury, Mass.
"Northing too new to report—still plagatic along as a biology-earth science teacher."
NORTHING too new to report—still plagatic along as a biology-earth science teacher."
NORTHING TO SERVICE AND THE SERVICE SERVICE AS THE SERVICE AS T

"Creedings to all."
SERWELL, CAT STATEMENT Paper Co., St. Marys Kraft Division.
"Basiness is good in women's wear. Get all the woods I need on the weekend. Have
"Basiness is good in women's wear. Get all the woods I need on the weekend. Have
"Basiness is good in women's wear. Get all the woods I need on the weekend. Have
"day of having enough kids to work the farm is past-ours ride the horses all day
Saturday and play is the creek Sanday, All I need is to get my tractor, "programmed,"
one nightly locking and 2 meals to anyone passing who wears boots and smells
WRIGHT, Green S., Jr., SSTS, Renne Station, Marblemount, Wash.

### 1955

CHAPMAN, John F., UEFS, Benila Rauper Station, Clinton, Montana, "Still at the man-still not sure whether winning or losing," COBB, Fleds W. Jr., Bept. Fleat Pathology, Univ. of California, 1997, Control, Commission, 1997, Commi

### 1056

ILIAN, Leonard A., Jr., N. C. Forest Service.
"Sounds as though the School is doing fine, as usual—we are also, and expecting
our third in Max."

MASASCHI, John E. U. S. Plywood Corp.. Currently manager of the Todout Development and Sales Promotion Dept. of the Oranceburg Division of USP. Todout Development Officer, Juneau, Alaska. WEBR, James E., Jr. U. S. Forest Service, Employee Development Officer, Juneau, Alaska. "This is our third winter in Alaska. So far we have had over 180 inches of snow at see level! We like Alaska and our first "Goordoogsh" arrived last June 20.

DOWLESS, V. Gerald, Container Corp. of America.

"Spent 2 years in USAF, back for 2 years at State and decree in PPT '61. Currently KELLINGER STATE of the Container Corp. Two bors and only one wife!"

KELLINGER STATE OF TWO STATES AND ASSESSED OF TWO ASSESSED OF T

### 1958 1959

DAVIS, T. Paul, South Mountain Pulpwood Co., Inc. JACKSON, Donald G., Broyhill Furniture Factories. "An now plant manager of Broyhill's new furniture parts plant in Summerville, S. C."

"An now plant manager of Broyhill's new furniture parts plant in Summervine, S. C. LUPIOLD, Hoth, M. Millisen Feerstry Co., Consulting Forester, Contemplating branch office in the Hickory-Asheville area in near future. Multiple shand use must important in our management of varied private ownerships and some sections of the Carolina, forestry is becoming a by-product while time determines the ultimate of the Carolina, forestry is becoming a by-product while time determines the ultimate of the Carolina, forestry is becoming a by-product while time determines the ultimate of the Carolina, forestry is becoming a by-product while time determines the ultimate of the Carolina, forestry is becoming a by-product while time determines the ultimate of the Carolina, forestry is becoming a by-product while time determines the ultimate of the Carolina, forestry is becoming a by-product while time determines the ultimate of the carolina of the

land usage.

SCANLON, David H., III, Firestone Plantations Co., West
"Have daughter, Elizabeth Peirce, born April 24, 1964."
TABOR, Christopher A. (MS '64), Dow Chemical Company.
WELCH, Richard V., Union Bag-Camp Paper Corp. West Africa.

HOST, Bouald M. S. C. National Bank, Pickens, Wyrinia, BBAKE, Robert F. The Observation of the Control of the Children of the Control of the

LOVIN. Henry, Lancatter, S. C.

LOVIN. Henry, Lancatter, S. C.

M. G. Minn, John S. C. Lancatter, S. Lancatter, S. C. Lancatt I am convinced that our own expanding population is going to put great pressure of the land resources of the U. S. and that there is much to be learned from othe countries in regards to multiple land use and real conservation of the limited resource. from other WALLINGER. ALLINGER, R. Scott, West Virginia Pulp and Paper, Charleston, S. C.

### 1961

BRADLEY, Edwin W., Jr., Panife Or, a Foundry Co. CUNNICHAM, Herry, N. C., Essent Services "My wife, Nancy, Henry, Jr., Sally and I moved to Elizabeth City to assume a new job as Service Forester." DEATON, Robert B., St., Begis Paper Co., Jacksonville, Florida. GMIMSLEY, Daniel L., U. S. Army Corps of Bagineers, Henderson, N. C.

GURGANUS, Mitch. U. S. Forest Service.

GURGANUS, Mitch, U. S. Forest Service, we work: This in it very good up here-were living beside Willier Lab. Helio to everyone.

LANGSTON, Edward H., Captain, U. S. Army.

LANGSTON, Edward H., Captain, U. S. Army.

"Theolice a new plot, I have added a wife. Annet, and a con. Mark Edward."

SYKES, Fuell W. Jr., Graduate student, Dept. of Zookspy, N. C. Statt,

SYKES, Fuell W. Jr., Graduate student, Dept. of Zookspy, N. C. Statt,

Commenced a graduate program in animal codocy in Supember." August 7, 1964.

### 1962

BULLARD, Robert Paul, U. S. Forest Service, Willows, Calif.

BURGESS, R. M., Georgia Kraft Company, Woodlands Division, Rome, Ga. CONNOR, Buddy W., Cox Woodlands Co., Augusta, Ga. CRAIG, William S., U. S. Forest Service.

CONNOR, Budde W., Cox Woodlands Co., Augusta, Ga.

"Back to the mountains of weetern North Carcultus after an eight-month job on the
"Back to the mountains of weetern North Carcultus after an eight-month plot on the
Findering may be a trained to the First State of the First State
Continued and Continued C

1963

It is with sorrow that I report the tragic death of Jason H. Dunshee in a pick-up necledent shortly before Christman. He was on his way to work when he crashed head-on with another vehicle. Jason is survived by his wife and one child of Pantego, N. C. and his parents, Mr. and Mrs. Guy Dunshee, also of Pantego, (RCB)

BRODDEN, Rey O., U. S. Forest Service, Cover d'Alene National Forest.

MANNING, Herry L, Jr., U. S. Forest Service, Avery, fashout

MCCHARY, James E., Virginia Dept. of Highways, Suffolk.

MCCHARY, James E., Virginia Dept. of Highways, Suffolk.

MCCHARY, James E., Virginia Dept. of Highways, Suffolk.

MCCHARY, James How. III. S. Forest Service (Service Without pay)—titing me through graduate

school at Duke. I'm currently working for a MF in Forestry Business Mgt. under Dr.

James Yoho. It's a two-year program with 53 credit hours of economics!"

### 1964

BENVENUTI, Roger, The Gildden Company, Addison, Ill. MOORE, Bernie, Farmville, Virginia
"A son, Darrell Wayne, June 22 ZOBEL, Donald B., Department of Botany, Duke University,

## Alumni Directory

W. B. Barnes
W. B. Barnes 6149 Primrose Ave., Indianapolis 20, Ind. C. A. Bittinger Deceased G. K. Brown 710 N. 6th St., Wilwanke, Wis.
E. R. Chance Deceased
T. C. Evana, MS '21 Dir. Bromstriend Service, U. S. Porent Service, So. Buildings, C. B. W. Gruber 120: 30 Millenguint, J. C. W. Michigarium, S. D. C. W. Gruber 120: 30 Millenguint, J. C. W. W. Schmidt, M. S. D. C. W. E. Harding S. G. Kraft Co., Director Wood Procurement, Rt. S. Rome, G. S. G. Horner A. D. G. Kraft Co., Director Wood Procurement, Rt. S. Rome, G. J. G.
R. W. Graeber 303 Hillcrest Rd., Raleigh, N. C. (Consultant)
S. G. Hile Deceased
H. E. Howard Apt. A-1003, 1111 Army-Navy Dr., Arlington, Va. 22202 (USFS)
D. Y. Lenhart West Virginia Pulp & Paper Co., 230 Park Ave., New York 17 N. Y.
D. J. Morriss S203 Fort Foote Rd., Washington 23, D. C. 20022 (USFS)
H. G. Posev, MS '50 Dept. of Forestry, Auburn Univ. Auburn Ala.
H. C. Tolking and S. C. B. Ziselman S. So E. Brood St., Tamagua, Pennsylvania
F. F. Weight 40 Jackson Ave., Middletown, N. Y.
C. B. Zizelman 500 E. Broad St., Tamaqua, Pennsylvania
Class of 1931
N. B. Alter Chattachoochee National Forest, Gainesville, Georgia
N. B. Alter Chattachoechee National Forest, Gainesville, Georgie H. E. Altman 25 Missiasippi Ave. Silver Springs, Md. J. O. Artman 110 Hilltop Lane, Norris, Tenn. (TVA) G. W. Barner
J. O. Artman 110 Hilltop Lane. Norris, Tenn. (TVA) Decassed J. A. Brance 28-80 Chadin Member Decassed J. A. Branch 28-80 Chadin Member
W. T. Buhrman 5001 Kenwood Ave., Baltimore 6, Md.
H. A. Foreman Marshalls Creek, Pennsylvanja
D. B. Griffin Box 605, Front Royal, Virginia H. J. Longhead 399 Vandarbilt Rd. Rilmore Station Asherilla N. C. (redical)
C. F. Phelps 204 Lakewood Drive, Richmond 29, Virginia
G. K. Slocum, MS '32 Lenight St., Allentown, Pennsylvania
H. J. Louchead 199 Vanderbill Ed., Biltmore Station, Abbrett. 1994. Virginia G. F. Phelps 204 Lakewood Drive, Richmond 29, Virginia G. K. Slocum, MS '22 Decased G. K. Allentown, Pennsylvania G. K. Slocum, MS '22 Decased W. B. Ward 115 School Lane, Springfield, Pennsylvania (USFS)
Class of 1932
W. E. Cooper 301 E. Franklin St., Richmond 19, Va. (Virginia Forests, Inc.)
W. E. Cooper 301 E. Franklin St., Richmond 19, Va. (Virginia Forests, Inc.) A. A. Grumbine 411 Carriage Dr., N.E., Atlanta 5, Ga. (USFS) J. J. Kerst Box 77, Vielsburg, Miss. (US Corps of Engineers)
A. H. Maxwell 305 Tate St., Morganton, N. C. (NCFS)
F. J. Miller 1234 Brooks Ave., Raleigh, N. C.
G. K. Schaeffer 1612 Springbrook Dr., Decatur, Georgia
P. W. Tillman 2832 St. Mary's St., Raleigh, N. C. (NCFS) W. H. Wavriner II S. Farner Sarrien Independent
J. J. Kerst         Box 77, Videsburg, Wine: UIS Corpus of Engineers)           A. H. Maswell         56 Fate St., Morganian, N. C. (KUPS)           C. G. Rover         106 Pann Ave. Watsonfown, Pennylvanis           G. K. Schaffer         105 Springlavols, Pro., Decstar, Georgia           W. H. Warriner         Surgestive St. Springlavols, Proposition, St. College           W. H. Warriner         U. S. Feerst Service, Jackson, Missistippi           Lather Williams         Box 25 Feer Springlavols, Pol., Monros, N. C.
Class of 1933
J. C. Blakeney
W. J. Clark 2811 Barmettler, Raleigh, N. C.
A. B. Hafer Consulting Forester, Box 655, Laurinburg, N. C.
J. C. Bikeneg         1358 Sterling Rd. Charlotte, N. C.           W. J. Clark         2811 Barmetter, Baleta, N. C.           T. C. Croker         Bes 311, Brewton, Als.           A. B. Hafer         Consulting Forester, Box 628, Laurishure, N. C.           O. W. Petikrew         Route 5, Rableth, N. C.           K. D. Sterling         Sterling, N. C.           R. J. Seltz         S55 Jackson SS, Gastonia, N. C.           A. I. Selter         535 Tally Drive, Chambles, Coorgia           R. A. Wood         18 Buckingham Court, Asheville, N. C.
R. J. Seitz 825 Jackson St., Gastonia, N. C.
A. L. Setser 5358 Tally Drive, Chamblee, Georgia R. A. Wood 18 Buckingham Court Askerille N. C.
The state of the s
Class of 1934
W. J. Barker 112 Strode Circle, Clemon, S. C. E. E. Chartfold 112 Strode Circle, Clemon, S. C. E. E. Chartfold 112 Strode Circle, Clemon, S. C. E. E. Chartfold 112 Strode Circle, Rt. 6, Marcel, Miss. A. R. Crows 112 Shellerars Rd. Ashers, Rd. Ashers, Rd. Ashers, Rd. Ashers, Rd. A. R. Crows 112 Strode Circle, Rd. Rd. Rd. Crows 112 Strode Circle, Rd.
W. J. Barker 112 Strode Circle, Clemon, S. C. E. E. Chartfold 112 Strode Circle, Clemon, S. C. E. E. Chartfold 112 Strode Circle, Clemon, S. C. E. E. Chartfold 112 Strode Circle, Rt. 6, Marcel, Miss. A. R. Crows 112 Shellerars Rd. Ashers, Rd. Ashers, Rd. Ashers, Rd. Ashers, Rd. A. R. Crows 112 Strode Circle, Rd. Rd. Rd. Crows 112 Strode Circle, Rd.
Class of 1934

Class of 1935
H. F. Bibbop.  Weodland Ave, Marion, N. C.  V. W. Comfort  F. J. Calabator  S. W. Comfort  F. J. Calabator  S. W. Comfort  J. W. S. Fronts Service, Onlipsort, Missistipal  F. J. Calabator  S. L. Calabator  S. L. Calabator  D. R. Douglab  Box 1628, Station A. Anderson, S. C. 1Mend Corp.)  J. R. Carlott  J. R. Crewe  J. R. Soil Conservation Service, Novetch, N. Y.  J. R. Stitzle  J. R. Sti
Class of 1936
A. G. Adman W. C. Alleen P. O. Box 131, Auburn. Ala. (SCS) O. T. Ballenties F. O. Box 131, Auburn. Ala. (SCS) O. T. Ballenties F. O. Box 131, Auburn. Ala. (SCS) O. T. Ballenties F. O. Box 131, Auburn. Ala. (SCS) O. T. Ballenties F. O. Box 131, Auburn. Ala. (SCS) O. T. Ballenties F. O. Box 131, Auburn. Ala. (SCS) O. T. Ballenties F. O. Box 131, Auburn. Ala. (SCS) Decamage F. O. Box 131, Auburn. Ala. (SCS) O. D. Box 131, Auburn. Ala. (SCS) O. S. K. Hadon O. Box 131, Auburn. Ala. (SCS) O. S. Lawren L. N. Massey Carolina Power and Light Oo. Ra'esh, N. C. D. M. Parker D. M. Parker O. M. M. Welsh O. Country Club P. New Bern. N. C. D. M. H. Ulbey O. Country Club Rd, Wilmington, N. C. Class of 1313
Class of 1937
W. J. Bridges, Jr.   Color

H. L. Nichelson Unknown
Class of 1938
J. A. Belton H. C. Francus J. S. Campbell S. Campbell S. Campbell EB 2, Sedler Ed, Franklin, Virginia C. J. Cheslock J. C. Che
W. W. Wooden Atlantic States Forestry Co., Carthage, N. C.
Class of 1939
C W Assets
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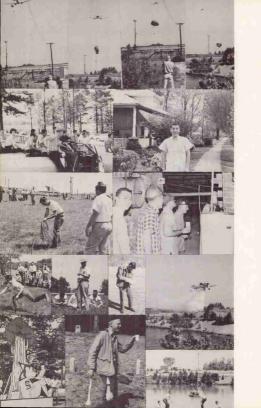
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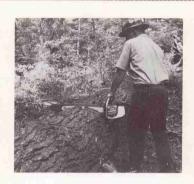
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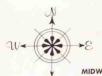
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