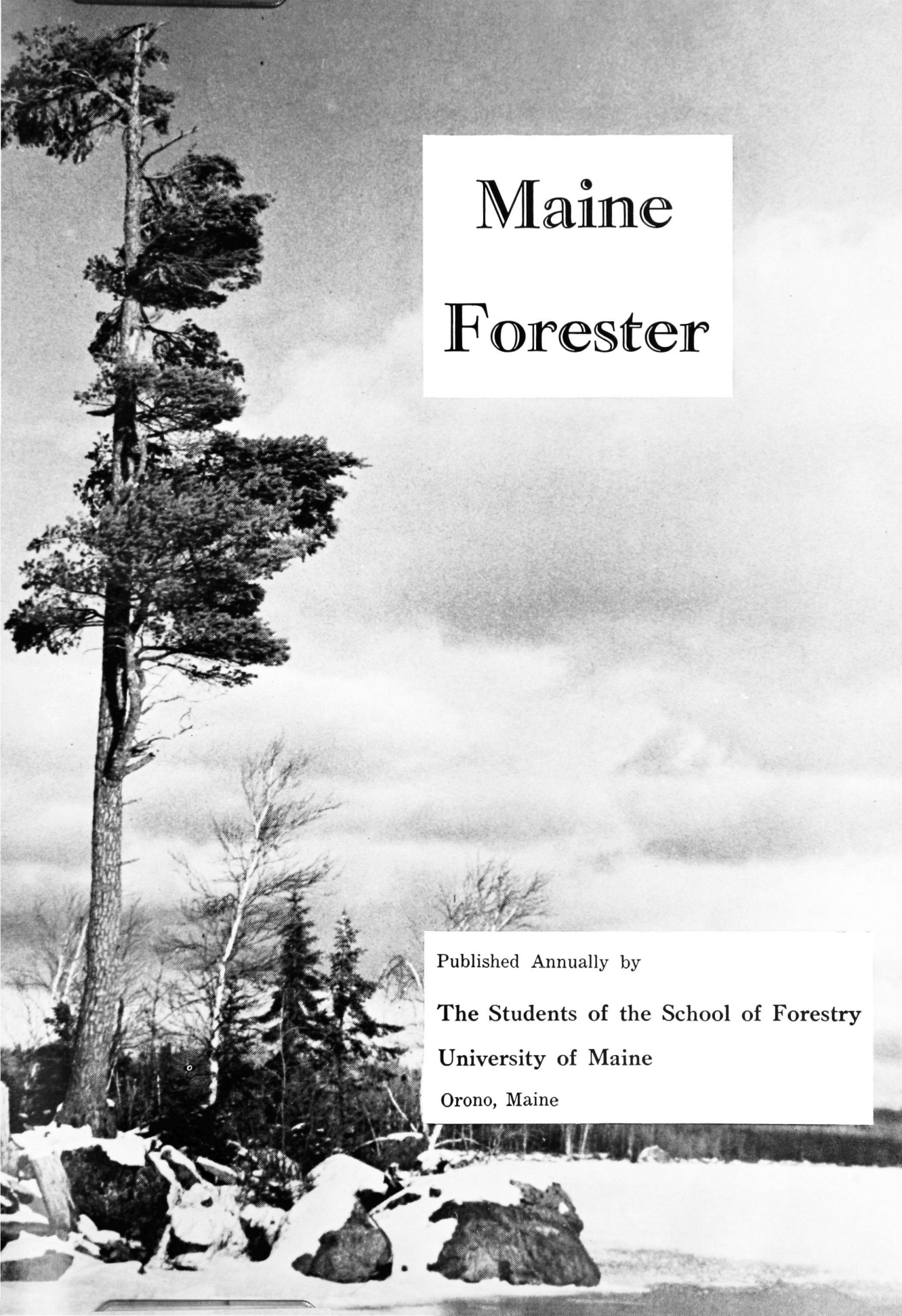
Maine Forester

THE RIVER DRIVERS

1961



Maine Forester

Published Annually by

The Students of the School of Forestry

University of Maine

Orono, Maine

OUR THANKS

The School, its students and faculty, wish to express our thanks to the following industries and land owners whose generous contributions have made the 1961 *Maine Forester* possible.

CONTRIBUTORS

E. D. Bessey & Sons, Timberlands

Dead River Company

Diamond National, Oakland

T. L. Dickson

F. W. Fortin Co.

Maine Dowell Corporation

M. S. Hancock, Inc.

Moosehead Furniture Co.

Oxford Paper Company

Penobscot Development Co.

Pjepscot Paper Co.

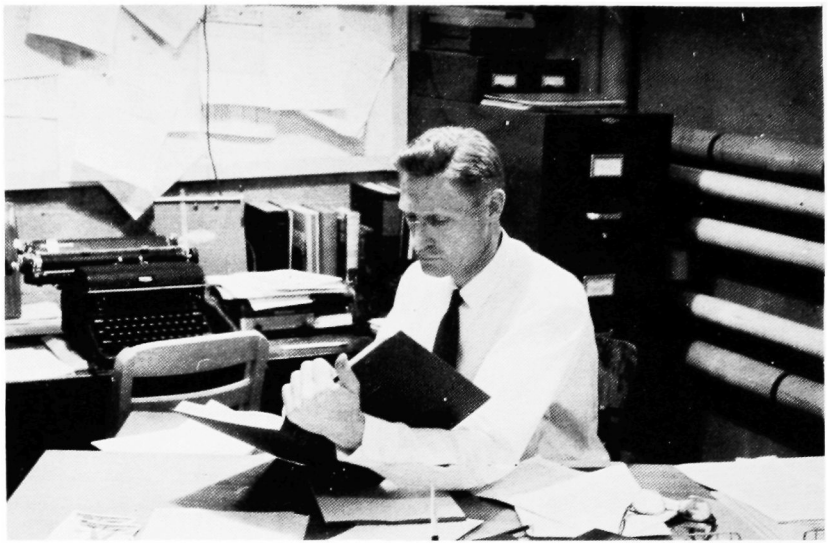
Prentiss & Carlisle Co.

Sewall Company

The paper used in this yearbook is the generous contribution of the S. D. Warren Company of Westbrook Maine.

Pictures given by the Great Northern Paper Company, the Maine Publicity Department, and students added much to this year's book.

DEDICATION



The Maine Foresters are proud this year to dedicate their yearbook to Associate Professor of Wildlife Management, Horace F. Quick. A list of Professor Quick's activities while at the University of Maine and in the past, reads like an adventure saga. Dr. Quick has been a government hunter for the U. S. Fish and Wildlife Service in Colorado, an army instructor of ski and mountain troops, a rider for the Gunnison Cattle Association in Colorado, a researcher in the Northwest Territories of Canada, a researcher for the U. S. Fish and Wildlife Service in the control of range rodents and livestock preditors, and has just recently returned from Africa where he conducted a population analysis of elephants in the national parks of Uganda.

DR. HORACE F. QUICK

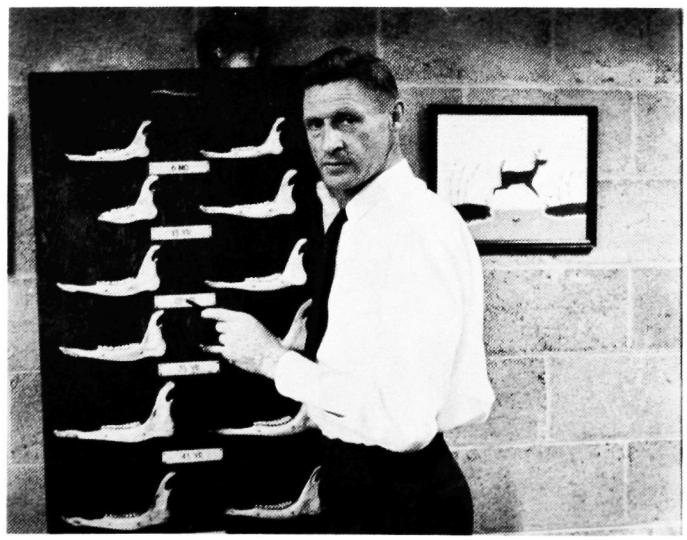
Dr. Quick received his B. S. in Forestry from Penn State in 1937 and did postgraduate work in zoology at Syracuse University. He received his Master of Forestry degree from the University of Michigan in 1940 and Ph. D. in Wildlife Management from the University of Michigan in 1955. Before coming to the University of Maine as an Assistant Professor of Wildlife Management in 1950, Professor Quick taught at Colorado A. and M. as an Assistant Professor of Forestry.

Professor Quick will long be remembered by Maine Foresters for his love of nature and his ready wit. The excellent wildlife movies he has taken in the U. S. and abroad have provided interesting and informative entertainment at many Forestry Club meetings and Wildlife Management classes.

Dr. Quick is married and has a young son. His wife is a well-known big game hunter and outdoorswoman in her own right. Their son is a budding naturalist and accompanied his parents on their recent safari in Africa where he collected and mounted many specimens on his own.

Dr. Quick has done much research work during his career. Much of his work has been for the U. S. Fish and Wildlife Service and the Maine Department of Inland Fisheries and Game. He is the author of many publications on various wildlife management problems.

Dr. Quick has always been a fine example to all the students in the School of Forestry by his dedication to his work and his love and respect for nature. Congratulations and the best of luck in the future, Professor Quick.



SCHOOL of FORESTRY

UNIVERSITY OF MAINE

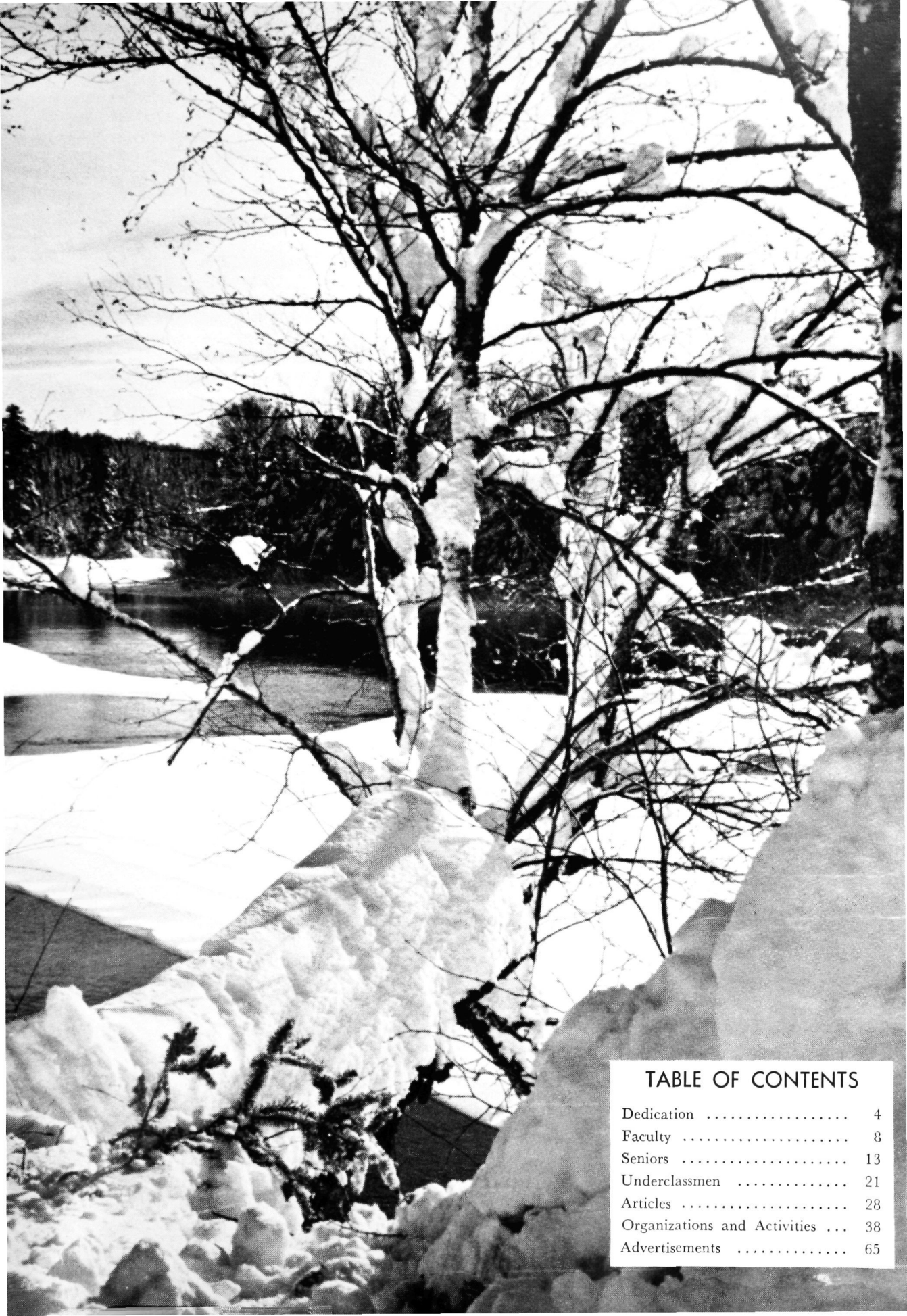


TABLE OF CONTENTS

The School of Forestry 1960-1961

By A. D. NUTTING, *Director*

The school year of 1960-61 has been a busy one. In addition to regular programs, revising curriculum, a new forestry building and a new summer camp site have been given much time and consideration.

The staff is proud of the record made by the class of 1961. Nearly half of the members have achieved high academic standing. Two members of this year's group have had one semester of all A's. More men were eligible for Xi Sigma Pi by normal chapter point standards than could be included in 25 per cent of the class. The staff expects much from these men as they take their places in the forestry profession.

Associate Professor Horace Quick returned in September after a year's leave of absence studying the effect of elephant damage on mahogany timber production. This gave him an opportunity to study elephant populations in support of his other research on population dynamics.

Professor Harold Young has received his promotion from Associate to full Professor.

Two additional members were added to the staff in July, 1960, Chester Banasiak as Assistant Professor in Wildlife and Assistant Professor Samuel Brock in Forest Economics who are devoting full time to research. Professor Banasiak is a well known research worker on deer management and is continuing the program that he has been conducting for several years as a research biologist with the Maine Department of Inland Fisheries and Game. Professor Brock is in charge of a study on the use of Maine lumber and has been assisted by Richard Hale, Maine '47. This study was made possible by a grant from the Small Business Administration. Teaching forest economics will be part of Professor Brock's program in the future.

Professor Baker is continuing his work on wood density and Professor Beyer on the New England White Pine Site Study. Professor Plummer is working out plans for the establishment of a tree seed orchard on the Weed property in Veazie. Professor Griffin, in cooperation with the Northeastern Forest Experiment Station of the U. S. F. S., is undertaking a study on balsam fir thickets. Management research on Indian Township is under the direction of Professor Randall.

Professor Coulter and Professor Mendall are carrying on wildlife management studies through the Cooperative Wildlife Research Unit with the assistance of four graduate students.

We have been fortunate to have the experience of Professor Ashman as acting Extension Forester while Extension Forester Lewis Bissell has been doing graduate work at Oregon State.

The gift of a new summer camp site by the St. Croix Paper Company on Long Lake near Princeton has added new opportunities to the summer camp program. This site provides a point of land with a hardwood ridge surrounded by water on three sides and offers opportunities for water safety and water recreation programs. The development of the site depends on money being made available to construct new facilities. Access road construction is underway. The site, with proper facilities added, will provide opportunities for many uses in addition to summer camp. It is well located for short course instruction, vocational and youth training.

A new forestry building that will cost $980,000 has been requested by the University from the Legislature. Laboratories and offices are badly needed by the School in order to meet present standards for forestry and wildlife training. Our staff is now housed in three different buildings. The proposed building provides space for housing U. S. Forest Service and Inland Fisheries and Game Research workers as well as the University staff. Success depends on state finances and strong backing from alumni and forest industries.

For the past two years, the Forest Education Committee of the Society of American Foresters has been studying forestry training and at the same time the School staff has been reviewing Maine's program. The staff has submitted curriculum proposal changes to the Board of Trustees through Dean Libby of the College of Agriculture. The program provides for

a basic core of subjects with sequences in forest land management, forest sciences, utilization or wood business, and wildlife management. All forestry sequences and the land management sequence in wildlife are geared to meet the Society of American Foresters' membership requirements. Major reasons for the proposals are to provide students with an opportunity to select courses in their chosen field of forestry and to have more chance for electives. The teaching load, if anything, will be lessened. Staff advising time, necessary with students, will be greatly increased. Some of the major course changes are Policy and Economics which will be divided into two courses. Forest Management will become Timber Management and separated from Valuation. Elements of forestry (Fy 1, 2) will become Introduction to Forestry with a three hour field laboratory devoted largely to measurements in the first semester. It is hoped that part or all of the proposed program can be started in the fall of 1961.

Recreation on private forest land is the subject of Bruce Stewart's thesis for his master's degree. This indicates the School's interest in the multiple use of Maine forest land. Temple Bowen, another graduate student, is studying the growth of red spruce after selective cutting. It is hoped that the results of his study will provide improved indicators for timber marking rules in red spruce stands. It is anticipated that their combined research will stimulate other studies in the same areas.

The School was very pleased to receive from the James W. Sewall Company, of Old Town, Maine, the permanent loan of a Kelsh Plotter which will greatly benefit laboratory work in Photogrammetry.

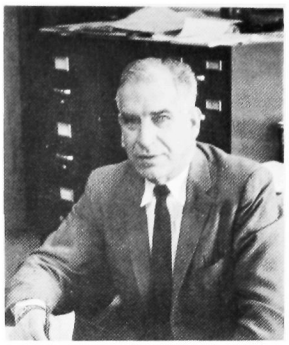
Dean George Garrett of Yale visited the School in the spring of 1960. He provided the University with many helpful suggestions for the improvement of its training program and facilities.

Students and faculty were encouraged by the visit of Dr. Bruce Zobel, Forest Geneticist of North Carolina State University, provided through the Society of American Forester's Visiting Scientist Program. He emphasized the opportunities and needs in both basic and applied research.

Last year in the Maine Forester I wrote about the challenges and opportunities in forestry and the need for better trained foresters, more timber growing, and research. Our School program this year indicates that we are making every effort to help students prepare to meet the needs and opportunities of their profession.

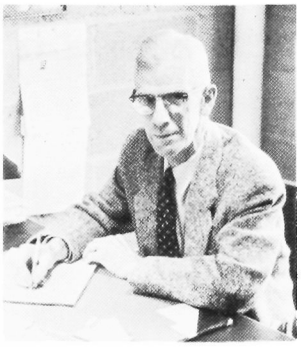
"SNAFU"

FACULTY



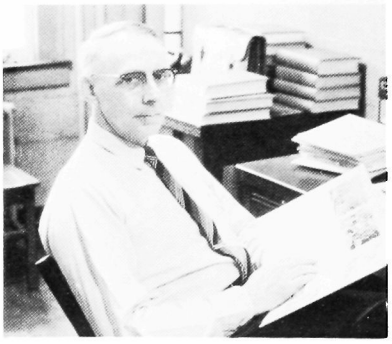
Albert D. Nutting

Director, School of Forestry



Professor Gregory Baker

Wood Technology

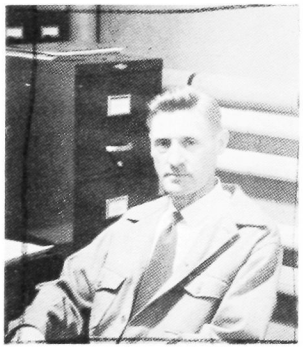


Associate Professor
Frank K. Beyer

Forest Products

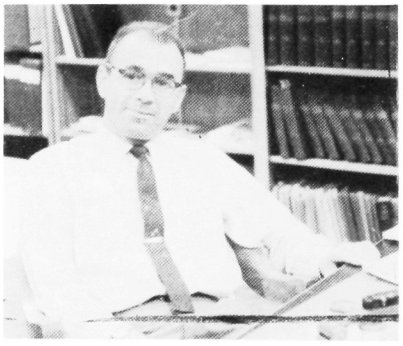
Associate Professor
Arthur G. Randall

Forest Management



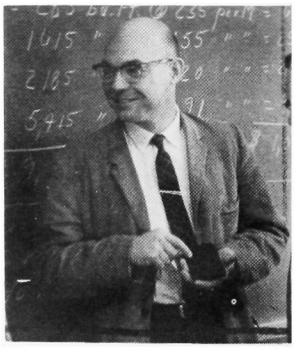
Associate Professor
Horace F. Quick

Game Management



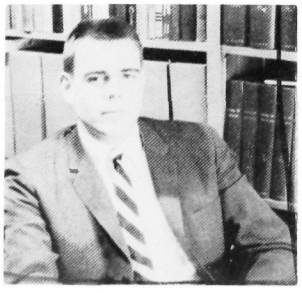
Associate Professor
Harold E. Young

Forest Mensuration



Associate Professor
Ralph H. Griffin

Silviculture



Samuel Brock

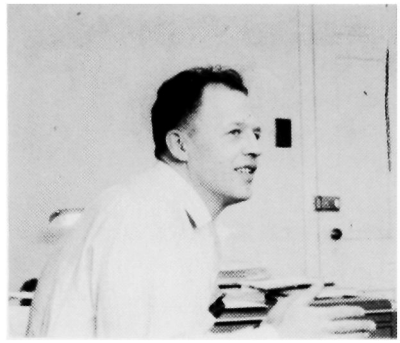
Forest Economist

Associate Professor
Henry A. Plummer

Harvesting

FACULTY

Professor
Howard L. Mendall
Leader

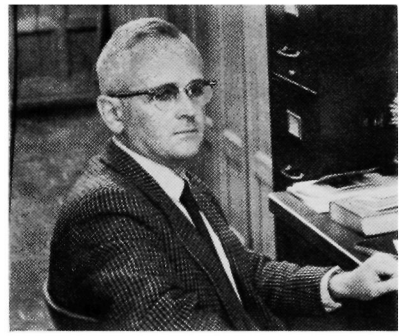


Chester Banaziak
Staff

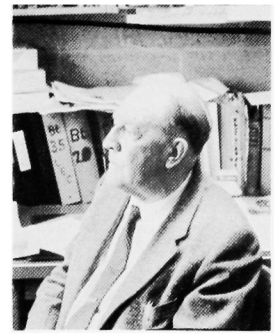
Associate Professor
Malcolm W. Coulter
Assistant Leader

WILDLIFE RESEARCH UNIT

Professor
Richard J. Campana
Forest Pathology



Associate Professor
Charles D. Richards
Taxonomy



Professor Fay Hyland
Dendrology

Professor Roland A. Structemeyer
Forest Soils

Professor
George R. Cooper
Plant Physiology

Assistant Professor
John B. Diamond
Forest Entomology

OTHERS

Miss Joyce Gifford
Office Staff

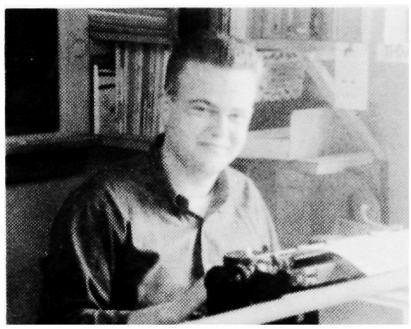
Mr. Roger F. Taylor
Superintendent
University Forest

Mrs. Harold E. Young
Office Staff

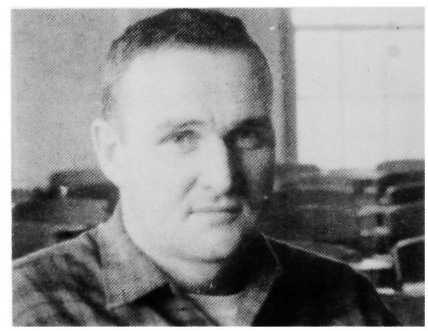
GRADUATE STUDENTS

A. Temple Bowen, Jr.
Framingham, Mass.
Forest Management
B.S., U. of Maine, 1958
Thesis:
Red Spruce Study

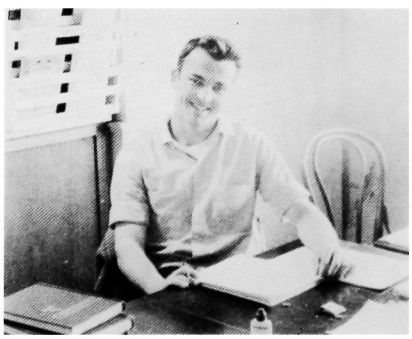
Daniel James Coutu
Parkersburg, W. Va.
Wildlife Management
B.S.F., West Virginia Univ., 1959
Thesis:
Study of Beaver Reproductive Rate



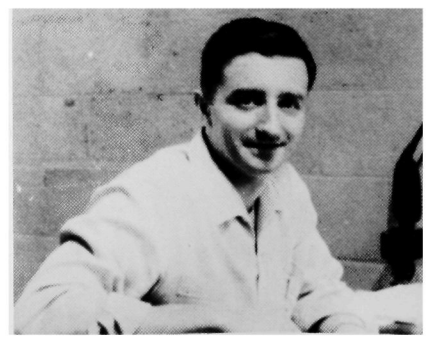
Richard Mayor Gibbs
Holyoke, Mass.
Wildlife Management
B.S., U. of Mass., 1959
Thesis:
Common Goldeye Breeding Study



Hugh Haswell
Niagara Falls, New York
Wildlife Management
B.S., U. of New Brunswick, 1952
Thesis:
White-Tailed Deer Population Study



Frederick J. Payne
Bradley, Maine
Wildlife Management
B.S., U. of Maine, 1957
Thesis:
Beaver-Woodcock Relationships



Bruce E. Stewart
Katonah, New York
Forest Recreation
B.S., U. of Maine
Thesis:
Recreational Use of Private Land

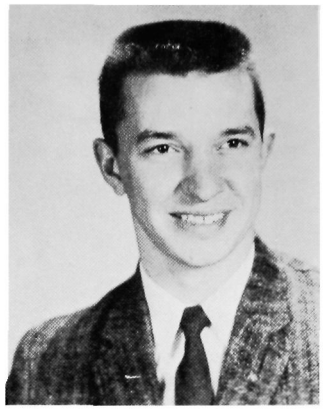
SENIORS

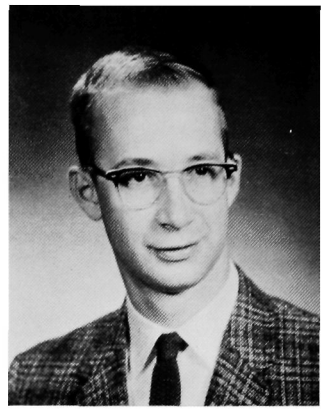
JOHN W. ALMOND

Rochester, N. H.

Forestry

Alpha Gamma Rho
Xi Sigma Pi
Scabbard and Blade
Forestry Club
"M" Club
Varsity Rifle Team
ROTC Rifle Team
Scabard and Blade Drill Team
Distinguished Military Student





DAVID S. BRETON

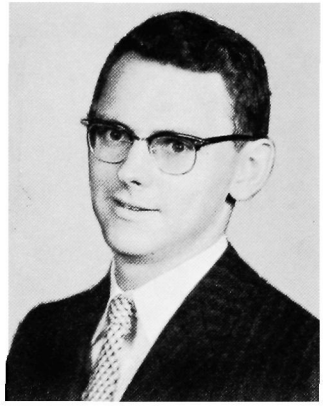
Rumford

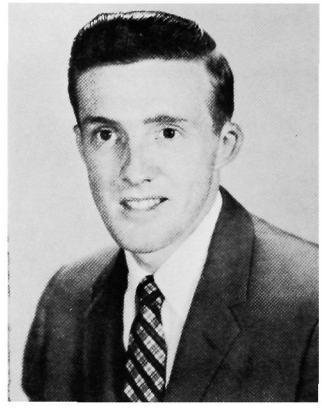
Pulp and Paper
Alpha Tau Omega
Xi Sigma Pi

TERRY W. BROOKS

Orland

Forestry
Sigma Chi
Varsity Track Team





MERTON F. BROWN, JR.

Burlington, Vt.

Forestry

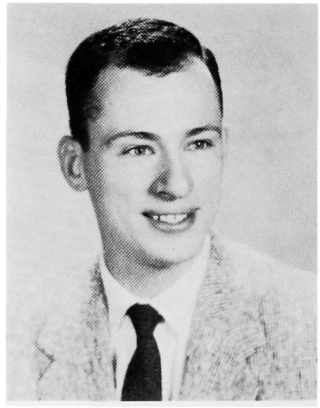
Xi Sigma Pi
Forestry Club
"M" Club
Varsity Rifle Team

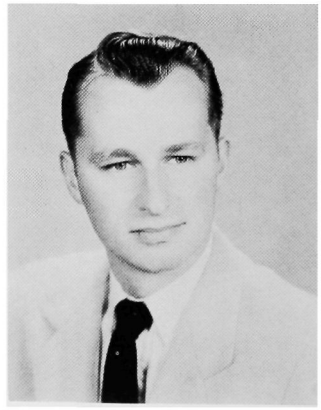
PETER W. CROSS

Bennington, Vt.

Forestry

Alpha Gamma Rho
Alpha Zeta
Forestry Club
Outing Club
Freshman Basketball
Interfraternity Sports





RICHARD J. DAWSON

Malden, Mass.

Forestry

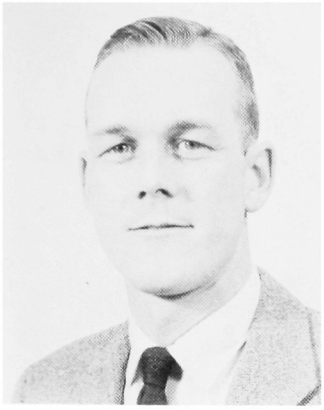
Lambda Chi Alpha
Forestry Club
Hot Shots

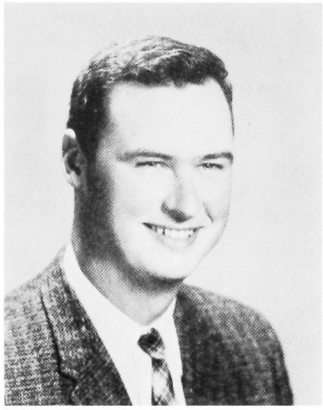
DONALD T. EDWARDS

Gardiner

Forestry

Sigma Chi
Sophomore Owls
Xi Sigma Pi
Forestry Club





ROBERT A. EVERETT

Waldoboro

Forestry

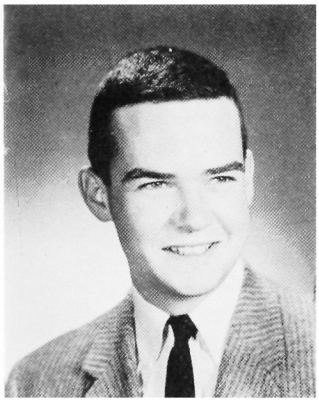
Delta Tau Delta

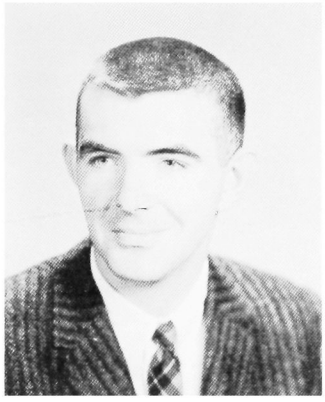
RUSSELL D. FIELDHOUSE

North Haledon, N. J.

Wildlife Management

Alpha Tau Omega
Xi Sigma Pi





PAUL R. FISKE

Waterbury, Vt.

Forestry

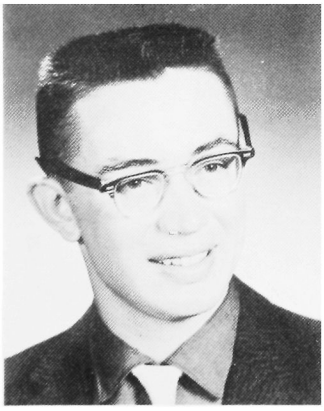
Delta Tau Delta
Forestry Club
Intramural Sports

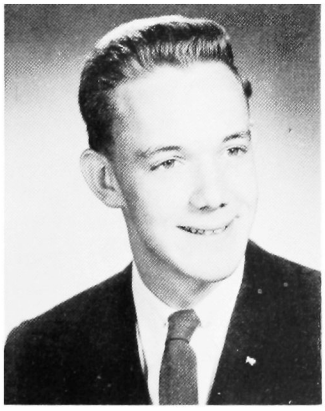
JAMES J. GALABA

Darien, Conn.

Forestry

Forestry Club
Hot Shots
Maine Outing Club
Newman Club





RICHARD D. GOODENOUGH

Belleville, N. J.

Forestry

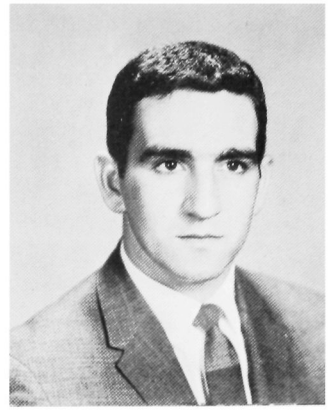
Alpha Gamma Rho
Forestry Club; Sec., Pres.
Hot Shots
Intramural Sports
Maine Christian Association

ROBERT D. GREENLEAF

Otisfield

Forestry

Forestry Club



RICHARD W. GROFF

Westlake, Ohio

Forestry

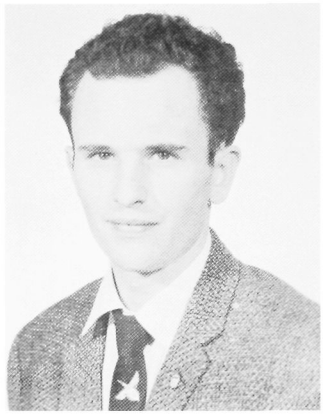
Forestry Club
Maine Forester, Photograp
Editor
Hot Shots
Maine Outing Club

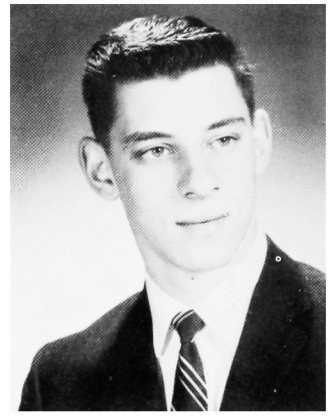
ROY C. HITCHCOCK

Williston Park, N. Y.

Forestry

Forestry Club
Hot Shots





DENNIS P. JETTE

Lebanon, N. H.

Forestry

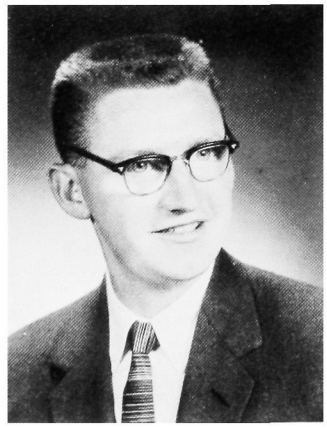
Phi Kappa Sigma
Forestry Club
Newman Club
Freshman Cross Country
Freshman Track Team

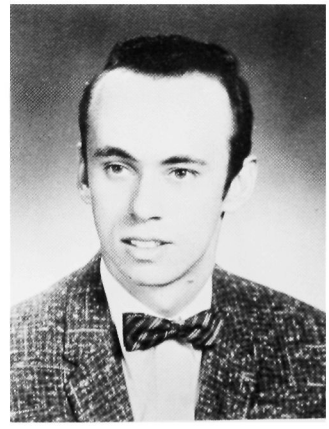
EARL R. JETTE

Lebanon, N. H.

Forestry

Forestry Club
Hots Shots
Woodsmen's Weekend
Maine Forester, Circulation Mgr.
Freshman Track Team
Newman Club





CURTIS A. JOHNSON

Haddon Heights, N. J.

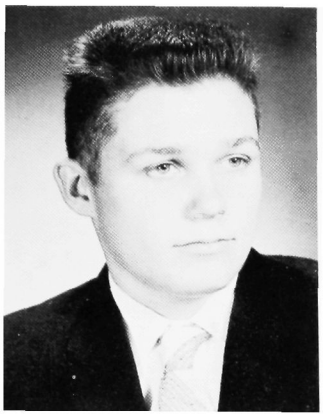
Wildlife Management

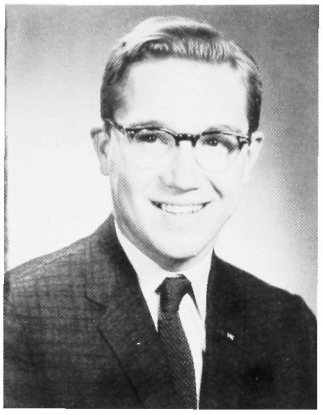
JOSEPH P. LEPKOWSKI

Gardner, Mass.

Forestry

Forestry Club
Biology Club
Intramural Sports
Newman Club





DAVID W. LEWIS

Darien, Conn.

Forestry

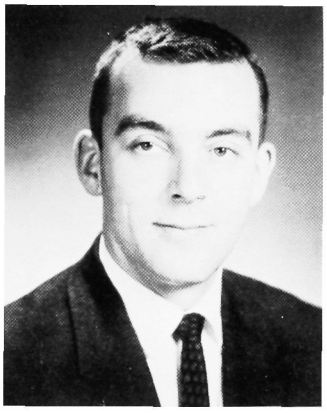
Alpha Gamma Rho
Xi Sigma Pi
Forestry Club
Hot Shots
Maine Forester; Art Editor, Co-editor
Maine Masque Theater
Biology Club
Maine Christian Association
Varsity Rifle Team
Interfraternity Sports

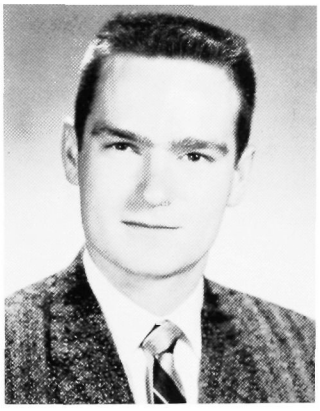
THOMAS C. LINDSEY

Weirs Beach, N. H.

Forestry

Delta Tau Delta
Sophomore Owls
Forestry Club
Maine Day Committee
Freshman Football
Interfraternity Sports





BRUCE H. PLATT

Saugus, Mass.

Forestry

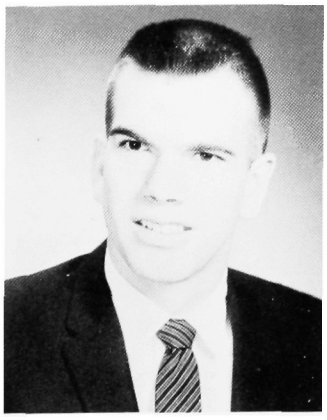
Alpha Gammo Rho
Xi Sigma Pi
Forestry Club
Maine Forester; Advertising Mgr., Co-editor
Distiguished Military Student
Interfraternity Sports

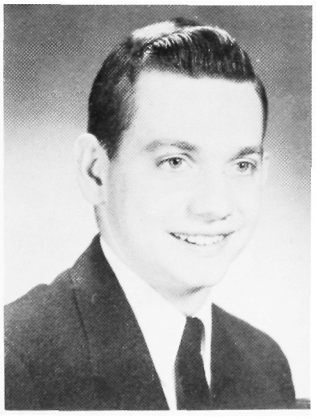
FRED M. ROONEY

Cleveland, Ohio

Forestry

Alpha Gamma Rho
Forestry Club
Intramural Sports



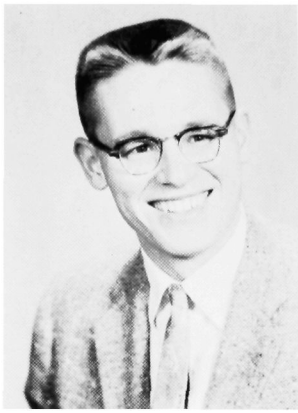


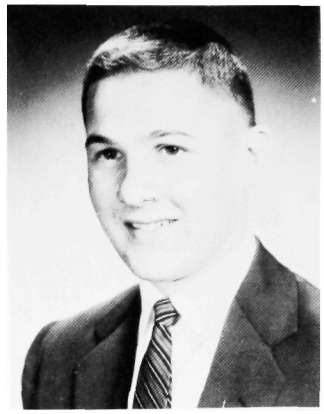
RAY B. SEGRIST

Lewisburg, Pa.

Pulp and Paper
Theta Chi
Xi Sigma Pi, Sec.-Treas.
Phi Kappa Phi
Interfraternity Sports

Gordon H. Small
Randolph, Vt.
Forestry





Joseph E. Solari
Fryeburg
Forestry
Hot Shots, Foreman

NOT PICTURED

William M. Alden
Needham, Mass.
Forestry

Rudolph J. Baliko
R. D. Pittstown, N. J.
Forestry
Forestry Club
Newman Club

Peter G. Belluschi
Boston, Mass.
Forestry
Sigma Nu

Albert J. Bernard
Skowhegan
Forestry
Forestry Club
Maine Outing Club

Wayne A. Bonney
Westbrook
Wildlife Management
Beta Theta Pi

HORACE S. BROWN, JR.
Glover, Vt.
Forestry

BRYAN C. BUCHANAN
Old Town
Forestry
Forestry Club
Freshman Football

JOHN D. CARR
Belfast
Forestry

JOHN H. CLAUSSEN
Closter, N. J.
Wildlife Management

PAUL M. COOK
Waterville
Forestry

PAUL D. DALY
Fayson Lake, N. J.
Wildlife Management
Sigma Alpha Epsilon

JON R. HITCHEN
Cape Rosier
Forestry
Alpha Gamma Rho
Xi Sigma Pi
Forestry Club
Hot Shots

RICHARD A. KENNEDY
North Canton, Conn.
Forestry
Xi Sigma Pi
Forestry Club
Hot Shots
Maine Outing Club

JOSEPH A. LINSCOTT
Farmington
Forestry
Xi Sigma Pi

MERTON E. LOMBARD
Caribou
Forestry
Alpha Gamma Rho

DONALD E. MACLAUCHLAN
Machias
Forestry
Phi Gamma Delta

ROLLAND F. PERRY
Lincoln
Forestry
Forestry Club
Maine Outing Club
Intramural Sports

HUGH O. PLUMMER
Westbrook
Pulp and Paper
Beta Theta Pi

LAWRENCE O. SAFFORD
Waterville
Forestry
Xi Sigma, Pi, Forester
Phi Kappa Phi
Forestry Club
"M" Club
Varsity Track Team

DAVID W. TABER
Palermo
Forestry
Alpha Gamma Rho
Xi Sigma Pi
Forestry Club, Sec.
Intramural Sports

Class of 1961

By DENNIS JETTE

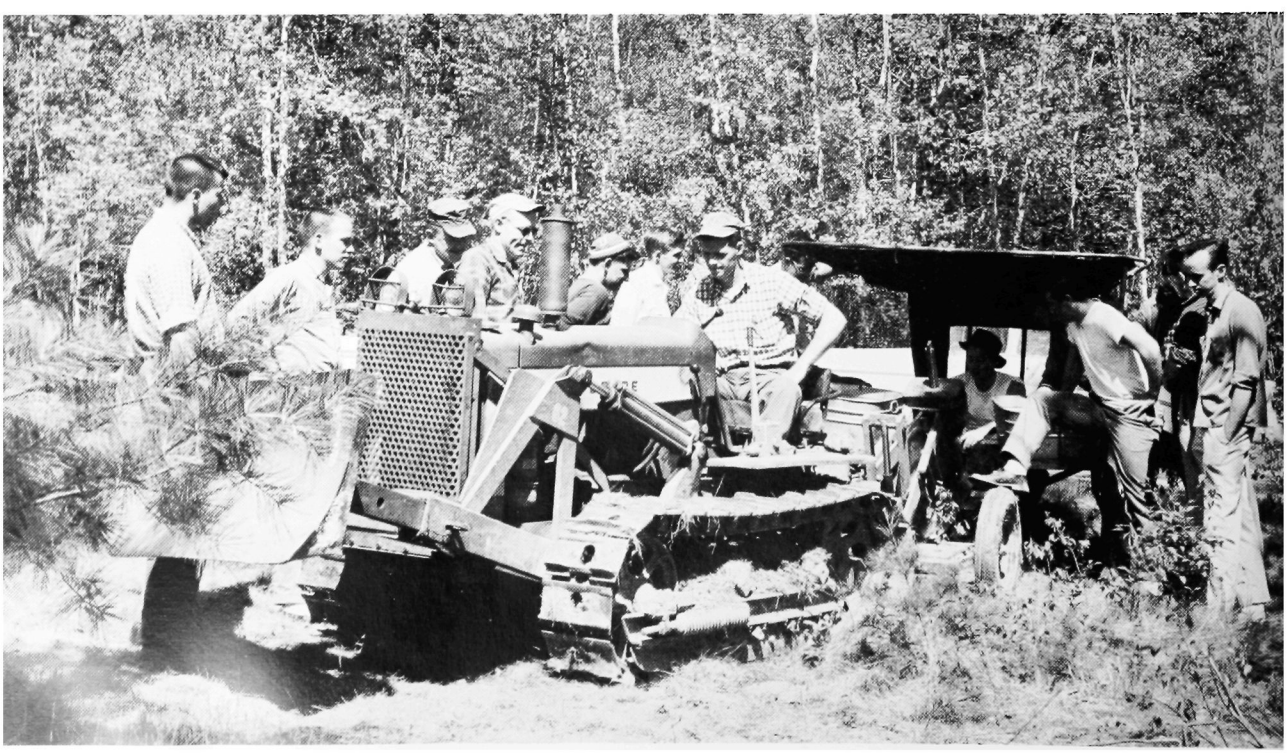
Four years ago the doors of college were opened to us, and we obtained the opportunity to prepare ourselves for the future. We are now about to exit through these doors and end the first phase necessary for a successful career, that of technical knowledge.

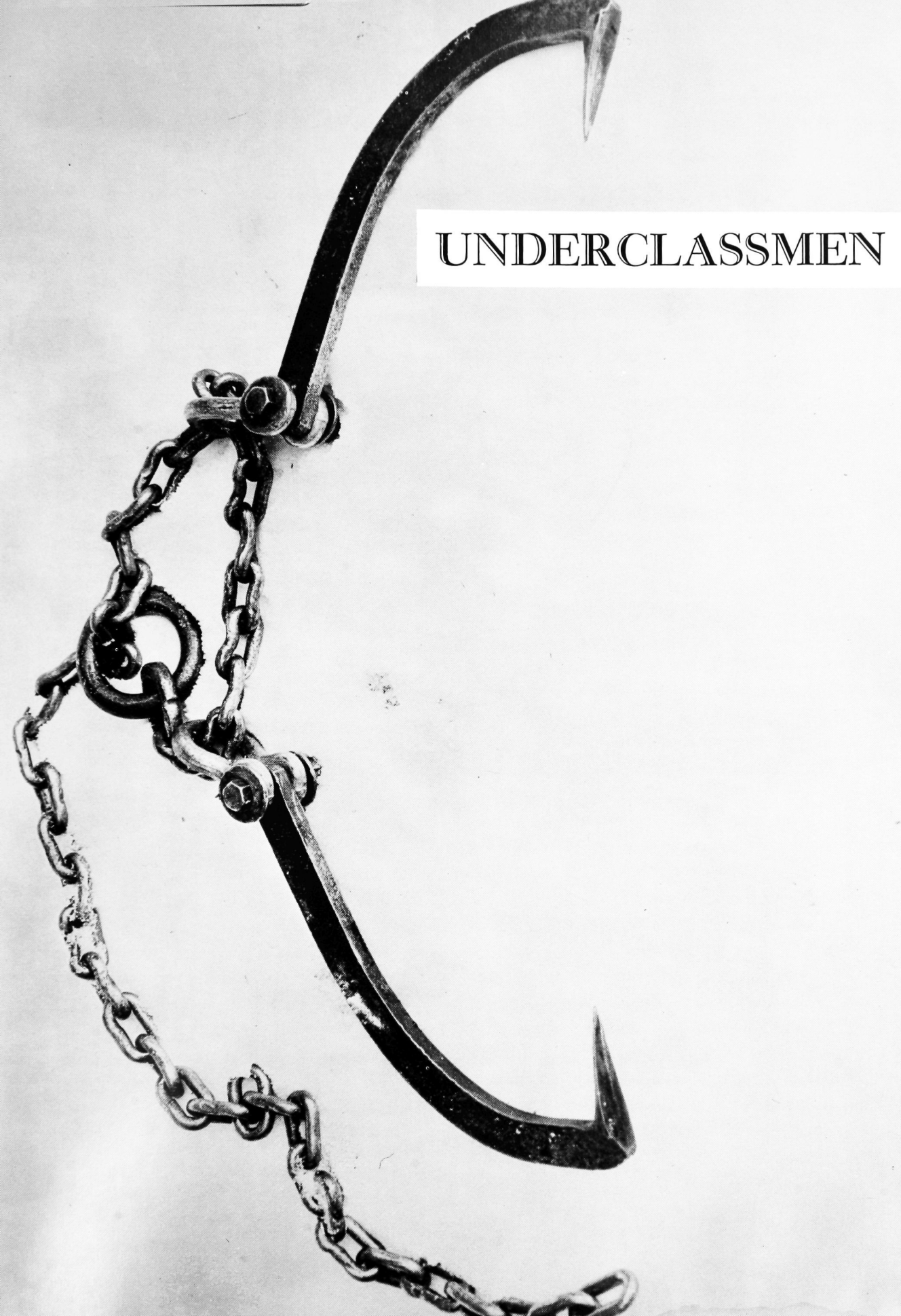
Whatever future use we will make of this classroom acquired technical background will soon lie in our own hands. We have only acquired basic knowledge in a technological field where professionalism is being given more and more emphasis. Whether we will use our technical backgrounds in a lecture room, laboratory, or in the field, we must not feel that our need for education has come to an end. If this be the case, then we will fall short of our potentialities.

We, as graduating foresters, are taking on the responsibility of being ready at all times to promote our profession and to promote it well.

Our relationship as a class has become quite close during the past four years. We have come to be a local fraternity of our own, and we are about to join the larger fraternity of professional foresters. We have undergone many similar experiences. None of us will be likely to forget the deer flies, the mud, and the mosquitoes of Indian Township. We have endured many of the same prelims, quizzes, and reports and seen the same numerous stands of red pine. We have all benefited in some way from our experiences and acquaintances.

Our many thanks to the members of the staff and faculty whose doors have always been open to us. Without their guidance we would be unable to approach and to answer the demands of this technical age.





UNDERCLASSMEN

Class of 1962

By DAVID A. LIBBY

Upon returning to Deering Hall from all parts of the country after a summer of sunshine, work, and other memorable experiences, it was a little difficult to realize that vacation was over, and it was time to hit the books again. Behind us is the West, the cool summer nights, the fishing trips, and the paydays when the money was rolling in, and ahead of us lies the hope and for success in the future.

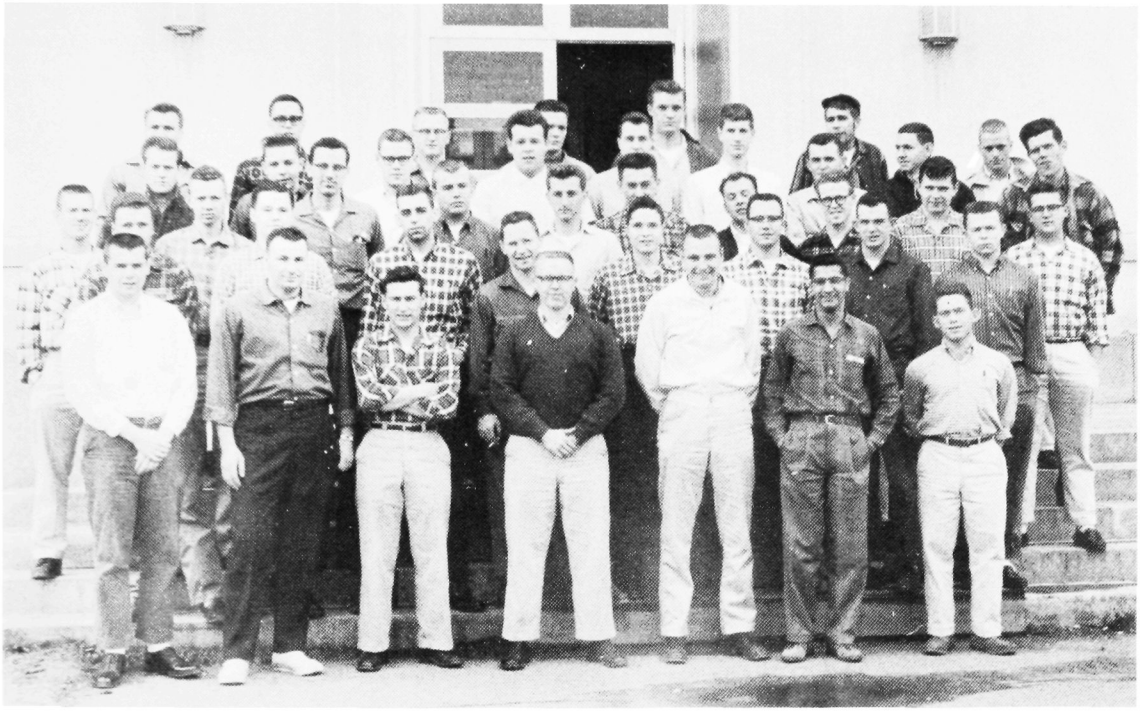
From the start of the first semester of our freshman year the class has been constantly shrinking away until there are only a few of us left from the original class. This year there were a flock of transfers into the junior class from other schools which added color and new concepts while increasing the size of the class considerably.

During the fall semester we were introduced to Plant Anatomy, Soils, Physiology, and Silvics; along with a number of electives—History, Astronomy, Weather, and Music—to name a few. Writing reports became an never-ending task while the last exam usually was the most popular topic of conversation. Probably the long, cold, wet trips to the University Forest for Silviculture labs and the sliced fingers from wood identification will long be the most remembered activities of the spring semester.

Interests in extra-curricular activities ranged from varsity sports, Track, Outing Club, Rifle Team, Geology Club, Forestry Club, Hot Shots, and other various activities as the class is well represented in campus life. A few have elected Advanced Military, and once a week they swap their axe for a rifle. At any of the social events, dances, movies one would not have to look far to find a forester from the "Class of 62"—especially at the Bear's Den.

As each day goes by, the time for spring trip and summer camp looms closer and closer. Some of us are looking forward to summer camp, while others are in doubt as to whether they can afford it. At any rate the rumors thrown around by the seniors make one wonder. Looking ahead, most of us feel some anxiety (as the end may seem in sight for some of us), toward that day in June 1962 when we will have that seal of approval to wade through the bogs and swat mosquitoes.

JUNIORS



Forestry

Allen, Douglas Charles
Angevine, H. William
Atkins, John Pearson
Authier, Pierre Harbort
Berchet, Dennis G.
Cahoon, Donald Malcolm
Childs, Albert Jerome, Jr.
Cote, Robert Ernest
Cunningham, Seymour
Downing, Malcolm Frank
Hussain, Nemah Kati
Jewell, Thomas Robert
LaTourette, Alvah Norman
Libby, David Arlyn
Millard, William D.
Moore, Henry Winslow
Morrill, Gayden Wells
Morse, Sherwood Harry
Osborn, Robert Weymouth
Pare, Maurice Romeo
Rhoades, Robert Norman
Sachsenmaier, Warren Wesley
Schwink, Frederick Joseph
Skorski, Edwin Anthony, Jr.
Stevens, Richard A.
Streeter, Donald Wesley, Jr.
Teubner, Stuart W.
Thayer, Richard Cutler
Turner, David Harvey
Turner, Terry Lawrence
Utton, Jack William
Verduin, Robert William
Warren, David William
Waskiewicz, Malcolm Donald
Whittemore, Bruce H.
Wilcox, Frederick Thomas

Wildlife Management

Barclay, John Scribner
Davis, Clarence W.
Davis, Peter Reese
Incerpi, Angelo
Nickerson, Richard Barrett
Rollins, Glenn Leslie II
Scott, Matthew
Venno, Paul Maurice William

Class of 1963

By RICHARD STAIGER, AL LARSON, DAVE RICHARDSON

This past fall the Forestry Class of '63 returned to its base of operations Deering Hall. We had seen the West and some parts of the East. We returned numerically decreased by better then a half from a year previous but with increased enthusiasm. By now the majority of those remaining had made their decision to persue a course of Forestry and settled down for a year of hard studying.

In making our decision to become professional foresters many factors were considered and upon evaluation some realized that this wasn't their professional calling and switched fields. We have now come to realize that a modern forester doesn't have to come out of the woods looking and smelling like a piece of old growth timber.

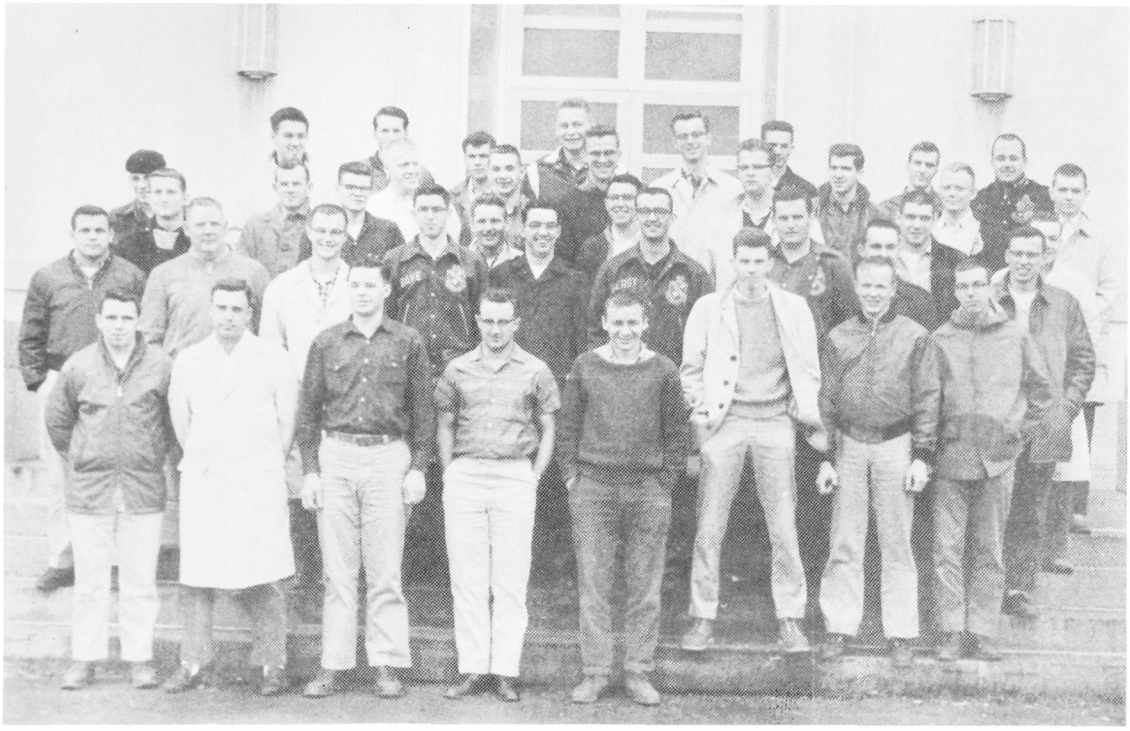
We found our courses this year more directly applicable to forestry. Instead of basic science and art courses, practical sciences such as Mensuration, Dendrology, Entomology, and others were studied.

Realizing that study alone doesn't make a well rounded forester, snowshoes, guns, and decoys were cleaned and readied for action. These will be replaced this spring by fly rods and creels. Besides these off-campus activities the Sophomores took an active part in Professor Randall's Hot Shot Crew, with Lee Hoar heading up the activity. Forestry Club was also a success, and there too the Sophomores were in evidence, with Al Larson as Treasurer and Lee Hoar as Vice President holding executive offices.

As we near the mid-way point of our college career and with the inspiration and guidance of our professors, we are beginning to realize what is to come. The wide profession of forestry is opening up before us and we are preparing, as best we can, to meet this ever increasing challenge.

"West of the Penobscot"

SOPHOMORES



Forestry

Arseneault, Norman George
Bleicken, Eric Vaughn
Brackley, Allen Marquis
Brown, Richard Lindsay
Dionne, Joseph James
Dudley, Tyler Edward
Field, David Badger
Gammon, Calvin Burchard
Hoar, Leigh Eric, Jr.
Holden, Eric Jan
Keene, Clifford Ramsdell
Kendall, William Everett
Larson, Albert Lloyd
Lipsey, John Ogden, Jr.
Lovejoy, Richard Albert
Mallett, Ronald Joseph
McGlauflin, Hollis Arthur
McKenna, Richard
Mitchell, Roger James
Nason, Richard George
Obrien, Lewis Bernard
Palmer, Hubert Samuel
Percival, Gary Willis
Porch, Stephen Letson
Purinton, David
Richardson, Charles David
Richardson, Ernest Merrill
Roberge, Paul Laurier
Root, Robert Alan
Sarnow, Stuart Grant
Shaw, Jonathan Lassell
Shepard, Robert Kent
Smith, Converse Burr
Staiger, Richard Dreyer
Taylor, Allyn Chandler
Toomey, John Philip
Trundy, Gerald Erlon
White, Dennis Henry
Wilson, Stephen Packard
Young, Barry Allan

Wildlife Management

Andrews, Philip Scott
Ferguson, Edgar Lochlin
Florence, Ben Mayo
Gramlich, Francis James
Heinrich, Bernard
Moulton, John Clemons
Murphy, Charles Richard

Class of 1964

By Bob August and Ernie Torok

September 17, 1960 saw seventy-three freshmen foresters arrive on the campus. Although everything was new and perplexing, our tour of the campus and the University's forest during orientation made us better acquainted with the University. Freshman orientation terminated with the Freshman Mixer which introduced us to the other freshmen and made us feel right at home.

The next few weeks saw us begin a new way of life. Many of us were out on our own for the first time and found it a unique experience. Our lives soon became a mixture of social activities and studies, with the emphasis on the former quite often.

Realizing the task before us, we quickly settled down to work. To many of us, the library became a second home. We owe a debt of gratitude to our advisors who did a tremendous job in keeping many of us from falling behind in our work.

Prominent among our activities was the Forestry Club under the direction of Professor Beyer. We heard lectures, saw slides, and heard several guest speakers who were involved in all fields of forestry. The club helped to increase our knowledge of the profession of forestry.

Early in the fall semester the "Hot-Shot" crew was organized. Approximately forty freshmen and upperclassmen under the fiery eye of Professor Randall composed the crew. As usual, much practical experience and good, wholesome exercise was gained by those who participated. The highlight of the program was a demonstration-outing held in Dixmont during Fire Prevention Week in which the Maine Forest Service and the "Hot-Shot" crew participated.

Many of us were also active in sports. Although a great majority participated in track, we were also well represented in football and baseball.

In addition to sports, dances, movies, and the Union occupied much of our hard-pressed time during the first semester.

The beginning of second semester saw many of us caught up in rushing activities. It will be hard to forget that first hectic week in which many of us spent our meal periods at the various houses and became more and more confused as we met so many new friends in such a short period of time. Finally, we were faced with the tough decision of choosing a house that best suited our taste.

With the spring semester came our quest for summer employment to fulfill our experience requirements. Many of us have accepted jobs in the western part of the country while others are planning to work closer to home.

As the year draws to a close and the time when we will officially become sophomores draws near, some of us will have to decide whether we will go on to major in forestry or change over to wildlife. But, whatever the decision, we all will be eagerly awaiting the opening of the fall semester.

FRESHMEN

Allen, Peter Bernard
Bourque, Peter Michael
Briggs, Leon Robert, Jr.
Bruce, Robert Gordon
Cahoon, John Burton
Caler, Bruce David
Davenport, James Alan
Demora, Stephen John, Jr.
Dodge, Norman Henry
Edge, Thomas Valentine
Ellison, Arthur Frank
Erskine, Douglas Dwight
Feltman, Thomas George
Field, John Early, Jr.
Galvani, Peter Francis
Gill, Robert Pearson
Gordon, Robert Stanley
Gray, Morrell Dexter, Jr.
Handschumacher, Ronald Wayne
Hanson, Neil Walter
Jackman, Gregory Adelberg
Lacroix, Jeffrey Alan
Richardson, Dale Morris
Dineen, Norman John
Mantai, Kenneth Edward
Martin, Robert Wesley
Newman, Thomas Kenneth
Parker, Michael Lee
Puleo, Vincent Salvatore
Seaha, Walter Peter
Severson, Daniel John
Smith, Daniel Adams
Smith, Elliot Winthrop
Stevens, Alan Ray
Thomson III, James Laurence Hutton
Titcomb, Alan Barbour
Torok, Ernest Arthur
Trouant, Peter Lynn
Whitman, William Raymond
Young, Dennis Julian
Yuodsnukis, Anthony Joseph
August, Robert Martin
Beal, Kenneth Lee
Benning, Douglas Stanford
Brann, David Wilbur
Casey, Dale Cameron
Cluff, Bruce Gordon
Colt, Richard Lewis
Frew, Robert Edgar, Jr.
Harvey, Ernest Bartlett, Jr.
Hescock, Jonathan Clemmons
Marin, Roger Arthur
Moroney, John Francis
Phillips, Clifford Laurent, Jr.
Pinkey, George Albert
Richards, Bruce William
Sherman, Hamilton Cary
Small, Asa Martin
Spear, Charles Edwin
Van Valkenburg, James Pardee
Wiersma, George Bruce
Wiley, Joseph Edward III

ARTICLES

Recreation Study

By BRUCE E. STEWART

The problem under investigation is in the field of forest recreation on private timber land.

In view of the fact that literature on this subject is limited, I am attempting to determine through personal interviews the desires of the recreational users in regard to the roads and other facilities made available to them by the private landowners on a protion of the State of Maine. By employing a questionnaire in conjunction with personal interviews I hope to obtain the views and opinions of recreational users in regard to existing facilities, improved facilities depending on cost, and landowner and operator management policies. In addition to this I intend to obtain the views of those most intimately associated with recreationists namely game wardens, public and private foresters, landowners and operators, and fish and game biologists.

The area chosen for this study extends north and east of Bangor, Maine, and is enclosed by Routes 2 north to Lincoln, 6 east to Topsfield, 1 south to Woodland, and 9 west to Bangor. The area is unpopulated woodland that has been logged over several times during the last 140 years and contains several hundred miles of logging roads, the conditions of which vary from overgrown to newly constructed. There are many lakes, large and small, thousands of trails and streams, and a number of small mountains from the tops of which magnificent scenic views are offered.

It is my intention through examination of past operations, work done by public agencies, company road construction, maintenance, and planning policies, and interpretation of information received from interviews, to resolve the problem of recreational use of private roads and land into a clear and as closely knit unit as possible for presentation in thesis form, and on the basis of this information to make appropriate recommendations for future consideration.

Forest Management—A Tale of Indian Township

By ARTHUR G. RANDALL

Indian Township is well known to Maine foresters, and many a song and story has told of life at Camp Robert Ashman. Less often told is the fact that this township is peculiarly suited for use as a laboratory in forest management. All activities at camp are directly tied in to the management of this specific property. Foresters, this closely held secret has been leaked by the faculty.

When songs are sung of Indian Township, they should always be true ones and never should do less than justice to the number and size of the mosquitoes, the depth and extent of the swamps, and the density of the fir thickets. But, say! when the sun is shining on the green spruce trees, isn't that a beautiful sight, And, after a shivery dip in Lewey Lake, was that your fourth or fifth helping at supper last night?

The songs may remember that this land has belonged to the Passamaquoddy Indians since the days of Madockawando, their ownership of Township 2, Range 1 of Titcomb's Survey having been recognized by Massachusetts in 1795 and by Maine since 1820. The Forest Commissioner is responsible by law for the timberland, and the University has been helping to manage it since the camp was built in 1931. The St. Croix Paper Company has undertaken to purchase and harvest pulpwood. This three-way cooperation makes possible a planned annual harvest of timber. No poetic license is involved if the songs say that this is an unique arrangement.

At camp the student learns the objectives of management on the township. Economic objectives include annual sustained yield so that twelve to fourteen weeks of employment is provided each year to the sons of Madockawando, while stumpage is paid by St. Croix to the Indian Trust Fund; also supplying raw material to industries and contributing to employment opportunities in the St. Croix Valley. Silvicultural objectives include building up the growing stock, obtaining satisfactory growth, maintaining the ratio of spruce in the stands, and reducing damage from insects, disease, wind and fire.

A long line of foresters, some of the early figures bedimmed in the mists of time, have contributed to the management of Indian Township. The first task, after retracing the exterior boundaries established by William Dana and others, was to subdivide the township into units for management. These make it possible to keep cruise data in more detail, to locate improvements and sample plots, and to plan the harvest. Since stands are poorly defined and constantly changing, artificial compartments are used for this. Straight lines were run with a transit, except where roads or water boundaries could be used. A portion of these lines is cleared and painted each year. The work is partly mechanized, a brush cutter saw being used in 1960. At one point this machine was taken over by hornets and had to call the mist blower to the resuce.

Each year a new crew of foresters cruise more than half of the compartments. Two partners make a 2½% cruise of a compartment, using ⅛ acre circular plots. Cruise figures indicate 16,534 acres of forest land. Of this, 946 acres is reserved in two experimental compartments. Of the remaining 15,588 acres, 10,845 acres is softwood type. Timber volumes include 113,437 peeled cords of spruce and fir, 31,338 cords of hemlock, 17,400,000 board feet of pine, and lesser amounts of cedar and hardwood. If the later foresters compare their figures with earlier ones, they will find that this is the growin'est town. For example, 0.3 peeled cords per acre of spruce and fir in all types, or 0.65 rough cords per acre per year of spruce, fir and hemlock in softwood alone. But then foresters remember that growing conditions for spruce and hemlock have been unusually favorable in the last twenty years and that large ingrowth results from stands regenerated after the 1920 budworm outbreak.

The student sees that recreation and wildlife are also important uses of Indian Township and must be considered in the management plan. Lake shores are to be kept in their natural condition ex-

cept for the public campground on Long Lake. No commercial cutting will be done, other than on a salvage basis, within 150 feet of lake shores, the campground, and of hard-surfaced roads. Regular annual cuttings encourage deer, while the present intensity of management of both timber and deer is insufficient to warrant further measures.

The student learns that for partial cutting the total amount cut or the cut per acre is affected by the length of the cutting cycle. It is planned to cover all compartments in 20 years. The songs relate that this is about the shortest cycle justified by logging costs at present and about the longest that will permit satisfactory growth.

The annual cut has been fixed for the period 1958-67 at 1,500 cords per year of spruce, fir and hemlock pulpwood and 100,000 board feet of pine. This cut is conservative in relation to growth. There are several reasons for this. Rough hemlock is not desired by the company. A new plan for meeting this problem in 1960 is to treat the hemlock with sodium arsenite immediately after marking and delay the cutting of all pulpwood from December to April. Other reasons include heavy cutting during World War II and unusually favorable conditions for softwood growth in the past 20 years.

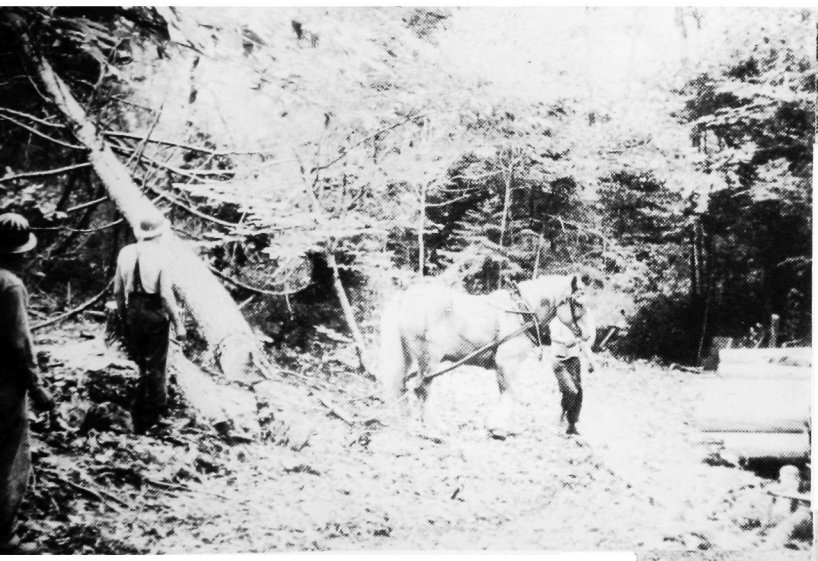
The forester learns that he must assign the compartments to be operated in a 10 year plan period and arrange them in convenient order for logging. At present on Indian Township it is desired to keep each year's operation within a compartment or equivalent area, to keep it within reasonable horse travel from the hovel, and to move only a short distance from year to year. In 1949 operations began west of Huntly Brook in the northern portion of the town and have moved west to the boundary of Grand Lake Stream Plantation, then southward and are now moving east in the southern portion of the town.

The annual cut of pulpwood is marked by students. In 1960, back-pack paint guns were used, and outsiders must have wondered at the orange men in the crew. Marking rules call for a combination of tree and group selection removing 50% of the volume of spruce, fir and hemlock 6″ d.b.h. and larger. The cut is heavier when the stand consists largely of fir or of tall, spindly spruce or of large hemlock and in the vicinity of pine seed trees. The results of marking have been the subject of work for the M. S. degree by W. H. Drisko in 1955 and A. T. Bowen in 1960.

And so the time passes at Camp Robert Ashman until the last day with its great remembered deeds in contest with other cabins, the prizes given by St. Croix Paper Company, and the last big supper. After the exodus next morning, the quiet of the forest settles over Camp Ashman for another year.

Wood to ∞

ABATTRE, EBRANCHER, TWITCHEE'



CORDEE'

Deer Research In Maine

By CHESTER BANASIAK

Collecting factual information pertaining to deer as a basis for biologically sound management of our most valuable forest game species has been a prominent part of Maine's wildlife program for the past ten years. Although most of Maine's interested citizens know that deer investigations are being carried out, few are familiar with what is being done, the personnel doing the work, and the role of the various agencies involved in getting the job done. Therefore, this article is aimed at "breaking the ice" toward a better acquaintance with the deer research set-up in Maine, and the highlights of our findings.

Essentially there are four agencies directly or indirectly involved in deer research conducted in Maine:

(1) Game Division of the Maine Inland Fisheries and Game Department

(2) U. S. Fish and Wildlife Service

(3) Maine Cooperative Wildlife Research Unit

(4) School of Forestry, University of Maine.

In no sense are the agencies competitive; rather, the State Game Division is served with financial aid by the federal organization and relies on technical services of the Unit and Forestry School personnel for contracted work. Over-all planning of the deer research program to fit State requirements is a function of the Game Division and carries with it the privilege of paying the bills from license fees. In turn the U. S. Fish and Wildlife Service through their Federal aid program (commonly known as the Pittman-Robertson Act) reimburses the State for three-fourths of monies spent on approved research and management projects. Funds for reimbursement are derived from an 11 percent federal excise tax on sporting arms and ammunition. These "earmarked" funds are apportioned to the states on the basis of land area and number of licensed hunters. With that background of hierarchy and financing out of the way, we can take a closer look at the State's deer research program.

There is neither time nor space to unravel the complete history of white-tail investigations in Maine for this account. Nevertheless, it should be acknowledged that formal studies of behavior, food habits and other facets of deer ecology were initiated by the Maine Cooperative Wildlife Research Unit in the 1930's. The Game Division's P-R investigations began about 1947 with localized winter deer range inventories and have gradually expanded in scope since that time. And present responsibilities for the deer research program date back to 1954.

Under the direction of W. R. DeGarmo, Chief of the Game Division, two fairly distinct, but complementary, lines of white-tail research have been followed. These involve habitat management studies, headed by John Gill, and investigations aimed at providing facts for regulatory management under my responsibility. Regional game biologists assist in planning and carry out most of the field work involved. In addition, segments of our studies suitable for thesis presentation have been contracted with graduate wildlife students of the Cooperative Wildlife Research Unit.

Both phases of our research activities are directed toward providing answers for long-range management of Maine's deer population. In brief, management is based on the principle that any given unit of habitat for any fixed time is capable of supporting a definite number of animals. Thereby regulatory management has as its goals (1) the harvesting of deer surpluses where they exist and (2) allowing continued increases in deer populations levels where habitat conditions and land-use practices warrant it. Where higher population levels are desirable and assured of proper harvest, improvement of food and/or cover conditions is a necessity. Regulatory management has received the greater share of attention in the past. However, the search for practical methods of deer habitat manipulation to supply more deer for anticipated increased hunting pressure is not premature.

Compared to most other states, the Maine deer herd and range are in excellent condition. Consequently we have an enviable "laboratory" for studying and testing habitat management procedures. Also, we are ahead of the game in that time is available to prepare for expected increases in hunting pressure and changes in range condition.

Deer habitat management studies have been planned around two vital facts of deer life. First, winter is the toughest time of year. Travel by deer is restricted so they must live on food available near acceptable shelter. Second, food and shelter conditions are largely determined by commercial forestry operations. Deer can be considered a by-product of woods operations.

Most types of operations do benefit deer. However, some may be harmful, notably large-scale clearcuts. Others might be better for deer if modified slightly. These observations have led to studies of the effects of various cutting practices on food and shelter conditions. Object is to refine suggestions for improving or stabilizing deer habitat without much cost to the landowner or operator.

More is known about deer food relation ships then about shelter preferences. Effects of shelter deficiency have been tested and detailed observations of the cover actually preferred by deer are underway. These and related studies, plus field tests of their findings, should contribute to improvement of deer hunting in Maine.

The facts for regulatory management have evolved gradually from masses of data collected statewide. Information gathered, compiled, and analyzed group conveniently into the following categories:

(1) Statistics pertaining to the legal deer kill distribution and non-season mortalities

(2) Regional measures of hunter numbers, effort, and success

(3) Indices of deer productivity and physical development obtained from samples of the fall harvest

(4) Winter deer range inventories and behavior studies

(5) Available information on Maine's climate, forests, agriculture, and human population distribution.

Findings of these investigations have been published in annual progress reports, Game Division publications, and other media. In brief, we have found major differences in winter deer range quality between our farm-woodlands and commercial forests regions. Further, a cosresponding difference in productivity and physical development among deer from these regions is also evident. Dissimilar habitat, winter climate, hunting pressure and kill densities contribute to those differences. In other words, the region producing our best physically developed and most productive deer is characterized by the following:

(1) Relatively mild winters
(2) Interspersed farm and woodlands
(3) Densest human population
(4) Heavy hunting pressure
(5) Excellent access
(6) High deer kill per square mile
(7) A deer population generally in balance with winter food supplies

In contrast, our regions of poorest deer development consists of forested land with characteristics directly opposite to those above.

Recommendations for deer season adjustments which evolved from these findings were enacted by the 1959 legislature. Season lengths and zones are now more closely aligned with boundaries separating major areas differing in land-use, deer condition, winter range quality, winter climate, and hunting pressure.

Although a major job has been completed, deer investigations are by no means at an end. There will be a constant need for periodic reappraisal of the many factors affecting deer populations. Likewise, the information compiled to date contains many glaring gaps which need filling. This can only be accomplished through new approaches and more efficient techniques. We still have a lot to learn.

THE KELSH PLOTTER

By DR. HAROLD E. YOUNG

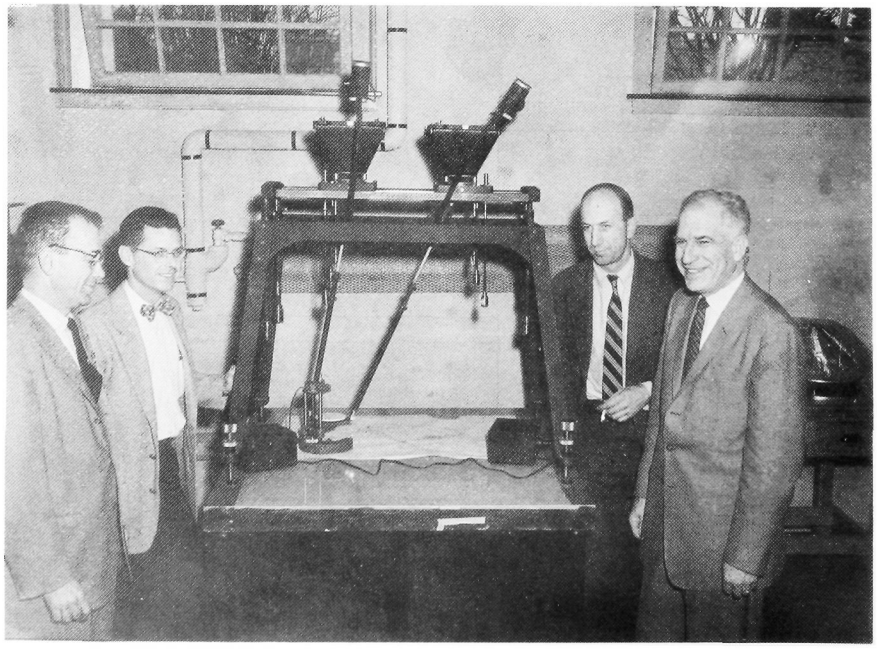
The James W. Sewall Company, consulting foresters and engineers, of Old Town, Maine have made available to the School of Forestry of the University of Maine a Kelsh Plotter. This second order stereoscopic plotting instrument is a welcome addition which will be utilized in the existing forest photogrammetry course, in special problems and research, by other departments of the University and may even be the basis, in the future, for an advanced photogrammetry course.

The Kelsh plotter is similar in general principle to the multiplex which has been used extensively for map compilation by the United States Geological Survey and the Army Map Service for over twenty years. It has three main distinguishing features: the use of contact-size diapositives; a moving illumination system that concentrates light on the portion of the diapositive image that is being projected to the tracing table platen; a model scale about twice as large as the multiplex scale for the same photography.

In the past eight years the Kelsh plotter has been used for special studies such as determination of the volume of huge piles of pulpwood and the area of pulpwood in water storage. Now it will be possible to explore on a research basis other possible practical uses of this precise plotting instrument. One that comes to mind immediately is the relative accuracy of contours of forested areas prepared by this instrument as a base for location of gravel and bulldozed roads that will be constructed in a large scale harvesting operation.

For the past 15 years photogrammetric equipment commonly used in forestry work has been accumulating in the Forest Mensuration Laboratory. Space requirements of the Kelsh plotter have necessitated converting Room 10, Deering Hall into a Forest Photogrammetry Laboratory to house it as well as the Multiscope and the Kail plotter. This laboratory will be for students and staff using this equipment as well as for demonstration purposes. For the time being, preparation of laydowns, use of the vertical sketchmasters, and photo interpretation work will continue in the Forest Mensuration Laboratory. Plans for a new forestry building include provisions for a Forest Photogrammetry Laboratory which will adequately house all existing equipment as well as that contemplated for some years to come.

It is doubtful if any other forestry school has photogrammetric equipment comparable to the Kelsh plotter made available to our School by the James W. Sewall Company. Thus our School has an opportunity and a challenge to increase its efforts in the field of Forest Photogrammetry in order to benefit the entire forestry profession.



H. A. Young, K. W. Cox, J. Sewell, and A. D. Nutting

Factors Influencing the Growth of Red Spruce in Partially Cut Stands

By A. Temple Bowen, Jr.

In recent years increased emphasis has been placed on the single tree selection system as a method of marking spruce-fir stands for harvest. This system has been practiced continuously since 1949 on Indian Township, a 20,000 acre tract of forest land in Washington County managed by the School of Forestry.

It was on this area that the writer, a graduate student at the Univ. of Maine, School of Forestry, undertook a research study concerned with the basal area growth of residual trees on partially cut stands. The objectives of this study were (1) to determine the correlation of certain tree and stand characteristics to the basal area growth of residual red spruce trees and (2) to evaluate the effective ness of the harvest in increasing residual tree growth.

The experimental design and a set of unique tally sheets were developed in the spring of 1960. The field work was done during the ensuing summer. Considerable help was given by the students in the class of '61 who were attending the Annual Summer Forestry Camp. The field procedure consisted of selectively sampling 216 trees and their adjoining plots on seven partially cut areas that had been harvested from one to seven years before.

Multiple regression techniques were used to analyze the data. In this manner the fifteen tree and stand characteristics (examples: dbh, age, height, live crown length, crown position, number of trees per acre and basal area per acre) were tested to determine their correlation with the dependent variable (tree basal area growth). Comparisons were made between the growth on each area before and after the cut to establish effects incurred by the cut.

The results of this study indicate that the most important single variable that may be used to assess the potential growth of a given tree is the basal area growth of that tree five years prior to the cut. Characteristics more useful to the timber marker that might also be used are live crown length and dbh. Stand basal area was significant only on the areas that had grown four, six and seven years since the harvest.

At this time it is possible to draw only a few tentative conclusions. It is evident that the larger trees are growing faster in terms of basal area. It is apparent that the harvest had no adverse effect on the basal area growth of individual trees during the seven growing periods covered by this study. No favorable effect was apparent until the fourth growing period at which time an inverse relationship between stand basal area and tree basal area growth was demonstrated.

Further analysis of the data will result in additional information that will be applicable in that phase of timber management concerned with the problems of marking timber.